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NAVAL UNDERWATER SYSTEMS CENTER
NEW LONDON LABORATORY
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PARKA I: SOFTWARE PROCEDURES REPORT

by

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INTRODUCTION

This memorandum describes the software procedures employed by the SANDS digital laboratory during phases I and II of PARKA I for the real time acquisition and processing of underwater acoustic data as received from FLIP. Brief descriptions of the tests, their objectives and equations are included. Program listings of these procedures are contained in Appendixes B and C.

ADMINISTRATIVE INFORMATION

This memorandum was prepared under NUSC Project Title: Long-Range Acoustic Transmission Experiments for Surveillance Systems Development; R. Hasse [redacted] R. Martin, NUSC/NL Principal Investigators. The sponsoring activity was ONR, Code 102-OS; Dr. J. B. Hersey, Program Manager.

DESCRIPTION OF EXPERIMENTS

The purposes of the experiments were to sample the underwater environment, as disturbed by acoustic sources propagating from a ship as it opened (closed) range. Propagation loss verses range measurements were made for various source depths, receiver depths and frequencies. As illustrated in Figure 1, two types of experiments wer conducted: Phase I in which 3 lb explosive charges were used as sources, and

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Phase II in which 3 and 4 lb charges followed by a continuous tone from a CW transducer were used as sources for the experiment.

Phase I

The source ship as it opened (closed) range, detonated a sequence of twenty-two 3 pound charges each hour. This hourly sequence of events is illustrated in Figure 1b. The last five-minute interval was used for an ambient noise sample and the presentation of processed data. The processing of shot data included for the various frequencies, hydrophone depths, source depths, etc.:

1. Determination of propagation loss from total energy observations.
2. Determination of propagation loss from peak level measurements.
3. The difference between the two types of propagation loss calculations.
4. Determination of hourly median values of the propagation loss.
5. Determination of range from each shot instant and time of received signal.
6. Measurement of ambient noise levels.
7. Measurement of signal-to-noise ratios of acoustic signals.
8. Correction of received levels based on signal-to-noise ratios.

Phase II

During each hour of this phase, the source ship detonated a sequence of five explosive charges followed by 45 minutes of a CW tone. This sequence of events is illustrated in Figure 1c. The last five minutes of each hour was used for obtaining an ambient noise sample and the presentation of processed data. The shop data were processed as was the data in Phase I. For the CW data, three additional measurements were taken:

1. 30 second running averages of the energy every two seconds.
2. 5 minute averages of the energy.
3. Propagation loss based on 5 minute averages.

The equations used to calculate the parameters discussed above are given in Appendix A.

FLIP TO SANDS DATA LINK

With FLIP tethered to SANDS and SANDS utilizing her bow thruster to help maintain station, the acoustic analog signals received by the hydrophones that were suspended from FLIP were relayed to SANDS. This was accomplished in two ways. One method was to transmit the data by way of an rf telemetry link, while the other method involved SANDS passing a hard wire to FLIP and then receiving the data via the wire link. Both methods were used successfully during the PARKA cruise.

CALIBRATION

Prior to commencement of each exercise the entire data acquisition system was calibrated. A known signal at each frequency of interest was fed through the system and into the computer. The computer, utilizing the attenuator settings and the calibration equivalent pressure levels, determined two sets of calibration constants, CAL and CALPK. These values were used to correct for the systems attenuation of the incoming signals on each channel. Upon termination of each exercise the system was recalibrated to determine if any changes in the systems characteristics had taken place.

The equations for CAL and CALPK are given in Appendix A.

SPECIAL FEATURES OF THE SOFTWARE

The flow of data received from FLIP was fed thru a system of filters, rectifiers, integrators, thru a multiplexer and an A/D converter to the central processing unit. The input signals were recorded on mag tape, processed and then released in the form of graphs, lists and punched paper tape. The processed data were also permanently stored on magnetic tape. The raw data tapes were kept for additional processing at a later date, if desired, and the processed data tapes were kept for preparing the data for different forms of presentation such as CALCOMP plots and other types of outputs.

The two software packages, written for the two phases were controlled by executive routines, (execs) which were designed as infinite loops such that one entire hour's events would be processed by one pass through the loop. These execs controlled the flow of events including input and output (I/O) and timing. The pulses from a time code generator were inputted to the UNIVAC 1230 so that exact times could be recorded and the basic timing of the sequences would also be exact. The actual timing of the programs by the exec was determined by the computer's internal clock, which the exec would

synchronize, if necessary, from the time code generator once every hour. In case the time code generator failed, an external key on the computer console could be set to eliminate the synchronization of the two clocks. Releasing this key would cause the exec to once again synchronize the internal clock from the time code generator once each hour.

To allow for the expected variation in the time of shot instant, the exec set up a "sampling window" which caused the sampling program to start searching for a signal 30 seconds early and continue looking for 30 seconds after the signal was expected. At that time it would be declared a dud, unless it was detected earlier by crossing six out of ten times, a threshold determined from the noise level. This sampling routine controlled the sampling rate, took the samples into core, demultiplexed and filled appropriate tables. Two sampling options were available:

1. Sample for 15 seconds at 250 samples/second after the signal had been detected. Also, since a history was kept, the 15 seconds worth of signal could be retrieved if the computer failed to detect the signal (false rest), by manually interrupting the computer from the teletype.

2. Sample for $7\frac{1}{2}$ seconds at 500 samples/second after the signal had been detected. Also, since a history was kept, the $7\frac{1}{2}$ seconds worth of signal could be retrieved after a false rest had been observed, by manually interrupting the computer from the teletype.

So that the progress and status of the computer could be monitored, a 2 channel hot wire recorder was used. One channel recorded the output from one of the filters, which indicated to an observer when the shots were being received, while the other channel recorded codes from the system's computer, showing just what the computer was doing at that time. An example of this is shown in Figure 2. To alert an observer to monitor the recorder, a bell was sounded every time sampling started.

Besides the execs and the processing programs, there were several interrupt routines, that is, programs which were initiated manually while the computer was running but which didn't disturb the calculations of the other routines.

1. Several seconds before a charge detonated, the source ship sent a tone over a radio channel. When the shot detonated, the tone was cut off. To record shot instant, an observer, listening to the tone, pushed a button when the tone was cut off which caused an

interrupt of the main program and recorded the time of shot instant and stored it in the proper place in memory.

2. In the case of an error in recording shot instants, typing a "C" on the teletype with the interrupt set would remove the latest time of shot instant.

3. When attenuators or other parameters were changed, typing an "A" on the teletype with the interrupt set would allow entering the parameters from the teletype into any location in core memory.

4. Setting another external key on the computer console, would hold the computer's progress after a noise sample was taken. To take another sample, typing an "R" with the interrupt set would cause the exec to cycle through the noise program again. The exec could be continued by releasing the key.

5. In case a false alarm was observed on the hot wire recorder, typing an "R" on the teletype with the interrupt set would cause the program to reset and start looking for another signal.

6. If a false rest was observed, typing an "F" with the interrupt set would cause the program to sample for n more seconds (where n was variable) and utilize that data, plus enough "past" data to make up the 15 ($7\frac{1}{2}$) seconds worth of data for processing.

7. If the exec for some reason lost synchronism with the 2 minute, 3 minute shot sequence, the "window" could be shifted in either direction by typing a "U" or a "D" with the interrupt set, each time shifting the window forward or backward in time by 10 seconds.

RESULTS

The processed data tapes were edited and other tapes created to eliminate erroneous values obtained from problems occurring during the tests such as loss of the bang box, etc. The data were further edited from the Sanborn charts which pinpointed additional problems that had arisen during the tests. From these edited tapes, the information for each set of graphs was separated onto more magnetic tapes, then plotted on a CALCOMP plotter. A total of about 150 graphs of N_W vs. R, S/N vs. R, Noise vs. R, were obtained for the two phases.

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ACKNOWLEDGEMENT

Appreciation is expressed for the contributions made to the project by Codes 2072 and 2073. Their machine operators worked after hours on occasion and even came in one weekend to assist on the project. P. Breslin programmed the HONEYWELL system to achieve compatability with the SANDS digital system, greatly simplifying the programming task and R. Drinkard has spent a great many hours and shown a great deal of patience, programming the 1108 for the CALCOMP plotter.

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APPENDIX A

EQUATIONS

The equation used to calculate the parameters described are:

RANGE: Range = (1.63 Kyds/sec)x(travel time in seconds)

Travel time was obtained as a result of an observer, listening via a radio channel, to a tone and pushing a button when the tone was cut off at shot instant. The computer then recorded the time of shot instant and subtracted that time from the time of received signal which was recorded when the input level of the arriving signal exceeded a predetermined level.

Let

X_{si} = the i^{th} signal plus noise sample.

X_{Ni} = the i^{th} noise only sample.

SR = the sampling rate.

Δt = 1/SR

NAT = The setting of the attenuators during the noise sample.

ATT = The setting of the attenuators during the signal sample.

L_s = The source level of a particular charge in the appropriate frequency band.

PEAK = The maximum value in a sampling interval.

The calibration values were calculated for given input signals for each frequency band:

$$CAL = 10 \log_{10} \left(\sum X_i^2 \Delta t \right) + ATT - CEPL$$

$$CALPK = 20 \log_{10} (PEAK) + ATT - CEPL$$

where CEPL was the appropriate cal equivalent pressure level in db.

SIGNAL LEVEL, corrected for S/N:

$$SIG = 10 \log_{10} \left(\sum X_{si}^2 \Delta t\right) + ATT - CAL$$

NOISE LEVEL

$$NOS = 10 \log_{10} \left(\sum X_{Ni}^2 \Delta t\right) + NAT - CAL$$

SIGNAL-TO-NOISE RATIO

$$S/N = SIG-NOS \text{ (corrected if low signal level).}$$

PROPAGATION LOSS:

$$N_W = L_s - SIG$$

where L_s and SIG were calculated from the same charge in the same frequency band.

PROPAGATION LOSS OF THE PEAK VALUES:

$$PL_{peak} = L_s - L_r$$

where $L_r = 20 \log PEAK + ATT - CALPK$

The median values were obtained by entering all the values in ascending order in a table, then retrieving the center value.

The program, for the CW period, sampled continuously at 20 samples/second, calculated 30 second averages of the squared and integrated values every 2 seconds plus calculating 5 minute averages of the squared and integrated values every 5 minutes during the CW period. Propagation loss was calculated as above using the 5 minute average results.

APPENDIX B

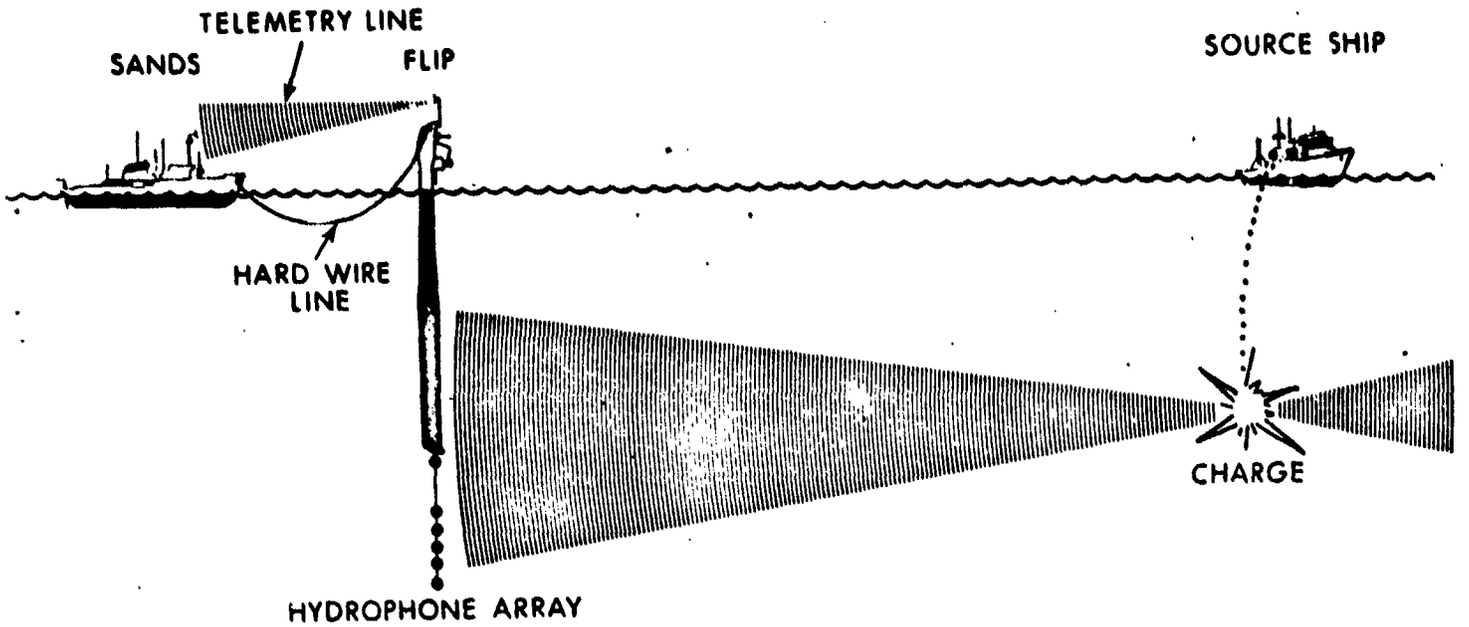

Fig. 1a SHIPS' RELATIVE POSITIONS

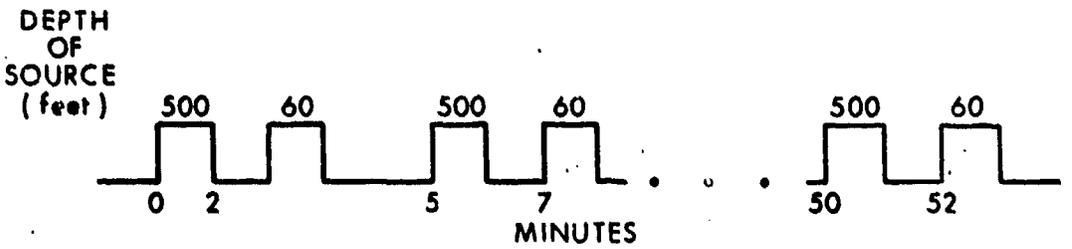

Fig. 1b PHASE 1 SEQUENCE OF EVENTS

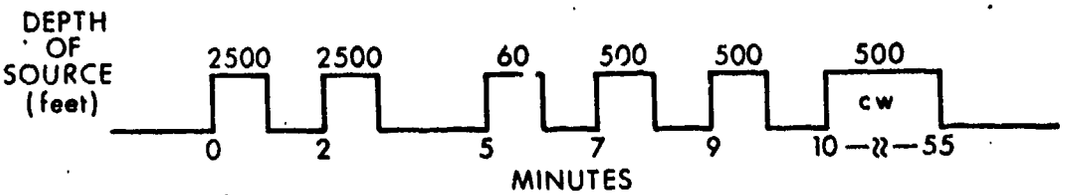

Fig. 1c PHASE 2 SEQUENCE OF EVENTS

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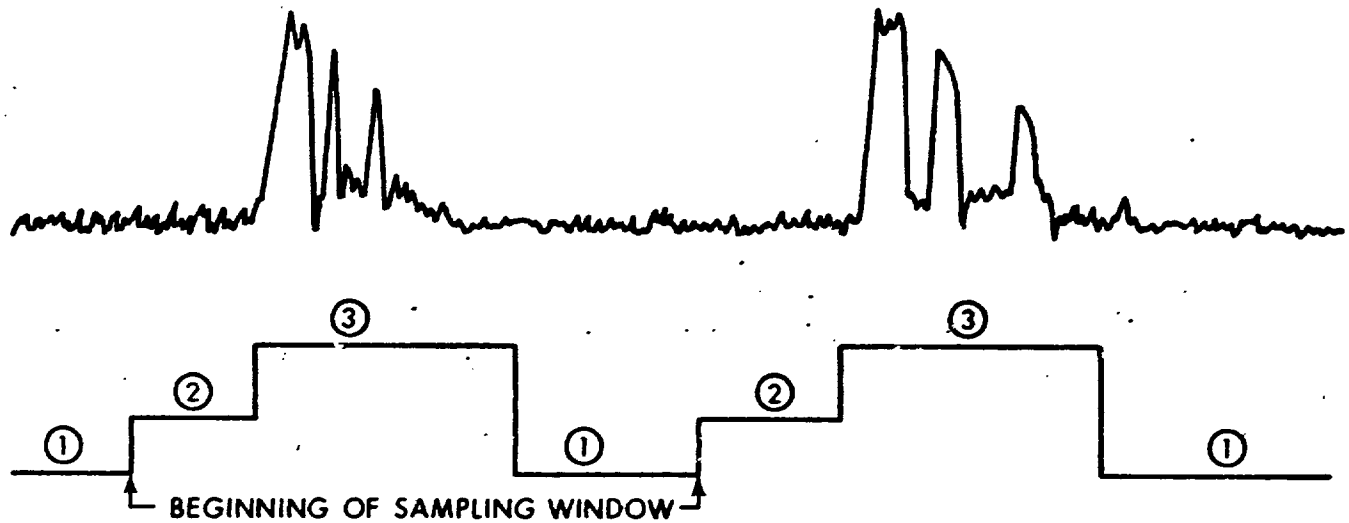

LEVEL (1) COMPUTER IS NOT INVOLVED WITH SAMPLING THE SIGNALS

LEVEL (2) COMPUTER IS IN THE SEARCH MODE

LEVEL (3) COMPUTER HAS DETECTED A SIGNAL & IS IN THE SAMPLING MODE

TYPICAL TRACE SHOWING THE SIGNAL ARRIVALS DIRECTLY FROM ONE OF THE FILTERED INPUT CHANNELS (UPPER HALF) & THE COMPUTER MODE AS IT SEARCHES FOR & DETECTS THE SIGNAL (BOTTOM HALF)

Figure 2

CS-1 Program Listings

```
                PROGRAM   PARKA
PHASE11AA       SYS-PROC  PARKA*12AUG68
                LOC-DD
                VRBL TYPECELL1*FXW*3
                VRBL TYPECELL2*FXW*3
                VRBL FORMCELL*FXW*3
                TABLECONST*H*1*10
                FIELDATA0*FXWS*0*1*27D
                END-TABLE CONST
                TABLEBANG*V*5*18D
                FIELDICLOCKCYS*FXWS*0*1
                FIELDBSEC*FXWS*1*1
                FIELDBMIN*FXWS*2*1
                FIELDBHOUR*FXWS*3*1
                FIELDBDAY*FXWS*4*1
                END-TABLE BANG
                VRBL BANGTIME*FXW
                VRBL WHY*FXW
                VRBL EXS*FXW
                VRBL DENOM*FXW
                VRBL ELGNA*FXW*27D
                VRBL RANGEIND*FXW
                VRBL NUMDEN*FXW*27D
                VRBL SQNUMDEN*FXW*27D
                VRBL TEMPHOLD*FXW
                VRBL CHANGE*FXW
                VRBL TESTIME*FXW*12D
                VRBL LASHOTME*FXW*12D
                VRBL SERISCNTR*FXW
                VRBL MONTH*FXW
                VRBL DAY*FXW
                VRBL HOUR*FXW
                VRBL MIN*FXW
                VRBL SEC*FXW
                VRBL TRST*FXW
                VRBL LASTIME*FXW
                VRBL ICCYS*FXW
```

```
VRBL ISEC*FXW
VRBL IMINUTE*FXW
VRBL IHOUR*FXW
VRBL IDAY*FXW
VRBL IMONTH*FXW
VRBL CTSNDS*FXW
VRBL RWT4*FXW
VRBL TESTY      *FXW
VRBL ICMSEC     *FXW
VRBL TH1        *FXW
VRBL MTN        *FXW
VRBL SHTCTR     *FXW
VRBL LTAPE      *FXW
VRBL SA         *FXW
VRBL SQ         *FXW
VRBL PAR        *FXW
VRBL LTU2       *FXW
VRBL FORCE      *FXW
VRBL INI        *FXW
VRBL CPHP       *FXW
VRBL SOA        *FXW
VRBL THAT       *FXW
VRBL MSEC       *FXW
VRBL DEPTH      *FXW
VRBL CODEWORD   *FXW
VRBL REPRATE    *FXW
VRBL HMK        *FXW
VRBL RESET      *FXW
VRBL TMP*FXW
VRBL WORDS*FXW
VRBL ITEMS*FXW
VRBL TEMP*FXW
VRBL HYDRO*FXW
VRBL STRE*FXW
VRBL TEMP3*FXW
VRBL RLM*FXW
VRBL RLMTTY*FXW
VRBL HOURCNTR*FXW
VRBL GSLO*FXW
VRBL SSBC*FXW
VRBL MFLAG*FXW
VRBL ETL*FXW
VRBL SSSS*FXW
VRBL GSN*FXW
VRBL GTIMER*FXW
VRBL FTEMP*FXW
VRBL BHOLD*FXW
VRBL CALIN2*FXW
VRBL MIN5FLAG*FXW
VRBL ALPHA*FXW
VRBL SOVEL*FXW
VRBL THCTR1*FXW
VRBL ZETA*FXW
VRBL WAITIME*FXW
VRBL TFLAG*FXW
VRBL BEHOLD*FXW
VRBL RANGE*FXW
END-LOC-DD
```

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```
10641  00000  00000          PROCEDURE PSTATUS
10642  15030  62170          STR  A*W(SA)
10643  14030  62171          STR  Q*W(SQ)
10644  16050  62257          STR  B0*CPL(TFLAG)
10645  67340  00000          TERM MAGGY*OUTPUT
10646  66340  00000          TERM MAGGY*INPUT
10647  17370  62256          STR  MAGGY*W(STATWRD)
10650  10000  00002          ENT  Q*2
10651  11000  00002          ENT  A*2
10652  43530  62256          COM  MASK*W(STATWRD)*ANOT
10653  61000  10671          JP   STLT
10654  07000  00005  STLPE    LSH  AQ*5
10655  43530  62256          COM  MASK*W(STATWRD)*ANOT
10656  61000  10673          JP   STPE
10657  07000  00001  STLAT    LSH  AQ*1
10660  43530  62256          COM  MASK*W(STATWRD)*ANOT
10661  61000  10675          JP   STPE1
10662  07000  00007  STIC     LSH  AQ*7
10663  43530  62256          COM  MASK*W(STATWRD)*ANOT
10664  61000  10677          JP   STTB
10665  11030  62170          ENT  A*W(SA)
10666  10030  62171          ENT  Q*W(SQ)
10667  60000  00000          RIL
10670  61010  10641          RETURN
10671  14030  62166  STLT     STR  Q*W(LTAPE)
10672  61000  10654          JP   STLPE
10673  14030  62167  STPE     STR  Q*W(PAR)
10674  61000  10657          JP   STLAT
10675  14030  62167  STPE1    STR  Q*W(PAR)
10676  61000  10662          JP   STIC
10677  63300  10703  STTB     JP   STTB1*TELO
10700  74330  15020          OUT  TELY*W(MTIC)
10701  13330  14746          EX-COM    TELY*W(FLIP2)*FORCE
10702  13330  14747          EX-COM    TELY*W(FLIP3)*FORCE
10703  11030  62170  STTB1    ENT  A*W(SA)
10704  10030  62171          ENT  Q*W(SQ)
10705  60000  00000          RIL
10706  61000  10670          RETURN
                             END-PROC  STATUS
10707  00000  00000          PROCEDURE TAPESTAT
10710  11530  62166          ENT  A*W(LTAPE)*ANOT
10711  61010  10707          RETURN
10712  16030  62166          STR  B0*W(LTAPE)
10713  16030  62257          STR  B0*W(TFLAG)
10714  13370  14771          EX-COM    MAGGY*W(RS1)*FORCE
10715  11530  62257  JA       ENT  A*W(TFLAG)*ANOT
10716  61000  10715          JP   JA
10717  16030  62257          STR  B0*W(TFLAG)
10720  11530  62166          ENT  A*W(LTAPE)*ANOT
10721  61000  10723          JP   TIS2
10722  61000  10762          JP   RESETT
10723  13370  14772  TIS2     EX-COM    MAGGY*W(RS2)*FORCE
10724  11530  62257  JB       ENT  A*W(TFLAG)*ANOT
10725  61000  10724          JP   JB
10726  16030  62257          STR  B0*W(TFLAG)
10727  11530  62166          ENT  A*W(LTAPE)*ANOT
10730  61000  10732          JP   TIS3
10731  61000  10752          JP   TRW2
```

```
10732  13370  14773  TIS3     EX-COM    MAGGY*W(RS3)*FORCE
10733  11530  62257  JC       ENT   A*W(TFLAG)*ANOT
10734  61000  10733           JP    JC
10735  16030  62257           STR   B0*W(TFLAG)
10736  11530  62166           ENT   A*W(LTAPE)*ANOT
10737  61000  10741           JP    TIS4
10740  61000  10773           JP    RESESS
10741  13370  14774  TIS4     EX-COM    MAGGY*W(RS4)*FORCE
10742  11530  62257  JD       ENT   A*W(TFLAG)*ANOT
10743  61000  10742           JP    JD
10744  16030  62257           STR   B0*W(TFLAG)
10745  11530  62166           ENT   A*W(LTAPE)*ANOT
10746  61000  10711           RETURN
10747  36030  62224           RPL   Y+1*W(RWT4)
10750  16030  62166           STR   B0*W(LTAPE)
10751  61000  10711           RETURN
10752  12100  00001  TRW2     ENT   B1*1
10753  65000  11003           RJP   ENDFILEIT              END OF FILE ON UNIT
10754  13370  14775           EX-COM    MAGGY*W(RWCW2)*FORCE
10755  11530  62257  JE       ENT   A*W(TFLAG)*ANOT
10756  61000  10755           JP    JE
10757  16030  62257           STR   B0*W(TFLAG)
10760  16030  62166           STR   B0*W(LTAPE)
10761  61000  10732           JP    TIS3
10762  36010  62163  RESETT    RPL   Y+1*L(MTN)
10763  12100  00000           ENT   B1*0
10764  65000  11003           RJP   ENDFILEIT              END OF FILE ON UNIT 1
10765  13370  14767           EX-COM    MAGGY*W(RW1)*FORCE
10766  11530  62257  JG       ENT   A*W(TFLAG)*ANOT
10767  61000  10766           JP    JG
10770  16030  62257           STR   B0*W(TFLAG)
10771  16030  62166           STR   B0*W(LTAPE)
10772  61000  10723           JP    TIS2
10773  16010  62163  RESESS    STR   B0*L(MTN)
10774  12100  00002           ENT   B1*2
10775  65000  11003           RJP   ENDFILEIT              END OF FILE ON UNIT 2
10776  13370  14770           EX-COM    MAGGY*W(RW3)*FORCE
10777  11530  62257  JF       ENT   A*W(TFLAG)*ANOT
11000  61000  10777           JP    JF
11001  16030  62166           STR   B0*W(LTAPE)
11002  61000  10741           JP    TIS4
11003  12000  00000  ENDFILEIT NO-OP                      WRITES END OF FILE 0 END OF TAPE
11004  13371  15000           EX-COM    MAGGY*W(WEOF+B1)*FORCE
11005  11530  62257  EDFA     ENT   A*W(TFLAG)*ANOT
11006  61000  11005           JP    EDFA                   WAIT FOR TAPE INTERRUPT
11007  16030  62257           STR   B0*W(TFLAG)
11010  61010  11003           JP    L(ENDFILEIT)
                              END-PROC  TAPESTAT
11011  00000  00000           PROCEDURE MONROE
11012  16110  11051           STR   B1*L(STRB1)
11013  16210  11052           STR   B2*L(STRB2)
11014  16310  11053           STR   B3*L(STRB3)
11015  16610  11054           STR   B6*L(STRB6A)
11016  16710  11055           STR   B7*L(STRB7)
11017  15010  11025           STR   A*L(MAB)               BUFFER ADDRESS IN A
11020  12600  00117           ENT   B6*79D
11021  16036  11057           CL    W(HA+B6)
11022  72600  11021  DDS      BJP   B6*DDS-1
```

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```
11023  12300  00000          ENT   B3*0
11024  12200  00000          ENT   B2*0
11025  11000  00000  MAB     ENT   A*0
11026  20002  00000          ADD   A*B2          BUFFER ADDRESS +B2 I A
11027  12770  00000          ENT   B7*A
11030  10037  00000          ENT   Q*W(B7)       PICK UP BUFFER WORD
11031  12100  00000          ENT   B1*0
11032  11000  00000  MAA     CL    A
11033  07000  00006          LSH   AQ*6
11034  15010  11036          STR   A*L(SPACETEST)
11035  21400  00001          SUB   A*1*AZERO
11036  13000  00000  SPACETEST ENT  A*0
11037  15033  11057          STR   A*W(HA+B3)
11040  12303  00001          ENT   B3*B3+1
11041  71100  00004          BSK   B1*4
11042  61000  11032          JP    MAA
11043  71200  00017          BSK   B2*15D
11044  61000  11025          JP    MAB
11045  74170  11177          OUT   MONRO*W(HBUF)
11046  12100  05670          ENT   B1*3000D
11047  72100  11047  MAC     BJP   B1*MAC
11050  67140  00000          TERM  MONRO*OUTPUT
11051  12100  00000  STRB1   ENT   B1*0
11052  12200  00000  STRB2   ENT   B2*0
11053  12300  00000  STRB3   ENT   B3*0
11054  12600  00000  STRB6A  ENT   B6*0
11055  12700  00000  STRB7   ENT   B7*0
11056  61010  11011          RETURN
                     HA      RESERVE   80D
11177  11176  11057  HBUF    U-TAGHA+79D*HA
                             END-PROC  MONROE
11200  00000  00000          PROCEDURE LFANDCR
11201  10000  00075          PUT   75*W(PTCDE)
11202  14030  11210
11203  74170  11211          OUT   MONRO*W(PTBUF)
11204  12100  05670          ENT   B1*3000D
11205  72100  11205  LALA    BJP   B1*LALA
11206  67140  00000          TERM  MONRO*OUTPUT
11207  61010  11200          RETURN
11210  00000  00000  PTCDE   0
11211  11210  11210  PTBUF   U-TAGPTCDE*PTCDE
                             END-PROC  LFANDCR
11212  00000  00000          PROCEDURE UPITIME
                             COMMENT   UPDATES INTERNAL TIME FROM INTERNAL CLOCK
11213  11030  62213          ENT   A*W(LASTIME)
11214  10030  00160          ENT   Q*W(160)
11215  14030  62213          STR   Q*W(LASTIME)
11216  27070  00000          SUB   Q*A
11217  34030  62214          RPL   Y+Q*W(ICCYS)   ADD LAPSED CYCLES TO COUNT
11220  11030  62214  UPA     ENT   A*W(ICCYS)
11221  21600  02000          SUB   A*1024D*APOS  HAS ONE SECOND ELAPSED
11222  61000  11246          JP    UPB           NO
11223  65000  11247          RJP   SETCYCNT       SET CYCLE COUNT TO CURRENET TIME
11224  15030  62214          STR   A*W(ICCYS)
11225  36030  62215          RPL   Y+1*W(ISEC)   UPDATE SECONDS
11226  21600  00074          SUB   A*60D*APOS    HAS ONE MINUTE ELAPSED
11227  61000  11220          JP    UPA           NO
11230  15030  62215          STR   A*W(ISEC)
```

```
11231  36030  62215            RPL  Y+1*W(IMINUTE)          UPDATE MINUTES
11232  21600  00074            SUB  A*60D*APOS             HAS ONE HOUR ELAPSED
11233  61000  11220            JP   UPA                    NO
11234  15030  62216            STR  A*W(IMINUTE)
11235  36030  62217            RPL  Y+1*W(IHOUR)           UPDATE HOURS
11236  21600  00030            SUB  A*24D*APOS             HAS ONE DAY ELAPSED
11237  61000  11220            JP   UPA                    NO
11240  15030  62217            STR  A*W(IHOUR)
11241  36030  62220            RPL  Y+1*W(IDAY)            UPDATE DAYS
11242  21600  00037            SUB  A*31D*APOS             HAS AUGUST TURNED TO SEPTEMBER
11243  61000  11220            JP   UPA                    NO
11244  36030  62221            RPL  Y+1*W(IMONTH)
11245  61000  11220            JP   UPA
11246  61010  11212  UPB       RETURN
11247  12000  00000  SETCYCNT  NO-OP
11250  15030  11262            STR  A*W(KEEPA)
11251  36030  62173            RPL  Y+1*W(CTSNDS)
11252  21730  11261            SUB  A*W(CYCLENGTH)*ANEG    TEST FOR END OF SHOT CYCLE
11253  61000  11256            JP   SCA                    CYCLE HAS ENDED
11254  11030  11262  SCB       ENT  A*W(KEEPA)
11255  61010  11247            JP   L(SETCYCNT)
11256  16050  62175  SCA       STR  B0*CPL(CPHP)           SET NEW CYCLE FLAG
11257  16030  62173            STR  B0*W(CTSNDS)
11260  61000  11254            JP   SCB
11261  00000  00036  CYCLENGTH 30D
11262  00000  00000  KEEPA     0
                               END-PROC  UPITIME
11263  00000  00000            PROCEDURE TIMESYNC
                               COMMENT   SYNCS INTERNAL TIME TO EXTERNAL CLOCK
11264  73070  11410            IN   EXCLOK*W(TRSTBC)
11265  62040  11265  TSA       JP   TSA*EXPI
11266  10000  00177            ENT  Q*177                  SECONDS MASK
11267  40030  62165            ENT  LP*W(TRST)
11270  15030  11411            STR  A*W(COMCELL)
11271  73070  11410  TSC       IN   EXCLOK*W(TRSTBC)
11272  62040  11272  TSB       JP   TSB*EXPI
11273  40030  62165            ENT  LP*W(TRST)
11274  21530  11411            SUB  A*W(COMCELL)*ANOT      TEST FOR SECONDS CHANGE
11275  61000  11271            JP   TSC                    LOOP UNTIL SECONDS C ANGE
11276  10000  00017            ENT  Q*17
11277  40030  62165            ENT  LP*W(TRST)
11300  15030  62206            STR  A*W(SEC)
11301  10000  00160            ENT  Q*160
11302  40030  62165            ENT  LP*W(TRST)
11303  03000  00042            RSH  AQ*34D
11304  22000  00012            MUL  10D
11305  34030  62206            RPL  Y+Q*W(SEC)
11306  10000  03600            ENT  Q*3600
11307  40030  62165            ENT  LP*W(TRST)
11310  02000  00007            RSH  A*7
11311  15030  62205            STR  A*W(MIN)
11312  10000  34000            ENT  Q*34000
11313  40030  62165            ENT  LP*W(TRST)
11314  03000  00051            RSH  AQ*41D
11315  22000  00012            MUL  10D
11316  34030  62205            RPL  Y+Q*W(MIN)
11317  10030  63401            ENT  Q*740000
11320  40030  62165            ENT  LP*W(TRST)
```

```
11321  02000  00016            RSH   A*14D
11322  15030  62204            STR   A*W(HOUR)
11323  10030  63402            ENT   Q*3000000
11324  40030  62165            ENT   LP*W(TRST)
11325  03000  00060            RSH   AQ*48D
11326  22000  00012            MUL   10D
11327  34030  62204            RPL   Y+Q*W(HOUR)
11330  10030  63403            ENT   Q*74000000
11331  40030  62165            ENT   LP*W(TRST)
11332  03000  00062            RSH   AQ*50D
11333  14030  62203            STR   Q*W(DAY)
11334  10030  63404            ENT   Q*1700000000
11335  40030  62165            ENT   LP*W(TRST)
11336  03000  00066            RSH   AQ*54D
11337  22000  00012            MUL   10D
11340  34030  62203            RPL   Y+Q*W(DAY)
11341  10030  63405            ENT   Q*6000000000
11342  40030  62165            ENT   LP*W(TRST)
11343  07000  00002            LSH   AQ*2
11344  22000  00144            MUL   100D
11345  34030  62203            RPL   Y+Q*W(DAY)
11346  11000  00423            IF    DAY*GTEQ*275D*THEN*SET*MONTH*TO*10D*AND*DAY*TO*DAY-274D*THEN.
11347  21030  62203
11350  01400  00000
11351  60600  11357
11352  10000  00012
11353  14030  62202
11354  10000  00422
11355  35030  62203
11356  61000  11374
11357  11000  00365            IF    DAY*GTEQ*245D*THEN*SET*MONTH*TO*9D*AND*DAY*TO*DAY-244D*THEN*
11360  21030  62203
11361  01400  00000
11362  60600  11370
11363  10000  00011
11364  14030  62202
11365  10000  00364
11366  35030  62203
11367  61000  11374
11370  10000  00010            SET   MONTH*TO*8D*AND*DAY*TO*DAY-213D
11371  14030  62202
11372  10000  00325
11373  35030  62203
11374  16030  62214  ZXCV      STR   B0*W(ICCYS)
11375  10030  62202            SET   IMONTH*TO*MONTH          SET INTERNAL TIMES TO EX CLOCK
11376  14030  62221
11377  10030  62203            SET   IDAY*TO*DAY
11400  14030  62220
11401  10030  62204            SET   IHOUR*TO*HOUR
11402  14030  62217
11403  10030  62205            SET   IMINUTE*TO*MIN
11404  14030  62216
11405  10030  62206            SET   ISEC*TO*SEC
11406  14030  62215
11407  61010  11263            RETURN
11410  62165  62165  TRSTBC    U-TAGTRST*TRST
11411  00000  00000  COMCELL   0
                              END-PROC  TIMESYNC
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```
11412  00000  00000            PROCEDURE CONLOGIT
11413  14640  00000            STR   Q*A*APOS
11414  14000  00000            CP    Q
11415  60400  11443            JP    CL4*AZERO
11416  12700  00001            ENT   B7*1
11417  05000  00001  CL2       LSH   Q*1
11420  60300  11424            JP    CL3*GNEG
11421  71700  00015            BSK   B7*13D
11422  61000  11417            JP    CL2
11423  61000  11426            JP    CL5
11424  12707  77762  CL3       ENT   B7*B7-13D
11425  16750  00167            STR   B7*CPL(167)
11426  10047  77760  CL5       ENT   Q*X(B7-15D)
11427  14000  00000            CP    Q
11430  02007  00000            RSH   A*B7
11431  65000  11445  CL1       RJP   NATLOG
11432  10000  00000            CL    Q
11433  03000  00036            RSH   AQ*30D
11434  22030  63406            MUL   33626754
11435  03000  00044            RSH   AQ*36D
11436  22000  00012            MUL   12
11437  26200  00400            ADD   Q*400*APOS
11440  27000  01000            SUB   Q*1000
11441  01000  00011            RSH   Q*9D
11442  61010  11412            RETURN
11443  10040  77157  CL4       ENT   Q*X77157
11444  61010  11412            JP    L(CONLOGIT)
11445  61000  00000  NATLOG     JP    0
11446  14070  11543            STR   Q*CPW(KITTY)
11447  10000  00000            CL    Q
11450  11670  00000            ENT   A*A*APOS
11451  51040  77777            CP    A
11452  70000  00035            RPT   29D
11453  06700  00001            LSH   A*1*ANEG
11454  61000  11522            JP    NAT2
11455  16710  11460            STR   B7*L(NAT1)
11456  06000  00030            LSH   A*24D
11457  15030  11545            STR   A*W(KITTY+2)
11460  10040  00000  NAT1      ENT   Q*X(0)
11461  26030  11543            ADD   Q*W(KITTY)
11462  05000  00003            LSH   Q*3
11463  26000  00004            ADD   Q*4
11464  11000  00000            CL    A
11465  22030  11533            MUL   W(POOL)
11466  03000  00011            RSH   AQ*9D
11467  11470  00000            ENT   A*A*AZERO
11470  61000  11530            JP    NAT4
11471  14030  11544  NAT5      STR   Q*W(KITTY+1)
11472  10030  11545            ENT   Q*W(KITTY+2)
11473  30030  11535            ENT   Y+Q*W(POOL3)
11474  15030  11546            STR   A*W(KITTY+3)
11475  30030  11537            ENT   Y+Q*W(POOL2)
11476  15030  11547            STR   A*W(KITTY+4)
11477  30030  11541            ENT   Y+Q*W(POOL1)
11500  15030  11550            STR   A*W(KITTY+5)
11501  10030  11536            ENT   Q*W(POOL3+1)
11502  11040  77777            ENT   A*X77777
11503  07000  00027            LSH   AQ*23D
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11504  23030  11546          DIV   W(KITTY+3)
11505  34030  11547          RPL   Y+Q*W(KITTY+4)
11506  10030  11540          ENT   Q*W(POOL2+1)
11507  11040  77777          ENT   A*X77777
11510  07000  00027          LSH   AQ*23D
11511  23030  11547          DIV   W(KITTY+4)
11512  34030  11550          RPL   Y+Q*W(KITTY+5)
11513  10030  11542          ENT   Q*W(POOL1+1)
11514  11040  77777          ENT   A*X77777
11515  07000  00027          LSH   AQ*23D
11516  23030  11550          DIV   W(KITTY+5)
11517  26030  11544          ADD   Q*W(KITTY+1)
11520  30030  11534          ENT   Y+Q*W(POOL+1)
11521  61000  11524          JP    NAT3
11522  10040  77157  NAT2    ENT   Q*X77157
11523  61010  11412          JP    L(CONLOGIT)
11524  15000  00000  NAT3    STR   A*Q
11525  36010  11445          RPL   Y+1*L(NATLOG)
11526  07000  00037          LSH   AQ*31D
11527  61010  11445          JP    L(NATLOG)
11530  51440  77777  NAT4    SEL   CP*X77777*AZERO
11531  61010  11445          JP    L(NATLOG)
11532  61000  11471          JP    NAT5
11533  26134  41377  POOL    2613441377
11534  01656  40206          0165640206
11535  00154  63077  POOL3   0015463077
11536  77673  61257          7767361257
11537  01015  07044  POOL2   0101507044
11540  73737  47270          7373747270
11541  05141  14431  POOL1   0514114431
11542  56626  67151          5662667151
                     KITTY   RESERVE   6
                             END-PROC  CONLOGIT
11551  00000  00000  CVT     PROCEDURE CONVOLT
11552  14030  62231          STR   Q*W(TMP)
11553  10250  62231          ENT   Q*LX(TMP)*QPOS
11554  14000  00000          CP    Q
11555  22000  00024          MUL   24
11556  05000  00003          LSH   Q*3
11557  11630  62231          ENT   A*W(TMP)*APOS
11560  14000  00000          CP    Q
11561  11000  00000          CL    A
11562  61010  11551          RETURN
                             END-PROC  CONVOLT
11563  00000  00000  PK      PROCEDURE PKSQIN
11564  12100  00000          ENT   B1*0
11565  12200  00000          ENT   B2*0
11566  12300  00000          ENT   B3*0
11567  11040  74000  START1  ENT   A*X74000
11570  10002  00000          ENT   Q*B2
11571  26001  00000          ADD   Q*B1
11572  14030  00164          STR   Q*W(00164)
11573  10064  15024          ENT   Q*UX(LEV+B4)
11574  04370  00000          COM   Q*A*YMORE
11575  14040  00000          STR   Q*A
11576  10054  15024          ENT   Q*LX(LEV+B4)
11577  04370  00000          COM   Q*A*YMORE
11600  14040  00000          STR   Q*A
```

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11601  12202  00011          ENT  B2*11+B2
11602  71130  62232          BSK  B1*W(WORDS)
11603  61000  11570          JP   START1+1
11604  15033  61606          STR  A*W(PEAK+B3)
11605  12203  00001          ENT  B2*B3+1
11606  71330  62233          BSK  B3*W(ITEMS)
11607  61000  11567          JP   START1
11610  12100  00000          ENT  B1*0
11611  12200  00000          ENT  B2*0
11612  12300  00000          ENT  B3*0
11613  10000  00000  START2   PUT  0*W(TEMP)
11614  14030  62234
11615  16030  00000          STR  B0*W(TEMPT)
11616  10002  00000          ENT  Q*B2
11617  26001  00000          ADD  Q*B1
11620  14030  00164          STR  Q*W(00164)
11621  10064  15024          ENT  Q*UX(LEV+B4)
11622  22064  15024          MUL  UX(LEV+B4)
11623  65000  11700          RJP  TILT
11624  10054  15024          ENT  Q*LX(LEV+B4)
11625  22054  15024          MUL  LX(LEV+B4)
11626  65000  11700          RJP  TILT
11627  12202  00011          ENT  B2*11+B2
11630  71130  62232          BSK  B1*W(WORDS)
11631  61000  11615          JP   START2+2
11632  10030  00000          ENT  Q*W(TEMPT)
11633  01000  00011          RSH  Q*9D
11634  34030  62234          RPL  Y+Q*W(TEMP)
11635  10030  62234          ENT  Q*W(TEMP)
11636  22000  00020          MUL  020
11637  03000  00014          RSH  AQ*12D
11640  14030  62234          STR  Q*W(TEMP)
11641  10030  62234          PUT  Y(TEMP),*W(SQIN+B3)
11642  14033  62060
11643  12203  00001          ENT  B2*B3+1
11644  71330  62233          BSK  B3*W(ITEMS)
11645  61000  11613          JP   START2
11646  12100  00000          ENT  B1*0
11647  10030  00161  CONVERT  ENT  Q*W(00161)
11650  14030  00162          STR  Q*W(00162)
11651  10032  62046          ENT  Q*W(ATTEN+B2)
11652  27000  00001          SUB  Q*1
11653  22000  00240          MUL  240
11654  14031  62072          STR  Q*W(CATT+B1)
11655  71130  62233          BSK  B1*W(ITEMS)
11656  61000  11647          JP   CONVERT
11657  10031  61606  PEAK1    ENT  Q*W(PEAK+B1)
11660  65000  11551          CONVOLT
11661  65000  11412          CONVOGIT
11662  22000  00002          MUL  2
11663  26031  62076          ADD  Q*W(CATT+B1)
11664  27031  62634          SUB  Q*W(CALPK+B1)
11665  14031  61606          STR  Q*W(PEAK+B1)
11666  71130  62233          BSK  B1*W(ITEMS)
11667  61000  11657          JP   PEAK1
11670  10031  62060  SQ7N1    ENT  Q*W(SQIN+B1)
11671  65000  11412          CONVOGIT
11672  26031  62072          ADD  Q*W(CATT+B1)
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11673  27031  61620          SUB   Q*W(CALIN+B1)
11674  14031  62060          STR   Q*W(SQIN+B1)
11675  71130  62233          BSK   B1*W(ITEMS)
11676  61000  11670          JP    SQIN1
11677  61010  11563          RETURN
                             END-PROC  PKSQIN
11700  12000  00000  TILT    NO-OP
11701  22000  00620          MUL   620
11702  07000  00025          LSH   AQ*21D
11703  24030  62234          RPL   A+Y*W(TEMP)
11704  05000  00011          LSH   Q*9D
11705  34020  00000          RPL   Y+Q*W(TEMPT)
11706  61010  11700          JP    L(TILT)
11707  00000  00000          PROCEDURE SNCORRECT
11710  14030  62234          STR   Q*W(TEMP)
11711  12100  00000          ENT   B1*0
11712  10030  62234          ENT   Q*W(TEMP)
11713  27670  00000          SUB   Q*A*GPOS
11714  14000  00000          CP    Q
11715  31521  11731  TABL    ENT   Y-Q*U(SNCK+B1)*ANOT
11716  61000  11724          JP    FIND1
11717  71100  00167          BSK   B1*119D
11720  61000  11715          JP    TABL
11721  10030  62234          ENT   Q*W(TEMP)
11722  11000  00000          CL    A
11723  61010  11707          RETURN
11724  11011  11731  FIND1   ENT   A*L(SNCK+B1)
11725  10030  62234          ENT   Q*W(TEMP)
11726  27070  00000          SUB   Q*A
11727  11000  00000          CL    A
11730  61000  11723          RETURN
11731  00140  00000  SNCK    0014000000
11732  00137  00000          0013700000
11733  00136  00000          0013600000
11734  00135  00001          0013500001
11735  00134  00001          0013400001
11736  00134  00001          0013400001
11737  00133  00001          0013300001
11740  00132  00001          0013200001
11741  00131  00001          0013100001
11742  00130  00001          0013000001
11743  00130  00002          0013000002
11744  00127  00002          0012700002
11745  00126  00002          0012600002
11746  00125  00002          0012500002
11747  00124  00002          0012400002
11750  00124  00002          124  2
11751  00123  00003          123  3
11752  00122  00003          122  3
11753  00121  00003          121  3
11754  00120  00003          120  3
11755  00120  00003          120  3
11756  00117  00003          117  3
11757  00116  00004          116  4
11760  00115  00004          115  4
11761  00114  00004          114  4
11762  00114  00004          114  4
11763  00113  00004          113  4
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11764	00112	00004	112	4
11765	00111	00004	111	4
11766	00110	00004	110	4
11767	00110	00004	110	4
11770	00107	00005	107	5
11771	00106	00005	106	5
11772	00105	00005	105	5
11773	00104	00005	104	5
11774	00104	00005	104	5
11775	00103	00006	103	6
11776	00102	00006	102	6
11777	00101	00006	101	6
12000	00100	00006	100	6
12001	00100	00007	100	7
12002	00077	00007	77	7
12003	00076	00007	76	7
12004	00075	00007	75	7
12005	00074	00010	74	10
12006	00074	00010	74	10
12007	00073	00010	73	10
12010	00072	00010	72	10
12011	00071	00010	71	10
12012	00070	00010	70	10
12013	00070	00010	70	10
12014	00067	00011	67	11
12015	00066	00011	66	11
12016	00065	00011	65	11
12017	00064	00012	64	12
12020	00064	00012	64	12
12021	00063	00012	63	12
12022	00062	00013	62	13
12023	00061	00013	61	13
12024	00060	00013	60	13
12025	00060	00014	60	14
12026	00057	00014	57	14
12027	00056	00014	56	14
12030	00055	00014	55	14
12031	00054	00014	54	14
12032	00054	00014	54	14
12033	00053	00015	53	15
12034	00052	00015	52	15
12035	00051	00016	51	16
12036	00050	00016	50	16
12037	00050	00016	50	16
12040	00047	00017	47	17
12041	00046	00017	46	17
12042	00045	00020	45	20
12043	00044	00020	44	20
12044	00044	00020	44	20
12045	00043	00020	43	20
12046	00042	00020	42	20
12047	00041	00021	41	21
12050	00040	00021	40	21
12051	00040	00022	40	22
12052	00037	00022	37	22
12053	00036	00023	36	23
12054	00035	00023	35	23
12055	00034	00024	34	24

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12056  00034  00024                34   24
12057  00033  00024                33   24
12060  00032  00025                32   25
12061  00031  00026                31   26
12062  00030  00027                30   27
12063  00030  00030                30   30
12064  00027  00030                27   30
12065  00026  00030                26   30
12066  00025  00031                25   31
12067  00024  00032                24   32
12070  00024  00033                24   33
12071  00023  00034                23   34
12072  00022  00034                22   34
12073  00021  00036                21   36
12074  00020  00037                20   37
12075  00020  00040                20   40
12076  00017  00041                17   41
12077  00016  00042                16   42
12100  00015  00044                15   44
12101  00014  00045                14   45
12102  00014  00047                14   47
12103  00013  00051                13   51
12104  00012  00054                12   54
12105  00011  00056                11   56
12106  00010  00061                10   61
12107  00010  00064                10   64
12110  00007  00070                 7   70
12111  00006  00074                 6   74
12112  00005  00102                 5   102
12113  00004  00110                 4   110
12114  00004  00117                 4   117
12115  00003  00120                 3   120
12116  00002  00120                 2   120
12117  00001  00120                 1   120
12120  00000  00120                 0   120
                                   END-PROC  SNCORRECT
12121  00000  00000                PROCEDURE SNRATIO
12122  12100  00000                ENT  B1*0
12123  10030  00161  AGAIN         ENT  Q*W(00161)
12124  14030  00162                STR  Q*W(00162)
12125  10032  62034                ENT  Q*W(NATT+B2)
12126  27000  00001                SUB  Q*1
12127  22000  00240                MUL  240
12130  14031  62022                STR  Q*W(NAT+B1)
12131  71130  62233                BSK  B1*W(ITEMS)
12132  61000  12123                JP   AGAIN
12133  10031  62104  PROCS         ENT  Q*W(GSXI+B1)
12134  22000  00020                MUL  20
12135  03000  00006                RSH  AQ*6
12136  16130  62235                STR  B1*W(STRE)
12137  65000  11412                CONLOGIT
12140  12130  62235                ENT  B1*W(STRE)
12141  26031  62022  GCJ           ADD  Q*W(NAT+B1)
12142  27031  61620                SUB  Q*W(CALIN2+B1)
12143  14031  61574                STR  Q*W(NOS+B1)
12144  14030  62236                STR  Q*W(TEMP3)
12145  14040  00000                STR  Q*A
12146  10031  62060                ENT  Q*W(SQIN+B1)
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12147  16130  62235          STR  B1*W(STRE)
12150  65000  11707          SNCORRECT
12151  12130  62235          ENT  B1*W(STRE)
12152  14031  61536          STR  Q*W(SIG+B1)
12153  27030  62236          SUB  Q*W(TEMP3)
12154  14031  61562  SNGT    STR  Q*W(SNTAB+B1)
12155  71130  62233          BSK  B1*W(ITEMS)
12156  61000  12133          JP   PROCS
12157  61010  12121          RETURN
                             END-PROC  SNRATIO
12160  00000  00000          PROCEDURE PROPLOSS
12161  12200  00000          ENT  B2*0
12162  12100  00000          ENT  B1*0
12163  11030  62210          ENT  A*W(CODEWORD)
12164  21500  00001          SUB  A*1*ANOT
12165  61000  12201          JP   PROP1
12166  21500  00001          SUB  A*1*ANOT
12167  61000  12211          JP   PROP2
12170  21500  00001          SUB  A*1*ANOT
12171  61000  12221          JP   PROP3
12172  21500  00001          SUB  A*1*ANOT
12173  61000  12231          JP   PROP4
12174  21500  00001          SUB  A*1*ANOT
12175  61000  12241          JP   PROP5
12176  21500  00001          SUB  A*1*ANOT
12177  61000  12251          JP   PROP6
12200  61000  12261          JP   PROP7
12201  10032  61714  PROP1   ENT  Q*W(AGSL+B2)
12202  27031  61536          SUB  Q*W(SIG+B1)
12203  14031  61550          STR  Q*W(PROPL+B1)
12204  71200  00011          BSK  B2*11
12205  12000  00000          NO-OP
12206  71130  62233          BSK  B1*W(ITEMS)
12207  61000  12201          JP   PROP1
12210  61010  12160          RETURN
12211  10032  61726  PROP2   ENT  Q*W(SL176+B2)
12212  27031  61536          SUB  Q*W(SIG+B1)
12213  14031  61550          STR  Q*W(PROPL+B1)
12214  71200  00011          BSK  B2*11
12215  12000  00000          NO-OP
12216  71130  62233          BSK  B1*W(ITEMS)
12217  61000  12211          JP   PROP2
12220  61000  12210          RETURN
12221  10032  61740  PROP3   ENT  Q*W(SLE1+B2)
12222  27031  61536          SUB  Q*W(SIG+B1)
12223  14031  61550          STR  Q*W(PROPL+B1)
12224  71200  00011          BSK  B2*11
12225  12000  00000          NO-OP
12226  71130  62233          BSK  B1*W(ITEMS)
12227  61000  12221          JP   PROP3
12230  61000  12210          RETURN
12231  10032  61752  PROP4   ENT  Q*W(SLE2+B2)
12232  27031  61536          SUB  Q*W(SIG+B1)
12233  14031  61550          STR  Q*W(PROPL+B1)
12234  71200  00011          BSK  B2*11
12235  12000  00000          NO-OP
12236  71130  62233          BSK  B1*W(ITEMS)
12237  61000  12231          JP   PROP4
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12240  61000  12210          RETURN
12241  10032  61764  PROP5   ENT   Q*W(SLE3+B2)
12242  27031  61536          SUB   Q*W(SIG+B1)
12243  14031  61550          STR   Q*W(PROPL+B1)
12244  71200  00011          BSK   B2*11
12245  12000  00000          NO-OP
12246  71130  62233          BSK   B1*W(ITEMS)
12247  61000  12241          JP    PROP5
12250  61000  12210          RETURN
12251  10032  61776  PROP6   ENT   Q*W(SLE4+B2)
12252  27031  61536          SUB   Q*W(SIG+B1)
12253  14031  61550          STR   Q*W(PROPL+B1)
12254  71200  00011          BSK   B2*11
12255  12000  00000          NO-OP
12256  71130  62233          BSK   B1*W(ITEMS)
12257  61000  12251          JP    PROP6
12260  61000  12210          RETURN
12261  10032  62010  PROP7   ENT   Q*W(SLE5+B2)
12262  27031  61536          SUB   Q*W(SIG+B1)
12263  14031  61550          STR   Q*W(PROPL+B1)
12264  71200  00011          BSK   B2*11
12265  12000  00000          NO-OP
12266  71130  62233          BSK   B1*W(ITEMS)
12267  61000  12261          JP    PROP7
12270  61000  12210          RETURN
                             END-PROC  PROPLOSS
12271  00000  00000          PROCEDURE PHASE1M
12272  65000  11563          PKSQIN
12273  65000  12121          SNRATIO
12274  65000  12160          PROPLOSS
12275  61010  12271          RETURN
                             END-PROC  PHASE1M
12276  00000  00000          PROCEDURE TVLTMRANGE
12277  10010  61651          ENT   Q*L(ID+5)
12300  14030  62251          STR   Q*W(ZETA)
12301  10020  61651          ENT   Q*U(ID+5)              SECONDS
12302  22000  01750          MUL   1000D
12303  34030  62251          RPL   Y+Q*W(ZETA)
12304  10010  61650          ENT   Q*L(ID+4)              MINUTES
12305  22030  63407          MUL   60000D
12306  34030  62251          RPL   Y+Q*W(ZETA)            ZETA IS RECEIVED TIME IN MILLISECON
12307  10030  62250          SET   ZETA*T0*ZETA-ALPHA
12310  35030  62251
12311  11030  62251  TTE     IF    ZETA*LT*0*THEN*SET*ZETA*T0*ZETA+3600000D*THEN*GOTO*TTE
12312  60600  12316
12313  11030  63410
12314  24030  62251
12315  61000  12311
12316  11030  62251          SET   RANGE*T0*ZETA+5/10D
12317  20000  00005
12320  03000  00036
12321  23000  00012
12322  14030  61535
12323  22030  15004          SET   RANGE*T0*(RANGE)(SDVEL)+500D/1000D
12324  30000  00764
12325  03000  00036
12326  23000  01750
12327  14030  61535
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12330  61010  12276          RETURN
                             END-PROC  TVLTMRANGE
12331  00000  00000          PROCEDURE GIN
12332  73270  14744          IN    SAMPLE*W(ADBF)
12333  13260  12661          EX-COM    SAMPLE*W(GADEF1)
12334  70000  00006          RPT  6
12335  12000  00000          NO-OP
12336  73270  12660          IN    SAMPLE*W(GBUFIN)
12337  13260  12662          EX-COM    SAMPLE*W(GADEF2)
12340  61010  12331          RETURN
                             END-PROC  GIN
12341  00000  00000          PROCEDURE GNOISE*INPUT*MTN
12342  12100  00000          ENT  B1*0
12343  12200  00000          ENT  B2*0
12344  16031  62104  GCLR    STR  B0*W(GSXI+B1)
12345  71100  00011          BSK  B1*9D
12346  61000  12344          JP   GCLR
12347  10030  12665          PUT  W(GMTEF3)*W(GMTEF2)
12350  14030  12664
12351  10030  12667          PUT  W(GMTEF5)*W(GMTEF4)
12352  14030  12666
12353  10030  12671          PUT  W(GMTEF7)*W(GMTEF6)
12354  14030  12670
12355  10030  12673          PUT  W(GMTEF9)*W(GMTEF8)
12356  14030  12672
12357  10000  07246          PUT  3750D*W(GSN)
12360  14030  62237
12361  10000  00002          ENT  Q*2
12362  22010  62163          MUL  L(MTN)
12363  26000  00001          ADD  Q*1
12364  34030  12664          RPL  Y+Q*W(GMTEF2)
12365  34030  12666          RPL  Y+Q*W(GMTEF4)
12366  34030  12670          RPL  Y+Q*W(GMTEF6)
12367  34030  12672          RPL  Y+Q*W(GMTEF8)
12370  11530  62212          ENT  A*W(RESET)*ANOT
12371  61000  12407          JP   GTEDDI
12372  16030  62212          STR  B0*W(RESET)
12373  16030  62257          STR  B0*W(TFLAG)
12374  13370  12670          EX-COM    MAGGY*W(GMTEF6)*FORCE
12375  11530  62257  GMIN    ENT  A*W(TFLAG)*ANOT
12376  61000  12375          JP   GMIN
12377  16030  62257          STR  B0*W(TFLAG)
12400  13370  12670          EX-COM    MAGGY*W(GMTEF6)*FORCE
12401  11530  62257  GCHRIS  ENT  A*W(TFLAG)*ANOT
12402  61000  12401          JP   GCHRIS
12403  16030  62257          STR  B0*W(TFLAG)
12404  13370  12672          EX-COM    MAGGY*W(GMTEF8)*FORCE
12405  11530  62257  GLEA    ENT  A*W(TFLAG)*ANOT
12406  61000  12405          JP   GLEA
12407  16030  12675  GTEDDI  STR  B0*W(GBAG)
12410  16030  12676          STR  B0*W(GAS)
12411  65000  12631          RJP  NATTAB
12412  10030  62163          PUT  W(MTN)*W(GID)
12413  14030  62143
12414  16020  62144          STR  B0*U(GID+1)
12415  16010  62144          STR  B0*L(GID+1)
12416  10010  62221          PUT  L(IMONTH)*U(GID+2)
12417  14020  62145
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12420  10010  62220          PUT   L(IDAY)*L(GID+2)
12421  14010  62145
12422  10010  62217          PUT   L(IHOUR)*U(GID+3)
12423  14020  62146
12424  10010  62216          PUT   L(IMINUTE)*L(GID+3)
12425  14010  62146
12426  10010  62215          PUT   L(ISEC)*U(GID+4)
12427  14020  62147
12430  12000  00000          NO-OP
12431  74370  12674          OUT   MAGGY*W(GBUFID)*FORCE
12432  13370  12664          EX-COM     MAGGY*W(GMTEF2)*FORCE
12433  12100  00000  GAGN     ENT   B1*0
12434  12200  00000          ENT   B2*0
12435  12300  00000          ENT   B3*0
12436  12400  00000          ENT   B4*0
12437  12500  00000          ENT   B5*0
12440  12600  00000          ENT   B6*0
12441  12700  00000          ENT   B7*0
12442  10030  00160          ENT   Q*W(CLOCK)
12443  26000  00004          ADD   Q*4
12444  14030  62240          STR   Q*W(GTIMER)
12445  11030  00160  GALPHA   ENT   A*W(160)
12446  21630  62240          SUB   A*W(GTIMER)*APOS
12447  61000  12445          JP    GALPHA
12450  11000  00004          ENT   A*4
12451  24030  62240          RPL   A+Y*W(GTIMER)
12452  65000  12331          GIN
12453  71700  00004  GH0      BSK   B7*4
12454  61000  12453          JP    GH0
12455  11410  12675          ENT   A*L(GBAG)*AZERO
12456  61000  12471          JP    GPACL
12457  10056  62131  GPACU    ENT   Q*LX(GTHRESH+B6)
12460  14021  15024          STR   Q*U(GHIGH+B1)
12461  22056  62131          MUL   LX(GTHRESH+B6)
12462  34036  62104          RPL   Y+Q*W(GSXI+B6)
12463  12101  00001  GCON1    ENT   B1*B1+1
12464  71600  00002          BSK   B6*2
12465  61000  12457          JP    GPACU
12466  16050  12675          STR   B0*CPL(GBAG)
12467  12101  77774          ENT   B1*B1-3
12470  61000  12501          JP    GQ
12471  10056  62131  GPACL    ENT   Q*LX(GTHRESH+B6)
12472  14011  15024          STR   Q*L(GHIGH+B1)
12473  22056  62131          MUL   LX(GTHRESH+B6)
12474  34036  62104          RPL   Y+Q*W(GSXI+B6)
12475  12101  00001  GCON2    ENT   B1*B1+1
12476  71600  00002          BSK   B6*2
12477  61000  12471          JP    GPACL
12500  16010  12675          STR   B0*L(GBAG)
12501  71300  02335  GQ       BSK   B3*1245D
12502  11400  00000          ENT   A*0*AZERO
12503  61000  12511          JP    GOUTHI
12504  71100  03523  GQQ      BSK   B1*1875D
12505  72100  12506          BJP   B1*GWEST
12506  71500  00030  GWEST    BSK   B5*24D
12507  12000  00000          NO-OP
12510  61000  12514          JP    GSLOPAC
12511  74370  12656  GOUTHI   OUT   MAGGY*W(GBUFHI)*FORCE
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12512  13370  12664                EX-COM    MAGGY*W(GMTEF2)*FORCE
12513  61000  12504                JP   GQQ
12514  12600  00003   GSL0PAC      ENT  B6*3
12515  11410  12676                ENT  A*L(GAS)*AZERO
12516  61000  12531                JP   GSL0L0
12517  10056  62131   GSL0UP       ENT  Q*LX(GTHRESH+B6)
12520  14022  20547                STR  Q*U(GSL0+B2)
12521  22056  62131                MUL  LX(GTHRESH+B6)
12522  34036  62104                RPL  Y+Q*W(GSXI+B6)
12523  12202  00001                ENT  B2*B2+1
12524  71600  00011                BSK  B6*9D
12525  61000  12517                JP   GSL0UP
12526  16050  12676                STR  B0*CPL(GAS)
12527  12202  77770                ENT  B2*B2-7
12530  61000  12541                JP   GFULL
12531  10056  62131   GSL0L0       ENT  Q*LX(GTHRESH+B6)
12532  14012  20547                STR  Q*L(GSL0+B2)
12533  22056  62131                MUL  LX(GTHRESH+B6)
12534  34036  62104                RPL  Y+Q*W(GSXI+B6)
12535  12202  00001                ENT  B2*B2+1
12536  71600  00011                BSK  B6*9D
12537  61000  12531                JP   GSL0L0
12540  16010  12676                STR  B0*L(GAS)
12541  71400  07245   GFULL        BSK  B4*3749D
12542  61000  12445                JP   GALPHA
12543  63340  12543   GPING        JP   GPING*MAG00
12544  12000  00000   GSAM         NO-OP
12545  71400  23420                BSK  B4*10000D
12546  61000  12544                JP   GSAM
12547  74370  12657                OUT  MAGGY*W(GBUFSL0)*FORCE
12550  13370  12664                EX-COM    MAGGY*W(GMTEF2)*FORCE
12551  11520  62163                ENT  A*U(MTN)*ANOT
12552  61000  12573                JP   GDIVN
12553  16060  12676                STR  B0*CPU(GAS)
12554  16020  62163                STR  B0*U(MTN)
12555  10000  16514                PUT  7500D*W(GSN)
12556  14030  62237
12557  61000  12433                JP   GAGN
12560  10034  62104   GCONVOLT     ENT  Q*W(GSXI+B4)
12561  22030  63411                MUL  62000000
12562  15034  62104                STR  A*W(GSXI+B4)
12563  71400  00011                BSK  B4*9D
12564  61000  12560                JP   GCONVOLT
12565  10034  62116   GCONVOLT1    ENT  Q*W(GSXIN+B4)
12566  22030  63411                MUL  62000000
12567  15034  62116                STR  A*W(GSXIN+B4)
12570  71400  00011                BSK  B4*9D
12571  61000  12565                JP   GCONVOLT1
12572  61000  12623                JP   GPONG
12573  10034  62104   GDIVN        ENT  Q*W(GSXI+B4)
12574  11000  00000                CL   A
12575  23030  62237                DIV  W(GSN)
12576  14034  62116                STR  Q*W(GSXIN+B4)
12577  71400  00002                BSK  B4*2
12600  61000  12573                JP   GDIVN
12601  12400  00003                ENT  B4*3
12602  11000  00000   GDIVNSL0     CL   A
12603  10034  62104                ENT  Q*W(GSXI+B
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12604  23030  62237                DIV   W(GSN)
12605  14034  62116                STR   Q*W(GSXIN+B4)
12606  71400  00011                BSK   B4*9D
12607  61000  12602                JP    GDIVNSLO
12610  10034  62116  GSQRT         ENT   Q*W(GSXIN+B4)
12611  23070  00000                SQRT
12612  14034  12644                STR   Q*W(GRMS+B4)
12613  71400  00011                BSK   B4*9D
12614  61000  12610                JP    GSQRT
12615  10034  12644  GHOLD         ENT   Q*W(GRMS+B4)
12616  22000  00003                MUL   3
12617  14034  62131                STR   Q*W(GTHRESH+B4)
12620  71400  00011                BSK   B4*9D
12621  61000  12615                JP    GHOLD
12622  61000  12560                JP    GCONVOLT
12623  63340  12623  GPONG         JP    GPONG*MAGUO
12624  12000  00000  GBILL         NO-OP
12625  71400  23420                BSK   B4*10000D
12626  61000  12624                JP    GBILL
12627  13370  12666                EX-COM     MAGGY*W(GMTEF4)*FORCE
12630  61010  12341                RETURN
12631  00000  00000  NATTAB        ENTRY
12632  11031  62034  GSTUFF        ENT   A*W(NATT+B1)
12633  15022  62150                STR   A*U(GNATT+B2)
12634  12101  00001                ENT   B1*B1+1
12635  11031  62034                ENT   A*W(NATT+B1)
12636  15012  62150                STR   A*L(GNATT+B2)
12637  12202  00001                ENT   B2*B2+1
12640  71100  00011                BSK   B1*9D
12641  61000  12632                JP    GSTUFF
12642  12200  00000                ENT   B2*0
12643  61010  12631                EXIT
                     GRMS           RESERVE   10D
12656  20546  15024  GBUFHI        U-TAGGHIGH+1874D*GHIGH
12657  52254  20547  GBUFSLO       U-TAGGSLO+13125D*GSLO
12660  62142  62130  GBUFIN        U-TAGGTHRESH+9D*GARBAGE2
12661  00000  00400  GADEF1        0     400
12662  00000  00140  GADEF2        140
12663  00000  00000  GMTEF1        600000
12664  00000  53250  GMTEF2        53250
12665  00000  53250  GMTEF3        53250
12666  00000  73250  GMTEF4        73250
12667  00000  73250  GMTEF5        73250
12670  00001  17250  GMTEF6        117250
12671  00001  17250  GMTEF7        117250
12672  00000  17250  GMTEF8        017250
12673  00000  17250  GMTEF9        017250
12674  62202  62143  GBUFID        U-TAGGID+31D*GID
                     GBAG           RESERVE   1
12676  00000  00000  GAS           0
                                   END-PROC  GNOISE
12677  00000  00000  GTT           PROCEDURE GTTY
12700  15030  13365                STR   A*W(ASTORE)
12701  14030  13366                STR   Q*W(QSTORE)
12702  10030  00167                PUT   W(00167)*W(BSTORE)
12703  14030  13367
12704  17330  13372                STR   TELY*W(THOLD)
12705  10000  00777                ENT   Q*777
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12706  11030  13372          ENT   A*W(THOLD)          PUT CODE IN A
12707  43400  00101          COM   MASK*101*AZERO
12710  61000  12713          JP    GTT1
12711  65000  01002          RJP   KEYIN
12712  61000  12745          JP    CONTIN+2
12713  43500  00106  GTT1    COM   MASK*106*ANOT       TEST FOR F
12714  61000  12734          JP    GTTF
12715  43500  00104          COM   MASK*104*ANOT       TEST FOR D
12716  61000  12752          JP    GTTD
12717  43500  00122          COM   MASK*122*ANOT       TEST FOR R
12720  61000  12775          JP    GTTR
12721  43500  00125          COM   MASK*125*ANOT       TEST FOR U
12722  61000  12770          JP    GTTU
12723  43500  00103          COM   MASK*103*ANOT       TEST FOR C
12724  61000  12732          JP    GTTC
12725  43500  00120          COM   MASK*120*ANOT       TEST FOR P
12726  61000  13030          JP    GTTP
12727  43500  00107          COM   MASK*107*ANOT       TEST FOR G
12730  61000  13000          JP    GTTG
12731  61000  12745          JP    CONTIN+2            ILLEGAL CODE.. IGNORE IT
12732  12000  00000  GTTC    NO-OP
12733  61000  12745          JP    CONTIN+2
12734  10000  00001  GTTF    SET   FORCE*TO*1
12735  14030  62172
12736  12700  00000          ENT   B7*0
12737  10000  00006          ENT   Q*6
12740  14057  62253          STR   Q*W(THCTR1+B7)
12741  71700  00002          BSK   B7*2
12742  61000  12737          JP    GTTF+3
12743  13320  13404  CONTIN  EX-COM     TELY*W(MACL)
12744  13320  13405          EX-COM     TELY*W(KEX)
12745  10030  13367          PUT   W(BSTORE)*W(00167)
12746  14030  00167
12747  11030  13365          ENT   A*W(ASTORE)
12750  10030  13366          ENT   Q*W(QSTORE)
12751  60110  12677          RETURN     RIL
12752  11430  62262  GTTD    ENT   A*W(CFLAG)*AZERO
12753  61000  13266          JP    GTTD1A
12754  11000  00003          SET   CHANGE*TO*CHANGE+3
12755  24030  62226
12756  10030  62226  GTTD1   ENT   Q*W(CHANGE)
12757  22000  00001          MUL   1
12760  26200  00000          ADD   Q*0*APOS
12761  14000  00000          CP    Q
12762  27600  00006          SUB   Q*6*QPOS
12763  61000  12745          JP    CONTIN+2
12764  10600  00006          ENT   Q*6*APOS
12765  14000  00000          CP    Q
12766  14030  62226          STR   Q*W(CHANGE)
12767  61000  12745          JP    CONTIN+2
12770  11430  62262  GTTU    ENT   A*W(CFLAG)*AZERO
12771  61000  13302          JP    GTTU1A
12772  10000  00003          SET   CHANGE*TO*CHANGE-3
12773  35030  62226
12774  61000  12756          JP    GTTD1
12775  10000  00001  TTR     SET   RESET*TO*1
12776  14030  62212
12777  61000  12743          JP    CONTIN
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13000  13320  13404  GTT6     EX-COM    TELY*W(MACL)
13001  13320  13405           EX-COM    TELY*W(KEX)
13002  10030  13373           PUT   W(RESTAT)*W(INM)
13003  14030  00046
13004  75330  13403           IN    TELY*W(BUFFET)*MONITOR
13005  61000  12745           JP    CONTIN+2
13006  15030  13365  GTT61    STR   A*W(ASTORE)
13007  14030  13366           STR   Q*W(QSTORE)
13010  10030  00167           PUT   W(00167)*W(BSTORE)
13011  14030  13367
13012  11030  13371           ENT   A*W(KAT)
13013  21000  00100           SUB   A*100
13014  70000  00016           RPT   16
13015  21400  00001           SUB   A*1*AZERO
13016  61000  13000           JP    GTT6
13017  10000  00015           ENT   Q*15
13020  27010  00167           SUB   Q*L(00167)
13021  14030  13370           STR   Q*W(THD)
13022  10000  00001           ENT   Q*1
13023  05030  13370           LSH   Q*W(THD)
13024  11010  62222           ENT   A*L(RLM)
13025  53040  77777           SEL   SU*X77777
13026  15010  62222           STR   A*L(RLM)
13027  61000  12745           JP    CONTIN+2
13030  13320  13404  GTTP     EX-COM    TELY*W(MACL)
13031  13320  13405           EX-COM    TELY*W(KEX)
13032  10030  13374           PUT   W(RESTAT1)*W(INM)
13033  14030  00046
13034  75330  13403           IN    TELY*W(BUFFET)*MONITOR
13035  61000  12745           JP    CONTIN+2
13036  15030  13365  GTTP1    STR   A*W(ASTORE)
13037  14030  13366           STR   Q*W(QSTORE)
13040  10030  00167           PUT   W(00167)*W(BSTORE)
13041  14030  13367
13042  10000  00777           ENT   Q*777
13043  11030  13371           ENT   A*W(KAT)
13044  43500  00101           COM   MASK*101*ANOT          TEST FOR A
13045  61000  13132           JP    GTTA
13046  43500  00123           COM   MASK*123*ANOT          TEST FOR S
13047  61000  13210           JP    GTTS
13050  43500  00124           COM   MASK*124*ANOT          TEST FOR T
13051  61000  13054           JP    GTTT
13052  61000  13030           JP    GTTP
13053  61000  12745           JP    CONTIN+2
13054  13320  13404  GTTT     EX-COM    TELY*W(MACL)
13055  13320  13405           EX-COM    TELY*W(KEX)
13056  10030  13375           PUT   W(RESTAT2)*W(INM)
13057  14030  00046
13060  75330  13403           IN    TELY*W(BUFFET)*MONITOR
13061  61000  12745           JP    CONTIN+2
13062  15030  13365  GTTT1    STR   A*W(ASTORE)
13063  14030  13366           STR   Q*W(QSTORE)
13064  10030  00167           PUT   W(00167)*W(BSTORE)
13065  14030  13367
13066  10030  13371           ENT   Q*W(KAT)
13067  11000  00066           ENT   A*66
13070  04370  00000           COM   Q*A*YMORE
13071  61000  13054           JP    GTTT
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13072  11030  13371          ENT   A*W(KAT)
13073  21600  00061          SUB   A*61*APOS
13074  61000  13054          JP    GTTT
13075  27000  00060          SUB   Q*60
13076  14040  00000          STR   Q*A
13077  27000  00001          SUB   Q*1
13100  05000  00003          LSH   Q*3
13101  26070  00000          ADD   Q*A
13102  14030  13370          STR   Q*W(THD)
13103  13320  13404  GTTT3   EX-COM     TELY*W(MACL)
13104  13320  13405          EX-COM     TELY*W(KEX)
13105  10030  13376          PUT   W(RESTAT3)*W(INM)
13106  14030  00046
13107  75330  13403          IN    TELY*W(BUFFET)*MONITOR
13110  61000  12745          JP    CONTIN+2
13111  15030  13365  GTTT2   STR   A*W(ASTORE)
13112  16730  13367          STR   B7*W(BSTORE)
13113  14030  13366          STR   Q*W(QSTORE)
13114  10030  13371          ENT   Q*W(KAT)
13115  11000  00072          ENT   A*72
13116  04370  00000          COM   Q*A*YMORE
13117  61000  13103          JP    GTTT3
13120  11030  13371          ENT   A*W(KAT)
13121  21600  00061          SUB   A*61*APOS
13122  61000  13103          JP    GTTT3
13123  27000  00061          SUB   Q*61
13124  26030  13370          ADD   Q*W(THD)
13125  11030  62223          ENT   A*W(RLMTTY)
13126  52000  00077          SEL   CL*77
13127  26070  00000          ADD   Q*A
13130  14030  62223          STR   Q*W(RLMTTY)
13131  61000  12745          JP    CONTIN+2
13132  13320  13404  GTTA    EX-COM     TELY*W(MACL)
13133  13320  13405          EX-COM     TELY*W(KEX)
13134  10030  13377          PUT   W(RESTAT4)*W(INM)
13135  14030  00046
13136  75330  13403          IN    TELY*W(BUFFET)*MONITOR
13137  61000  12745          JP    CONTIN+2
13140  15030  13365  GTTA1   STR   A*W(ASTORE)
13141  14030  13366          STR   Q*W(QSTORE)
13142  10030  00167          PUT   W(00167)*W(BSTORE)
13143  14030  13367
13144  10030  13371          ENT   Q*W(KAT)
13145  11000  00063          ENT   A*63
13146  04370  00000          COM   Q*A*YMORE
13147  61000  13132          JP    GTTA
13150  11030  13371          ENT   A*W(KAT)
13151  21600  00061          SUB   A*61*APOS
13152  61000  13132          JP    GTTA
13153  27000  00061          SUB   Q*61
13154  26040  00000          STR   Q*A
13155  05000  00003          LSH   A*3
13156  15030  13370          STR   A*W(THD)
13157  13320  13404  GTTA3   EX-COM     TELY*W(MACL)
13160  13320  13405          EX-COM     TELY*W(KEX)
13161  10030  13402          PUT   W(RESTAT7)*W(INM)
13162  14030  00046
13163  75330  13403          IN    TELY*W(BUFFET)*MONITOR
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13164  61000  12745          JP    CONTIN+2
13165  15030  13365  GTTA2   STR   A*W(ASTORE)
13166  14030  13366          STR   Q*W(QSTORE)
13167  10030  00167          PUT   W(00167)*W(BSTORE)
13170  14030  13367
13171  10030  13371          ENT   Q*W(KAT)
13172  11000  00071          ENT   A*71
13173  04370  00000          COM   Q*A*YMORE
13174  61000  13157          JP    GTTA3
13175  11030  13371          ENT   A*W(KAT)
13176  21600  00061          SUB   A*61*APOS
13177  61000  13157          JP    GTTA3
13200  27000  00060          SUB   Q*60
13201  26030  13370          ADD   Q*W(THD)
13202  11030  62223          ENT   A*W(RLMTTY)
13203  52000  07700          SEL   CL*7700
13204  05000  00006          LSH   Q*6
13205  26070  00000          ADD   Q*A
13206  14030  62223          STR   Q*W(RLMTTY)
13207  61000  12745          JP    CONTIN+2
13210  13320  13404  GTTS    EX-COM      TELY*W(MACL)
13211  13320  13405          EX-COM      TELY*W(KEX)
13212  75330  13403          IN    TELY*W(BUFFET)*MONITOR
13213  10030  13400          PUT   W(RESTAT5)*W(INM)
13214  14030  00046
13215  61000  12745          JP    CONTIN+2
13216  15030  13365  GTTS1   STR   A*W(ASTORE)
13217  14030  13366          STR   Q*W(QSTORE)
13220  10030  00167          PUT   W(00167)*W(BSTORE)
13221  14030  13367
13222  10030  13371          ENT   Q*W(KAT)
13223  11000  00065          ENT   A*65
13224  04370  00000          COM   Q*A*YMORE
13225  61000  13210          JP    GTTS
13226  11030  13371          ENT   A*W(KAT)
13227  21600  00061          SUB   A*61*APOS
13230  61000  13210          JP    GTTS
13231  27000  00062          SUB   Q*62
13232  14040  00000          STR   Q*A
13233  06000  00003          LSH   A*3
13234  15030  13370          STR   A*W(THD)
13235  13320  13404  GTTS3   EX-COM      TELY*W(MACL)
13236  13320  13405          EX-COM      TELY*W(KEX)
13237  10030  13401          PUT   W(RESTAT6)*W(INM)
13240  14030  00046
13241  75330  13403          IN    TELY*W(BUFFET)*MONITOR
13242  61000  12745          JP    CONTIN+2
13243  15030  13365  GTTS2   STR   A*W(ASTORE)
13244  14030  13366          STR   Q*W(QSTORE)
13245  10030  00167          PUT   W(00167)*W(BSTORE)
13246  14030  13367
13247  10030  13371          ENT   Q*W(KAT)
13250  11000  00071          ENT   A*71
13251  04370  00000          COM   Q*A*YMORE
13252  61000  13235          JP    GTTS3
13253  11030  13371          ENT   A*W(KAT)
13254  21600  00061          SUB   A*61*APOS
13255  61000  13235          JP    GTTS3
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13256  27000  00060            SUB   Q+60
13257  26030  13370            ADD   Q+W(THD)
13260  11030  62223            ENT   A+W(RLMTTY)
13261  52030  63412            SEL   CL+770000
13262  05000  00014            LSH   Q+12D
13263  20070  00000            ADD   Q+A
13264  14030  62223            STR   Q+W(RLMTTY)
13265  61000  12745            JP    CONTIN+2
13266  11000  00012  GTTD1A     SET   CHANGE+TO+CHANGE+10D
13267  24030  62226
13270  10030  62226  GTTD1B     ENT   Q+W(CHANGE)
13271  22000  00001            MUL   1
13272  20600  00000            ADD   A+0+APOS
13273  14000  00000            CP    0
13274  27600  00024            SUB   Q+20D+QPOS
13275  61000  12745            JP    CONTIN+2
13276  10600  00024            ENT   Q+20D+APOS
13277  14000  00000            CP    0
13300  14030  62226            STR   Q+W(CHANGE)
13301  61000  12745            JP    CONTIN+2
13302  10000  00012  GTTU1A     SET   CHANGE+TO+CHANGE-10D
13303  35030  62226
13304  61000  13270            JP    GTTD1B
13305  12000  00000  GTTG1A     NO-OP
13306  15030  13365            STR   A+W(ASTORE)
13307  11010  13305            ENT   A+L(GTTG1A)
13310  15010  12677            STR   A+L(GTTY)
13311  11030  13365            ENT   A+W(ASTORE)
13312  61000  13006            JP    GTTG1
13313  12000  00000  GTTP1B     NO-OP
13314  15030  13365            STR   A+W(ASTORE)
13315  11010  13313            ENT   A+L(GTTP1B)
13316  15010  12677            STR   A+L(GTTY)
13317  11030  13365            ENT   A+W(ASTORE)
13320  61000  13036            JP    GTTP1
13321  12000  00000  GTTT1C     NO-OP
13322  15030  13365            STR   A+W(ASTORE)
13323  11010  13321            ENT   A+L(GTTT1C)
13324  15010  12677            STR   A+L(GTTY)
13325  11030  13365            ENT   A+W(ASTORE)
13326  61000  13062            JP    GTTT1
13327  12000  00000  GTTT2D     NO-OP
13330  15030  13365            STR   A+W(ASTORE)
13331  11010  13327            ENT   A+L(GTTT2D)
13332  15010  12677            STR   A+L(GTTY)
13333  11030  13365            ENT   A+W(ASTORE)
13334  61000  13111            JP    GTTT2
13335  12000  00000  GTTA1E     NO-OP
13336  15030  13365            STR   A+W(ASTORE)
13337  11010  13335            ENT   A+L(GTTA1E)
13340  15010  12677            STR   A+L(GTTY)
13341  11030  13365            ENT   A+W(ASTORE)
13342  61000  13140            JP    GTTA1
13343  12000  00000  GTTS1F     NO-OP
13344  15030  13365            STR   A+W(ASTORE)
13345  11010  13343            ENT   A+L(GTTS1F)
13346  15010  12677            STR   A+L(GTTY)
13347  11030  13365            ENT   A+W(ASTORE)
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13350  61000  13216          JP    GTTS1
13351  12000  00000  GTTS2B  NO-OP
13352  15030  13365          STR   A*W(ASTORE)
13353  11010  13351          ENT   A*L(GTTS2B)
13354  15010  12677          STR   A*L(GTTY)
13355  11030  13365          ENT   A*W(ASTORE)
13356  61000  13243          JP    GTTS2
13357  12000  00000  GTTA2M  NO-OP
13360  15030  13365          STR   A*W(ASTORE)
13361  11010  13357          ENT   A*L(GTTA2M)
13362  15010  12677          STR   A*L(GTTY)
13363  11030  13365          ENT   A*W(ASTORE)
13364  61000  13165          JP    GTTA2
13365  00000  00000  ASTORE  0
13366  00000  00000  GSTORE  0
13367  00000  00000  BSTORE  0
13370  00000  00000  THD     0
13371  00000  00000  KAT     0
13372  00000  00000  THOLD   0
13373  65000  13305  RESTAT  RJP   GTTG1A
13374  65000  13313  RESTAT1 RJP   GTTP1B
13375  65000  13321  RESTAT2 RJP   GTTT1C
13376  65000  13327  RESTAT3 RJP   GTTT2D
13377  65000  13335  RESTAT4 RJP   GTTA1E
13400  65000  13343  RESTAT5 RJP   GTTS1F
13401  65000  13351  RESTAT6 RJP   GTTS2G
13402  65000  13357  RESTAT7 RJP   GTTA2H
13403  13371  13371  BUFFET  U-TAGKAT*KAT
13404  00000  00013  MACL    0     13
13405  00000  00030  KEX     0     30
                             END-PROC  GTTY
13406  00000  00000          PROCEDURE PROHISP
13407  11030  62212  JUMPINTO ENT  A*W(RESET)*ANOT
13410  61000  13416          JP    J2
13411  16030  62212          STR   B0*W(RESET)
13412  16030  62253          STR   B0*W(THCTR1)
13413  16030  62254          STR   B0*W(THCTR1+1)
13414  16030  62255          STR   B0*W(THCTR1+2)
13415  16030  62172          STR   B0*W(FORCE)
13416  12100  44475  J2      ENT   B1*18749D
13417  16031  15024          STR   B0*W(LEV+B1)
13420  72100  13417          BJP   B1*J2+1
13421  16030  62157          STR   B0*W(SSBC)
13422  16030  62156          STR   B0*W(ETL)
13423  16030  62161          STR   B0*W(SSSS)
13424  16030  62155          STR   B0*W(TESTY)
13425  10000  00002          PUT   2*W(ICMSEC)
13426  14030  62162
13427  12100  00035          ENT   B1*29D                    INITIALIZE CFIVE
13430  16031  62263  PC5     STR   B0*W(CFIVE+B1)
13431  72100  13430          BJP   B1*PC5
13432  11030  00160  J9      ENT   A*W(160)
13433  20000  00002          ADD   A*2
13434  15030  62260          STR   A*W(TCLOCK)
13435  11030  00160          ENT   A*W(160)
13436  20030  63407          ADD   A*60000D
13437  15030  62261          STR   A*W(INCLOCK)
13440  13130  63413          EX-COM    SAND*0*FORCE
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13441  13130  15005          EX-COM    SAND*W(STEP1)*FORCE
13442  12200  00002          ENT  B2*2
13443  61000  13456          JP   P3
13444  12200  00002  PROJ    ENT  B2*2
13445  11430  62212          ENT  A*W(RESET)*AZERO
13446  61000  13407          JP   JUMPINTO
13447  11030  00160  P5      ENT  A*W(160)
13450  04630  62260          COM  A*W(TCLOCK)*YLESS
13451  61000  13447          JP   P5
13452  20000  00002          ADD  A*2
13453  15030  62260          STR  A*W(TCLOCK)
13454  11000  00002          ENT  A*2
13455  24030  62162          RPL  A+Y*W(ICMSEC)
13456  11030  00160  P3      ENT  A*W(160)
13457  21730  62261          SUB  A*W(INCLOCK)*ANEG
13460  61000  13652          JP   PHSEXT
13461  73270  14744          IN   SAMPLE*W(ADBF)
13462  13270  14754          EX-COM    SAMPLE*W(MAD)*FORCE
13463  70000  00006          RPT  6
13464  12000  00000          NO-OP
13465  73270  15014          IN   SAMPLE*W(SPLED)
13466  13260  14745          EX-COM    SAMPLE*W(FLIP1)
13467  10030  62162          ENT  Q*W(ICMSEC)
13470  27700  00004          SUB  Q*4*QNEG
13471  65000  13601          RJP  PZZZ
13472  11430  62172  PROH    ENT  A*W(FORCE)*AZERO
13473  61000  13507          JP   GOMER
13474  16032  62253          STR  B0*W(THCTR1+B2)
13475  12500  00010          ENT  B5*8D
13476  61000  13635          JP   SETCFIVE
13477  10031  62263  PRH2    ENT  Q*W(CFIVE+B1)
13500  14036  62263          STR  Q*W(CFIVE+B6)
13501  27000  00001          SUB  Q*1
13502  27732  62177          SUB  Q*W(THAT+B2)*QNEG
13503  36032  62253          RPL  Y+1*W(THCTR1+B2)
13504  12101  00001          INCREMENT B1*1
13505  12606  00001          INCREMENT B6*1
13506  72500  13477          BJP  B5*PRH2
13507  10052  61523  GOMER   ENT  Q*LX(SHTDTA+B2)
13510  11430  62172          ENT  A*W(FORCE)*AZERO
13511  61000  13515          JP   PRH41
13512  14036  62263          STR  Q*W(CFIVE+B6)
13513  27000  00001          SUB  Q*1
13514  27732  62177          SUB  Q*W(THAT+B2)*QNEG
13515  36032  62253  PRH41   RPL  Y+1*W(THCTR1+B2)
13516  11032  62253          ENT  A*W(THCTR1+B2)
13517  21700  00006          SUB  A*6*ANEG
13520  61000  13523          JP   PROM
13521  72200  13472          BJP  B2*PROH
13522  61000  13444          JP   PROJ
13523  11430  62155  PROM    ENT  A*W(TESTY)*AZERO
13524  61000  13577          JP   PRATT
13525  36030  62155          RPL  Y+1*W(TESTY)
13526  11030  62172          ENT  A*W(FORCE)
13527  15020  61646          STR  A*U(ID+2)
13530  13130  15006          EX-COM    SAND*W(STEP2)*FORCE
13531  65000  11212          UPITIME
13532  10030  00160          ENT  Q*W(160)
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13533  26030  62214          ADD   Q*W(ICCYS)
13534  27030  62213          SUB   Q*W(LASTIME)
13535  22000  00764          MUL   764
13536  26000  00400          ADD   Q*400
13537  03000  00011          RSH   AQ*9D
13540  14010  61681          STR   Q*L(ID+5)
13541  10030  62215          ENT   Q*W(ISEC)
13542  14020  61681          STR   Q*U(ID+5)
13543  10030  62216          ENT   Q*W(IMINUTE)
13544  14010  61650          STR   Q*L(ID+4)
13545  10030  62217          ENT   Q*W(IHOUR)
13546  14020  61650          STR   Q*U(ID+4)
13547  10030  62220          ENT   Q*W(IDAY)
13550  14010  61647          STR   Q*L(ID+3)
13551  10030  62221          ENT   Q*W(IMONTH)
13552  14020  61647          STR   Q*U(ID+3)
13553  11030  62160          ENT   A*W(MFLAG)
13554  15010  61707          STR   A*L(ID+35D)
13555  11430  62172          ENT   A*W(FORCE)*AZERO
13556  61000  13570          JP    BOM
13557  11410  62174          ENT   A*L(INI)*AZERO
13560  61000  13574          JP    PIA
13561  16050  62174          STR   BO*CPL(INI)
13562  10030  00160          ENT   Q*W(160)
13563  27030  62213          SUB   Q*W(LASTIME)
13564  27000  74000          SUB   Q*30720D
13565  01000  00012          RSH   Q*10D
13566  14070  62175          STR   Q*CPW(CTSNDS)
13567  61000  13574          JP    PIA
13570  10030  00160  BOM     ENT   Q*W(160)
13571  26000  11610          ADD   Q*5000D
13572  16050  62174          STR   BO*CPL(INI)
13573  61000  13576          JP    PR4
13574  10030  00160  PIA     ENT   Q*W(160)
13575  26000  35230          ADD   Q*15000D
13576  14030  62261  PR4     STR   Q*W(INCLOCK)
13577  72200  13472  PRATT   BJP   B2*PROH
13600  61000  13444          JP    PROJ
13601  12000  00000  PZZZ    NO-OP
13602  16030  62162          STR   BO*W(ICMSEC)
13603  36030  62157          RPL   Y+1*W(SSBC)
13604  12500  00011          ENT   B5*9D
13605  11030  62156          ENT   A*W(ETL)
13606  20000  00011          ADD   A*9D
13607  04700  44476          COM   A*18750D*YMORE
13610  61000  13613          JP    PZZC
13611  12170  00000          ENT   B1*A
13612  61000  13615          JP    PZZD
13613  16030  62156  PZZC    STR   BO*W(ETL)
13614  12100  00011          ENT   B1*9D
13615  11530  62161  PZZD    ENT   A*W(SSSS)*ANOT
13616  61000  13627          JP    PZZB
13617  10055  61523  PZZA    ENT   Q*LX(SHTDTA+BE)
13620  14011  15024          STR   Q*L(LEV+B1)
13621  72100  13622          INCREMENT B1*-1
13622  72500  13617          BJP   B5*PZZA
13623  16030  62161          STR   BO*W(SSSS)
13624  11000  00012          ENT   A*10D
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13625  24030  62156           RPL   A+Y*W(ETL)
13626  61010  13601           JP    L(PZZZ)
13627  10055  61523  PZZB     ENT   Q*LX(SHTDTA+B5)
13630  14021  15024           STR   Q*U(LEV+B1)
13631  72100  13632           INCREMENT B1*-1
13632  72500  13627           BJP   B5*PZZB
13633  36030  62161           RPL   Y+1*W(SSSS)
13634  61010  13601           JP    L(PZZZ)
13635  11402  00000  SETCFIVE  ENT   A*B2*AZERO
13636  61000  13642           JP    SET2
13637  12100  00001           ENT   B1*1
13640  12600  00000           ENT   B6*0
13641  61000  13477           JP    PRH2
13642  21400  00001  SET2      SUB   A*1*AZERO
13643  61000  13647           JP    SET3
13644  12100  00013           ENT   B1*13
13645  12600  00012           ENT   B6*12
13646  61000  13477           JP    PRH2
13647  12100  00025  SET3      ENT   B1*25
13650  12600  00024           ENT   B6*24
13651  61000  13477           JP    PRH2
13652  11410  62174  PHSEXT   ENT   A*L(INI)*AZERO
13653  61000  13662           JP    PH6
13654  65000  11212           RJP   UPITIME
13655  16030  00160           STR   B0*W(160)
13656  16030  62162           STR   B0*W(ICMSEC)
13657  16030  62213           STR   B0*W(LASTIME)
13660  16030  62173           STR   B0*W(CTSNDS)
13661  61000  13432           JP    J9
13662  16030  62156  PH6      STR   B0*W(ETL)
13663  36030  62225           RPL   Y+1*W(HOURCNTR)
13664  16030  62212           STR   B0*W(RESET)
13665  11030  62226           ENT   A*W(CHANGE)
13666  24030  62173           RPL   A+Y*W(CTSNDS)
13667  16030  62226           STR   B0*W(CHANGE)
13670  13130  15007           EX-COM     SAND*W(STEP3)*FORCE
13671  11530  62155           ENT   A*W(TESTY)ANOT
13672  61000  13675           JP    CBJ
13673  16020  61646           STR   B0*U(ID+2)
13674  61000  13676           JP    CBK
13675  16060  61646  CBJ      STR   B0*CPU(ID+2)
13676  74370  15023  CBK      OUT   MAGGY*W(IDBUF)
13677  12130  62163           ENT   B1*W(MTN)
13700  13371  14750           EX-COM     MAGGY*W(MTCD+B1)*FORCE
13701  11530  62257  ZAP      ENT   A*W(TFLAG)*ANOT
13702  61000  13701           JP    ZAP
13703  16030  62257           STR   B0*W(TFLAG)
13704  11530  62160           ENT   A*W(MFLAG)*ANOT
13705  61000  13714           JP    FIVESEC
13706  21500  00001           SUB   A*1*ANOT
13707  61000  13712           JP    TENSEC
13710  74370  15021           OUT   MAGGY*W(MTBF15)
13711  61000  13715           JP    TOOT
13712  74370  15017  TENSEC   OUT   MAGGY*W(MTBF10)
13713  61000  13715           JP    TOGT
13714  74370  15016  FIVESEC  OUT   MAGGY*W(MTBF5)
13715  12130  62163  TOOT     ENT   B1*W(MTN)
13716  13371  14750           EX-COM     MAGGY*W(MTCD+B1)*FORCE
```

```
13717  61010  13406                RETURN
                                   END-PROC  PROHISP
13720  00000  00000                PROCEDURE PTTY
                                   COMMENT   TYPES LATEST 60 VALUES OF
                                   COMMENT   TOTAL PROP LOSS AND SN RATIO
13721  65000  10041                TYPET$CR$TOTAL PROPAGATION LOSS  SN RATIO
13722  76642  06441
13723  54006  06220
13724  60414  74164
13725  51205  60054
13726  20666  30000
13727  63560  06241
13730  64512  00000
13731  00007  70000
13732  65000  10041                TYPET$CR$RANGE IN HUNDRED YARDS
13733  76624  15647
13734  45005  15600
13735  50655  64462
13736  45440  07141
13737  62446  30035
13740  00007  70000
13741  10030  61535                TYPE$RANGE
13742  11000  00000
13743  65000  10306
13744  12100  00073                ENT  B1*59D
13745  10031  62565  PTTY2        PUT  W(TPL+160D+P1)*W(TYPECELL1)
13746  14030  62322
13747  10031  63121                PUT  W(SNRAT+160D+B1)**(TYPECELL2)
13750  14030  62323
13751  16110  13762                STR  B1*L(PTTY1)
13752  65000  10041                TYPET$CR$
13753  76007  70000
13754  10030  62322                TYPE$TYPECELL1*TYPECELL2
13755  11000  00003
13756  65000  10306
13757  10030  62323
13760  11000  00003
13761  65000  10306
13762  12100  00000  PTTY1        ENT  B1*0
13763  72100  13745                BJP  B1*PTTY2
13764  61010  13720                RETURN
                                   END-PROC  PTTY
13765  00000  00000                PROCEDURE POUTPUT
                                   COMMENT   FEEDS 3 FEET OF PAPER
13766  12100  00330                ENT  B1*216D
13767  16110  13771  POUT4         STR  B1*L(POUT3)
13770  65000  11200                LFANDCR
13771  12100  00000  POUT3         ENT  B1*0
13772  72100  13767                BJP  B1*POUT4
                                   COMMENT   GIVES SIDE BY SIDE LISTING OF
                                   COMMENT   TOTAL PROP LOSS AND S/N RATIO
                                   COMMENT   ON MONROE AT END OF HOUR
13773  70100  00030                CLEAR24D*PLAB
13774  16030  63215
13775  12700  63215                FORM-TEXT PLAB*11D*TOTAL PROPAGATION LOSS
13776  65000  10176
13777  00006  00002
14000  77777  77777
```

```
14001  77000  00000
14002  66036  62446
14003  01525  40352
14004  24322  46634
14005  03500  14603
14006  65650  10101
14007  01010  10101
14010  12700  63215          FORM-TEXT PLAB*55D*S/N RATIO
14011  65000  10176
14012  00003  00012
14013  00000  00077
14014  77777  77777
14015  01010  10165
14016  64500  15424
14017  66340  30101
14020  11000  63215          ENT  A*PLAB
14021  65000  11011          MONROE
14022  70100  00030          CLEAR24D*PLAB
14023  16030  63215
14024  12700  63215          FORM-TEXT PLAB*25D*RANGE
14025  65000  10176
14026  00002  00004
14027  00000  00077
14030  77777  77777
14031  01010  10154
14032  24503  23001
14033  10030  61535          FORM-DEC  PLAB*31D*RANGE
14034  12700  63223
14035  11000  00000
14036  65000  10466
14037  11000  63215          ENT  A*PLAB
14040  65000  11011          RJP  MONROE
14041  70100  00030          CLEAR24D*PLAB
14042  16030  63215
14043  12700  63215          FORM-TEXT PLAB*25D*MONTH
14044  65000  10176
14045  00002  00004
14046  00000  00077
14047  77777  77777
14050  01010  10147
14051  03506  63301
14052  10030  62221          FORM-DEC  PLAB*31D*IMONTH
14053  12700  63223
14054  11000  00000
14055  65000  10466
14056  12700  63215          FORM-TEXT PLAB*37D*DAY
14057  65000  10176
14060  00002  00007
14061  00777  77777
14062  77770  00000
14063  01272  47301
14064  01010  10101
14065  10030  62220          FORM-DEC  PLAB*41D*IDAY
14066  12700  63225
14067  11000  00000
14070  65000  10466
14071  12700  63215          FORM-TEXT PLAB*46D*HOUR
14072  65000  10176
```

```
14073  00002  00011
14074  77777  77777
14075  77000  00000
14076  33036  75401
14077  01010  10101
14100  10030  62217          FORM-DEC  PLAB*51D*IHOUR
14101  12700  63227
14102  11000  00000
14103  65000  10466
14104  12700  63215          FORM-TEXT PLAB*54D*MINUTE
14105  65000  10176
14106  00002  00012
14107  00000  07777
14110  77777  77700
14111  01010  14734
14112  50676  63001
14113  10030  62216          FORM-DEC  PLAB*61D*IMINUTE
14114  12700  63231
14115  11000  00000
14116  65000  10466
14117  12700  63215          FORM-TEXT PLAB*64D*SECOND
14120  65000  10176
14121  00002  00014
14122  00000  07777
14123  77777  77700
14124  01010  16530
14125  26035  02701
14126  10030  62215          FORM-DEC  PLAB*71D*ISEC
14127  12700  63233
14130  11000  00000
14131  65000  10466
14132  11000  63215          ENT  A*PLAB
14133  65000  11011          MONROE
14134  12100  00000          CL   B1
14135  70100  00030  POUT1   CLEAR24D*PLAB
14136  16030  63215
14137  10031  62325          PUT  W(TPL+B1)*W(FORMCELL)
14140  14030  62324
14141  10030  62324          FORM-DEC  PLAB*1*FORMCELL
14142  12700  63215
14143  11000  00003
14144  65000  10466
14145  10031  62326          PUT  W(TPL+1+B1)*W(FORMCELL)
14146  14030  62324
14147  10030  62324          FORM-DEC  PLAB*21D*FORMCELL
14150  12700  63221
14151  11000  00003
14152  65000  10466
14153  10031  62661          PUT  W(SNRAT+B1)*W(FORMCELL)
14154  14030  62324
14155  10030  62324          FORM-DEC  PLAB*41D*FORMCELL
14156  12700  63225
14157  11000  00003
14160  65000  10466
14161  10031  62662          PUT  W(SNRAT+1+B1)*W(FORMCELL)
14162  14030  62324
14163  10030  62324          FORM-DEC  PLAB*61D*FORMCELL
14164  12700  63231
```

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14165  11000  00003
14166  65000  10466
14167  11000  63215          ENT  A*PLAB
14170  65000  11011          MONROE
14171  12101  00001          ENT  B1*1+B1
14172  71100  00333          BSK  B1*219D
14173  61000  14135          JP   POUT1
14174  61010  13765          RETURN
                            END-PROC  POUTPUT
14175  00000  00000          PROCEDURE RYTATABLE
                            COMMENT   FILLS TABLES FOR PRINT
                            COMMENT   OUT AT END OF HOUR
14176  10030  62225          ENT  Q*W(HOURCNTR)
14177  27000  00001          SUB  Q*1
14200  22000  00012          MUL  10D
14201  14010  00161          STR  Q*L(00161)
14202  12200  00000          CL   B2
14203  11032  61550  RYTBL1   ENT  A*W(PROPL+B2)
14204  10032  61562          ENT  Q*W(SNTAB+B2)
14205  15031  62325          STR  A*W(TPL+B1)
14206  14031  62661          STR  Q*W(SNRAT+B1)
14207  12101  00001          ENT  B1*1+B1
14210  71200  00011          BSK  B2*9D
14211  61000  14203          JP   RYTBL1
14212  61010  14175          RETURN
                            END-PROC  RYTATABLE
                            PROGRAM
14213  00000  00000          PROCEDURE RNGTVLTM
14214  10030  63246          ENT  Q*W(BANG)
14215  22000  01750          MUL  1000D
14216  23000  02000          DIV  1024D
14217  14030  62250          STR  Q*W(ALPHA)
14220  10030  63247          ENT  Q*W(BANG+1)
14221  22000  01750          MUL  1000D
14222  34030  62250          RPL  Y+Q*W(ALPHA)
14223  10030  63250          ENT  Q*W(BANG+2)
14224  22030  63407          MUL  60000D
14225  34030  62250          RPL  Y+Q*W(ALPHA)
14226  10030  14241          ENT  Q*W(DELAYTIME)
14227  35030  62250          RPL  Y-Q*W(ALPHA)
14230  12100  00000          CL   B1
14231  10031  63253  MVBANG   ENT  Q*W(BANG+5+B1)
14232  14031  63246          STR  Q*W(BANG+B1)
14233  71100  00124          BSK  B1*124
14234  61000  14231          JP   MVBANG
14235  37630  63400          RPL  Y-1*W(BANGTIME)*APOS   IN A REGISTER ALSO
14236  16030  63400          STR  B0*W(BANGTIME)
14237  65000  12276          RJP  TVLTMRANGE
14240  61010  14213          RETURN
14241  00000  00764  DELAYTIME 500D                      DELAY TIME IN MS
                            END-PROC  RNGTVLTM
14242  00000  00000          PROCEDURE SHOTOFF
                            COMMENT   PUTS SHOT TIME IN TABLE BANG
                            COMMENT   ON INTERRUPT FROM BANG BOX
14243  16510  14266          STR  B5*L(SAVSHOTB5)
14244  16610  14267          STR  B6*L(SAVSHOTB6)
14245  15030  14273          STR  A*W(SAVSHOTA)
14246  14030  14274          STR  Q*W(SAVSHOTQ)
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14247  65000  11212              UPITIME
14250  10030  62214              SET  BANG(BANGTIME,ICLOCKCYS)*TO*ICCYS
14251  12530  63400
14252  70300  00005
14253  12605  00000
14254  14036  63246
14255  10030  62215              SET  BANG(BANGTIME,BSEC)*TO*ISEC
14256  14036  63247
14257  10030  62216              SET  BANG(BANGTIME,BMIN)*TO*IMINUTE
14260  14036  63250
14261  10030  62217              SET  BANG(BANGTIME,BHOUR)*TO*IHOUR
14262  14036  63251
14263  10030  62220              SET  BANG(BANGTIME,BDAY)*TO*IDAY
14264  14036  63252
14265  36030  63400              SET  BANGTIME*TO*BANGTIME+1
14266  12500  00000  SAVSHOTB5  ENT  B5*0
14267  12600  00000  SAVSHOTB6  ENT  B6*0
14270  11030  14273              ENT  A*W(SAVSHOTA)
14271  10030  14274              ENT  Q*W(SAVSHOTQ)
14272  60110  14242              RETURN    RIL
14273  00000  00000  SAVSHOTA   0
14274  00000  00000  SAVSHOTQ   0
                                END-PROC  SHOTOFF
14275  00000  00000              PROCEDURE EXECP1
14276  66021  00000              SIL-EX    ALL
14277  11030  15010              ENT  A*W(TELYCALL)
14300  15030  00026              STR  A*W(TTYINT)          SET UP TELETYPE INTERRUPT
14301  11030  15012              ENT  A*W(SHOTCALL)
14302  15030  00030              STR  A*W(SHOTINT)         SET UP SHOT INTERRUPT CHANNEL
14303  11030  15011              ENT  A*W(MAGCALL)
14304  15030  00027              STR  A*W(MAGINT)          SET UP MAG TAPE INTERRUPT
14305  66330  00000              RIL-EX    TELY
14306  66370  00000              RIL-EX    MAGGY
14307  66430  00000              RIL-EX    SHOTCHAN        BANG BOX CHANNEL
14310  10000  03522              PUT  1874D*W(WORDS)
14311  14030  62232
14312  10000  00011              PUT  9D*W(ITEMS)
14313  14030  62233
14314  16030  62163              STR  B0*W(MTN)            SET OUTFLAG FOR UNIT 1
14315  16030  62166              STR  B0*W(LTAPE)          CLEAR LOW TAPE FLAG
14316  16030  62167              STR  B0*W(PAR)            CLEAR PARITY ERROR FLAG
14317  16030  62224              STR  B0*W(RWT4)
14320  16030  62257              STR  B0*W(TFLAG)
14321  13370  14753              EX-COM    MAGGY*W(MCMT)*FORCE   REQUEST CONTROL OF MT
14322  11530  62257  EXAAA       ENT  A*W(TFLAG)*ANOT
14323  61000  14322              JP   EXAAA                WAIT FOR INTRRPT
14324  16050  62262              STR  B0*CPL(CFLAG)        SET GTTY FOR PHASE 1A
14325  16030  63400              STR  B0*W(BANGTIME)
14326  73270  14744              IN   SAMPLE*W(ADBF)
14327  13260  14754              EX-COM    SAMPLE*W(MAD)   MASTER CLEAR A/D
14330  16030  62164              STR  B0*W(SHTCTR)         CLEAR SHOT COUNTER
14331  16030  62252              STR  B0*W(SERISCNTR)
14332  16030  62226              STR  B0*W(CHANGE)
14333  65000  10707              TAPESTAT                  TEST TAPE STATUS
14334  11030  61535              ENT  A*W(RANGE)
14335  15030  61645              STR  A*W(ID+1)            SET ESTIMATED RANGE IN ID
14336  70100  00132              CLEAR90D*BANG
14337  16030  63246
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14340  61100  14342            JP   EXABA*KEY1
14341  65000  11263            TIMESYNC
14342  16030  00160  EXABA     STR  B0*W(160)
14343  16030  62213            STR  B0*W(LASTIME)
14344  16030  62173            STR  B0*W(CTSNDS)
14345  65000  12341            GNOISE    INPUT*MTN
14346  65000  10041            TYPET$CR$NOISE SAMPLE TAKEN
14347  76562  05163
14350  45006  34155
14351  60544  50064
14352  41534  55600
14353  00007  70000
14354  65000  10041            TYPET$CR$SET ATTENUATORS FOR SIGNAL
14355  76634  56400
14356  41646  44556
14357  65416  42062
14360  63004  62062
14361  00635  14756
14362  41547  70000
14363  61300  14401  EXACA     JP   EXAA*KEY3
14364  11530  62212            ENT  A*W(RESET)*ANOT
14365  61000  14363            JP   EXACA
14366  65000  10041            TYPET$CR$RESET TAKING ANOTHER NOISE SAMPLE
14367  76624  56345
14370  64006  44153
14371  51564  70041
14372  56206  45045
14373  62005  62051
14374  63450  06341
14375  55605  44500
14376  00007  70000
14377  61000  14342            JP   EXABA
14400  61000  14363            JP   EXACA
14401  16030  62222  EXAA      STR  B0*W(RLM)
14402  16030  62225  PINSERT2  STR  B0*W(HOURCNTR)
14403  16030  62223            STR  B0*W(RLMTTY)          CLEAR GRAPH REQUESTS
14404  16030  63245            STR  B0*W(CYCLEFLAG)
14405  61100  14407            JP   EXAC*KEY1             KEYU SET IF EX CLOCK FAILS
14406  65000  11263            TIMESYNC                   SNYC INTERNAL TIMES TO EXTERNAL CL(
14407  16030  00160  EXAC      STR  B0*W(160)             ZERO INTERNAL CLOCK
14410  16030  62213            STR  B0*W(LASTIME)
14411  16030  62173            STR  B0*W(CTSNDS)
14412  12000  00000            NO-OP
14413  12000  00000            NO-OP
14414  12200  00002            ENT  B2*2
14415  12100  00010            ENT  B1*10
14416  10032  62131  EXAB      ENT  Q*W(GTHRESH+B2)
14417  14021  61644            STR  Q*U(ID+B1)            STORE NOISE THRESHOLD IN ID
14420  11032  62034            ENT  A*W(NATT+B2)
14421  15011  61644            STR  A*L(ID+B1)            NOISE ATTEN SETTINGS IO ID
14422  72100  14423            INCREMENT B1*-1
14423  72200  14416            BJP  B2*EXAB
14424  12000  00000            NO-OP
14425  16030  62174            STR  B0*W(INI)
14426  11000  00026            ENT  A*22D
14427  15030  62211            STR  A*W(REPRATE)          NUMBER OF SHOTS PER HOUR
14430  12000  00000            NO-OP
14431  16030  62155  EXAE      STR  B0*W(TESTY)           CLEAR DUO FLAG
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14432  16030  62172          STR  B0*W(FORCE)
14433  11030  63245          ENT  A*W(CYCLEFLAG)*ANOT     WHICH SHOT
14434  61000  14441          JP   DEEPSHOT
14435  11000  00264          ENT  A*180D
14436  10000  00004          ENT  Q*4
14437  12100  00001          ENT  B1*1
14440  61000  14444          JP   EXAEA
14441  11000  00170  DEEPSHOT ENT  A*120D
14442  10000  00005          ENT  Q*5
14443  12100  00002          ENT  B1*2
14444  15030  11261  EXAEA    STR  A*W(CYCLENGTH)       TIME BETWEEN SHOTS
14445  14030  62210          STR  Q*W(CODEWORD)        SOURCE LEVEL
14446  16130  62207          STR  B1*W(DEPTH)          DEPTH CODE FOR SHOT
14447  11010  63245          ENT  A*L(CYCLEFLAG)
14450  15050  63245          STR  A*CPL(CYCLEFLAG)
14451  12100  00002          ENT  B1*2
14452  16031  62253  EXAD     STR  B0*W(THCTR1+B1)      CLEAR THRESHOLD COUN ERS
14453  72100  14452          BJP  B1*EXAD
14454  12100  00011          ENT  B1*9D
14455  12200  00000          ENT  B2*0
14456  10032  62046  EXAG     ENT  Q*W(ATTEN+B2)        PUT
14457  14021  61644          STR  Q*U(ID+B1)           SIGNAL
14460  12202  00001          ENT  B2*B2+1              ATTENUATOR
14461  10032  62046          ENT  Q*W(ATTEN+B2)        VALUES
14462  14011  61644          STR  Q*L(ID+B1)           IN
14463  12202  00001          ENT  B2*B2+1
14464  71100  00015          BSK  B1*13D
14465  61000  14456          JP   EXAG                 RECORD
14466  16010  61707          STR  B0*L(ID+35D)
14467  36030  62164          RPL  Y+1*W(SHTCTR)
14470  15010  61644          STR  A*L(ID)              CURRENT SHOT NUMBER
14471  11030  62207          ENT  A*W(DEPTH)
14472  15010  61646          STR  A*L(ID+2)
14473  12100  00002          ENT  B1*2
14474  11031  62046  EXAL     ENT  A*W(ATTEN+B1)
14475  21631  62034          SUB  A*W(NATT+B1)*APOS
14476  61000  14501          JP   EY
14477  60400  14501          JP   EY*AZERO
14500  61000  14504          JP   EZ1
14501  10000  00001  EY       PUT  1*W(DUMP)
14502  14030  62321
14503  61000  14525          JP   EXAJ
14504  21400  00001  EZ1      SUB  A*1*AZERO
14505  61000  14511          JP   EZ2
14506  10000  00012          PUT  10D*W(DUMP)
14507  14030  62321
14510  61000  14525          JP   EXAJ
14511  21400  00001  EZ2      SUB  A*1*AZERO
14512  61000  14516          JP   EZ3
14513  10000  00144          PUT  100D*W(DUMP)
14514  14030  62321
14515  61000  14525          JP   EXAJ
14516  21400  00001  EZ3      SUB  A*1*AZERO
14517  61000  14523          JP   EZ4
14520  10000  01750          PUT  1000D*W(DUMP)
14521  14030  62321
14522  61000  14525          JP   EXAJ
14523  10000  23420  EZ4      PUT  10000D*W(DUMP)
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14524  14030  62321
14525  11000  00000  EXAJ      CL   A
14526  71031  62131           BSK  B0*W(GTHRESH+B1)
14527  10131  62131           ENT  Q*W(GTHRESH+B1)*SKIP
14530  10100  00003           ENT  Q*3*SKIP
14531  23030  62321           DIV  W(DUMP)
14532  14031  62177           STR  Q*W(THAT+B1)
14533  72100  14474  EXAK      BJP  B1*EXAL
14534  65000  13406           PROHISP                    START SAMPLING
14535  16030  62175           STR  B0*W(CPHP)
14536  63340  14536  EXAM      JP   EXAM*MAGOO
14537  65000  14613           RJP  TAPEWAIT
14540  16030  62257           STR  B0*W(TFLAG)
14541  74370  15023           OUT  MAGGY*W(IDBUF)        WRITE ID RECORD
14542  13370  14777           EX-COM    MAGGY*W(PMCB)*FORCE      ON UNIT 2
14543  11530  62257  EXAN      ENT  A*W(TFLAG)*ANOT
14544  61000  14543           JP   EXAN                  WAIT FOR INTERRUPT
14545  16030  62257           STR  B0*W(TFLAG)
14546  12100  00000  EXAQA     ENT  B1*0
14547  11430  62163           ENT  A*W(MTN)*AZERO        WHICH UNIT
14550  12100  00002           ENT  B1*2                  SET FOR UNIT 3
14551  13371  15000           EX-COM    MAGGY*W(WEOF+B1)*FORCE      WRITE END FILE
14552  11530  62257  EXAO      ENT  A*W(TFLAG)*ANOT
14553  61000  14552           JP   EXAO
14554  16030  62257           STR  B0*W(TFLAG)
14555  65000  14213           RNGTVLTM                   CALCULATE RANGE AND TRAVEL TIME
14556  65000  12271           PHASE1M                    MACDONALDS PROGRAMS
14557  74370  15022           OUT  MAGGY*W(PRODATABF)    WRITE PROCESSED DATA RECORD
14560  13370  14777           EX-COM    MAGGY*W(PMCB)*FORCE
14561  11530  62257  EXAS      ENT  A*W(TFLAG)*ANOT
14562  61000  14561           JP   EXAS
14563  16030  62257           STR  B0*W(TFLAG)
14564  13370  15001           EX-COM    MAGGY*W(WEOF+1)*FORCE       NEO FILE
14565  11530  62257  EXAT      ENT  A*W(TFLAG)*ANOT
14566  61000  14565           JP   EXAT
14567  16030  62257           STR  B0*W(TFLAG)
14570  65000  14175           RJP  RYTATABLE
14571  10030  62176           ENT  Q*W(SOA)              SPEED OF ADVANVE IN KNOTS
14572  22000  00024           MUL  20D                   CHANGE TO YARDS IN 100S
14573  22030  11261           MUL  W(CYCLENGTH)          TIME BETWEEN SHOTS IN SECONDS
14574  65000  11212           UPITIME
14575  23000  07020           DIV  3600D                 CONVERT TO HOURS
14576  26030  61535           ADD  Q*W(RANGE)
14577  10030  61645           STR  Q*W(ID+1)             SET ESTIMATED RANGE IN ID
14600  [illegible]  03        SUB  A*1800D*ANEG          TEST REMAINDER
14601  [illegible]            RPL  Y+1*W(ID+1)           ROUND OFF TO 100 YARDS
14602  65000  10707           TAPESTAT                   CHECK TAPE STATUSS
14603  36030  62252           RPL  Y+1*W(SERISCNTR)      UPDATE HOURLY SHOT COUNTER
14604  11030  62211  EXAWA     ENT  A*W(REPRATE)
14605  21530  62252           SUB  A*W(SERISCNTR)*ANOT   ARE ALL HOURS SHOTS IN
14606  61000  14620           JP   EXBA                  YES
14607  65000  11212  EXAW      UPITIME                    UPDATE INTERNAL TIME AND CTSNDS
14610  11530  62175           ENT  A*W(CPHP)*ANOT
14611  61000  14607           JP   EXAW
14612  61000  14431           JP   EXAE
14613  12000  00000  TAPEWAIT  NO-OP
14614  12100  00371           ENT  B1*249D               DELAY UNTIL
14615  12000  00000  TAPE      NO-OP                      TAPE STOPS
```

```
14616  72100  14615            BJP  B1*TAPWA
14617  61010  14613            JP   L(TAPEWAIT)
14620  16030  62257  EXBA      STR  B0*W(TFLAG)
14621  13370  15003            EX-COM    MAGGY*W(WEOF+3)*FORCE      EOF ON UNIT 4
14622  11B30  62257  EXBAA     ENT  A*W(TFLAG)*ANOT
14623  61000  14622            JP   EXBAA
14624  65000  10707            TAPESTAT
14625  16030  62252            STR  B0*W(SERISCNTR)
14626  65000  11212            UPITIME
14627  11030  00160            ENT  A*W(160)
14630  15030  62227            STR  A*W(LASHOTME)
14631  65000  10041            TYPET$CR$END OF HOURS RUN
14632  76455  64400
14633  20460  05020
14634  65626  30062
14635  65567  70000
14636  65000  10041            TYPET$CR$TIME$CR$DAY
14637  76645  15545
14640  76444  17100
14641  00000  00077
14642  65000  10167            TYPE-DEC  W(IDAY)
14643  00030  62220
14644  65000  10041            TYPET$CR$HOUR
14645  76502  06562
14646  00007  70000
14647  65000  10167            TYPE-DEC  W(IHOUR)
14650  00030  62217
14651  65000  10041            TYPET$CR$MINUTE
14652  76555  15665
14653  64450  00000
14654  00007  70000
14655  65000  10167            TYPE-DEC  W(IMINUTE)
14656  00030  62216
14657  65000  10041            TYPET$CR$SECOND
14660  76634  54320
14661  56440  00000
14662  00007  70000
14663  65000  10167            TYPE-DEC  W(ISEC)
14664  00030  62215
14665  65000  10041            TYPET$CR$SET ATTENUATORS FOR NOISE
14666  76634  56400
14667  41646  44556
14670  65416  42062
14671  63004  62062
14672  00562  05163
14673  45007  70000
14674  61300  14676  EXBHB     JP   EXBHA*KEY3
14675  61000  14674            JP   EXBHB
14676  65000  12341  EXBHA     GNOISE    INPUT*MTN
14677  65000  10041            TYPET$CR$NOISE SAMPLE TAKEN
14700  76562  05163
14701  45006  34155
14702  60544  50064
14703  41534  55600
14704  00007  70000
14705  65000  10041            TYPET$CR$SET ATTENUATORS FOR SIGNAL
14706  76634  56400
14707  41646  44556
```

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14710  65416  42062
14711  63004  62062
14712  00635  14756
14713  41547  70000
14714  61300  14732  EXBHC    JP    EXBH*KEY3
14715  11530  62212           ENT   A*W(RESET)*ANOT
14716  61000  14714           JP    EXBHC
14717  65000  10041           TYPETSCRSRESET TAKING ANOTHER NOISE SAMPLE
14720  76624  56345
14721  64006  44153
14722  51564  70041
14723  56206  45045
14724  62005  62051
14725  63450  06341
14726  55605  44500
14727  00007  70000
14730  61000  14676           JP    EXBHA
14731  61000  14714           JP    EXBHC
14732  61200  14735  EXBH     JP    EXBC*KEY2
14733  65000  13765           RJP   POUTPUT
14734  61000  14736           JP    EXBG
14735  65000  13720  EXBC     RJP   PTTY
14736  11030  62227  EXBG     ENT   A*W(LASHOTME)
14737  20030  15013           ADD   A*W(WAITIME)
14740  21730  00160           SUB   A*W(160)*ANEG      IS IT TIME TO START HOUR
14741  61000  14736           JP    EXBG
14742  61000  14401           JP    EXAA              START NEW HOURS RUN
14743  61010  14275           RETURN
                      ADBF     PROGRAM
14744  61522  61522  ADBF     U-TAGGARBAGE*GARBAGE
14745  00000  00140  FLIP1    140
14746  00000  00010  FLIP2    10                      DISABLE INPUT TTY
14747  00000  00003  FLIP3    3                       ENABLE PRINTER---TTY
14750  00000  53255  MTCD     53255                   WRITE ON TAPE UNIT 1
14751  00000  53257           53257                   WRITE ON UNIT 3
14752  00000  53256           53256                   WRITE ON IUNIT 2
14753  00004  00000  MCMT     4    0                  REQUST CONTROL OF MAG TAPES
14754  00000  00400  MAD      400                     MASTER CLEAR A/D
14755  00000  00015  MTI      15                      CR
14756  00000  00012           12                      LF
14757  00000  00111           111                     I
14760  00000  00115           115                     M
14761  00000  00120           120                     P
14762  00000  00040           040                     SP
14763  00000  00103           103                     C
14764  00000  00117           117                     O
14765  00000  00116           116                     N
14766  00000  00104           104                     D
14767  00001  47255  RW1      147255                  REWIND UNIT 1 NO WRITE
14770  00001  47257  RW3      147257                  REWIND UNIT 3 NO WRITE
14771  00001  77255  RS1      177255                  REQUEST STATUS UNIT 1
14772  00001  77256  RS2      177256                  REQUEST STATUS UNIT 2
14773  00001  77257  RS3      177257                  REQUEST STATUS UNIT3
14774  00001  77254  RS4      177254                  REQUEST STATUS UNIT4
14775  00001  47256  RWCW2    147256                  REWIND UNIT 2 NO WRITE
14776  00001  46314  RWCW4    146314                  REWIND, DISABLE WRITE ON UNIT 4
14777  00000  53256  PMCB     53256
15000  00000  73255  WEOF     73255                   EOF ON UNIT 1
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15001  00000  73256                73256
15002  00000  73257                73257
15003  00000  72314                72314
15004  00000  00243  SDVEL         243
15005  00000  00001  STEP1         1
15006  00000  00002  STEP2         2                    SANBORN STEPS
15007  00000  00004  STEP3         4
15010  65000  12677  TELYCALL      RJP  GTTY            FOR TELETYPE INTR
15011  65000  10641  MAGCALL       RJP  PSTATUS
15012  65000  14242  SHOTCALL      RJP  SHOTOFF
15013  00013  20000  WAITIME       368640D
15014  61535  61522  SPLED         U-TAGSHTDTA+10D*GARBAGE
15015  62165  62165  SPLE1         U-TAGTRST*TRST
15016  31175  15024  MTBF5         U-TAGLEV+62490*LEV
15017  45347  15024  MTBF10        U-TAGLEV+124990*LEV
15020  14766  14755  MTIC          U-TAGMTI+9D*MTI
15021  61521  15024  MTBF15        U-TAGLEV+187490*LEV
15022  61631  61535  PRODATABF     U-TAGCALIN2+9D*RANGE
15023  61714  61644  IDBUF         U-TAGID+40D*ID
                      LEV          RESERVE   187500
                      GARBAGE      RESERVE   1
                      SHTDTA       RESERVE   10D
                      RANGE        RESERVE   1
                      SIG          RESERVE   10D
                      PROPL        RESERVE   10D
                      SNTAB        RESERVE   10D
                      NOS          RESERVE   10D
                      PEAK         RESERVE   10D
                      CALIN2       RESERVE   10D
                      CALIN        EQUALS    CALIN2
                      CALPK        RESERVE   10D
                      ID           RESERVE   40D
                      AGSL         RESERVE   10D
                      SL178        RESERVE   10D
                      SLE1         RESERVE   10D
                      SLE2         RESERVE   10D
                      SLE3         RESERVE   10D
                      SLE4         RESERVE   10D
                      SLE5         RESERVE   10D
                      NAT          RESERVE   10D
                      NATT         RESERVE   10D
                      ATTEN        RESERVE   10D
                      SQIN         RESERVE   10D
                      CATT         RESERVE   10D
                      GSXI         RESERVE   10D
                      GSXIN        RESERVE   10D
                      GARBAGE2     RESERVE   1
                      GTHRESH      RESERVE   10D
                      GID          RESERVE   5
                      GNATT        RESERVE   5
                      TESTY        RESERVE   1
                      ETL          RESERVE   1
                      SSBC         RESERVE   1
                      MFLAG        RESERVE   1
                      SSSS         RESERVE   1
                      ICMSEC       RESERVE   1
                      MTN          RESERVE   1
                      SHTCTR       RESERVE   1
```

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TRST        RESERVE   1
LTAPE       RESERVE   1
PAR         RESERVE   1
SA          RESERVE   1
SQ          RESERVE   1
FORCE       RESERVE   1
CTSNOS      RESERVE   1
INI         RESERVE   1
CPHP        RESERVE   1
SOA         RESERVE   1
THAT        RESERVE   3
MONTH       RESERVE   1
DAY         RESERVE   1
HOUR        RESERVE   1
MIN         RESERVE   1
SEC         RESERVE   1
DEPTH       RESERVE   1
CODEWORD    RESERVE   1
REPRATE     RESERVE   1
RESET       RESERVE   1
LASTIME     RESERVE   1
ICCYS       RESERVE   1
ISEC        RESERVE   1
IMINUTE     RESERVE   1
IHOUR       RESERVE   1
IDAY        RESERVE   1
IMONTH      RESERVE   1
RLM         RESERVE   1
RLMTTY      RESERVE   1
RWT4        RESERVE   1
HOURCNTR    RESERVE   1
CHANGE      RESERVE   1
LASHOTME    RESERVE   1
TESTIME     RESERVE   1
TMP         RESERVE   1
WORDS       RESERVE   1
ITEMS       RESERVE   1
TEMP        RESERVE   1
STRE        RESERVE   1
TEMP3       RESERVE   1
GSN         RESERVE   1
GTIMER      RESERVE   1
TEMPHOLD    RESERVE   1
FTEMP       RESERVE   1
BHOLD       RESERVE   1
SVB7        RESERVE   1
K           RESERVE   1
R           RESERVE   1
S           RESERVE   1
ALPHA       RESERVE   1
ZETA        RESERVE   1
SERISCNTR   RESERVE   1
THCTR1      RESERVE   3
STATWRD     RESERVE   1
TFLAG       RESERVE   1
TCLOCK      RESERVE   1
INCLOCK     RESERVE   1
CFLAG       RESERVE   1
```

```
CFIVE     RESERVE   30D
DUMP      RESERVE   1
GHIGH     EQUALS    LEV
GSLO      EQUALS    LEV+1875D
TYPECELL1 RESERVE   1
TYPECELL2 RESERVE   1
FORMCELL  RESERVE   1
TPL       RESERVE   220D
SNRAT     RESERVE   220D
PLAB      RESERVE   24D
CYCLEFLAG RESERVE   1
BANG      RESERVE   90D
BANGTIME  RESERVE   1
          END-PROC  EXECP1
```

APPENDIX C

```
                                    SYSTEM
                          PHASE22   PROGRAM   PARKA*14AUG68
                                    LOC-DD
                                    TABLESTORE*H*400*5
                                    END-TABLE STORE
                                    TABLESUMCL*H*150*5
                                    END-TABLE SUMCL
                                    TABLETOTAL*H*1*5
                                    END-TABLE TOTAL
                                    TABLESLAVG*H*150*5
                                    END-TABLE SLAVG
                                    TABLEAVGE5*H*1*5
                                    END-TABLE AVGE5
                                    VRBL K*FXW
                                    VRBL R*FXW
                                    VRBL TEMP3*FXW
                                    VRBL S*FXW
                                    VRBL MINSFLAG*FXW
                                    END-LOC-DD
12037  00000  00000                 PROCEDURE SNRATIO2
12040  12200  00000                 ENT  B2*0
12041  11032  64564  PROCS1        ENT  A*W(NOS+B2)
12042  11032  64603                 ENT  Q*W(PEAK+B2)
12043  65000  14323                 RJP  SNCORRECT
12044  14032  64455                 STR  Q*W(SIG1+B2)
12045  71200  00011                 BSK  B2*11
12046  61000  12041                 JP   PROCS1
12047  61010  12037                 RETURN
                                    END-PROC  SNRATIO2
12050  00000  00000                 PROCEDURE PROPLOSS2
12051  12200  00000                 ENT  B2*0
12052  12100  00000                 ENT  B1*0
12053  11030  70752                 ENT  A*W(CODEWORD)
12054  21500  00001                 SUB  A*1*ANOT
12055  61000  12071                 JP   PROP1A
12056  21500  00001                 SUB  A*1*ANOT
12057  61000  12101                 JP   PROP2A
12060  21500  00001                 SUB  A*1*ANOT
12061  61000  12111                 JP   PROP3A
12062  21500  00001                 SUB  A*1*ANOT
12063  61000  12121                 JP   PROP4A
12064  21500  00001                 SUB  A*1*ANOT
12065  61000  12131                 JP   PROP5A
12066  21500  00001                 SUB  A*1*ANOT
```

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12067  61000  12141          JP    PROP6A
12070  61000  12151          JP    PROP7A
12071  10032  64730  PROP1A  ENT   Q*W(AGSL+B2)
12072  27031  64455          SUB   Q*W(SIG1+B1)
12073  14031  64474          STR   Q*W(PROPL2+B1)
12074  71200  00011          BSK   B2*11
12075  12000  00000          NO-OP
12076  71130  70775          BSK   B1*W(ITEMS)
12077  61000  12071          JP    PROP1A
12100  61010  12050          RETURN
12101  10032  64742  PROP2A  ENT   Q*W(SL178+B2)
12102  27031  64455          SUB   Q*W(SIG1+B1)
12103  14031  64474          STR   Q*W(PROPL2+B1)
12104  71200  00011          BSK   B2*11
12105  12000  00000          NO-OP
12106  71130  70775          BSK   B1*W(ITEMS)
12107  61000  12101          JP    PROP2A
12110  61000  12100          RETURN
12111  10032  64754  PROP3A  ENT   Q*W(SLE1+B2)
12112  27031  64455          SUB   Q*W(SIG1+B1)
12113  14031  64474          STR   Q*W(PROPL2+B1)
12114  71200  00011          BSK   B2*11
12115  12000  00000          NO-OP
12116  71130  70775          BSK   B1*W(ITEMS)
12117  61000  12111          JP    PROP3A
12120  61000  12100          RETURN
12121  10032  64766  PROP4A  ENT   Q*W(SLE2+B2)
12122  27031  64455          SUB   Q*W(SIG1+B1)
12123  14031  64474          STR   Q*W(PROPL2+B1)
12124  71200  00011          BSK   B2*11
12125  12000  00000          NO-OP
12126  71130  70775          BSK   B1*W(ITEMS)
12127  61000  12121          JP    PROP4A
12130  61000  12100          RETURN
12131  10032  65000  PROP5A  ENT   Q*W(SLE3+B2)
12132  27031  64455          SUB   Q*W(SIG1+B1)
12133  14031  64474          STR   Q*W(PROPL2+B1)
12134  71200  00011          BSK   B2*11
12135  12000  00000          NO-OP
12136  71130  70775          BSK   B1*W(ITEMS)
12137  61000  12131          JP    PROP5A
12140  61000  12100          RETURN
12141  10032  65012  PROP6A  ENT   Q*W(SLE4+B2)
12142  27031  64455          SUB   Q*W(SIG1+B1)
12143  14031  64474          STR   Q*W(PROPL2+B1)
12144  71200  00011          BSK   B2*11
12145  12000  00000          NO-OP
12146  71130  70775          BSK   B1*W(ITEMS)
12147  61000  12141          JP    PROP6A
12150  61000  12100          RETURN
12151  10032  65024  PROP7A  ENT   Q*W(SLE5+B2)
12152  27031  64455          SUB   Q*W(SIG1+B1)
12153  14031  64474          STR   Q*W(PROPL2+B1)
12154  71200  00011          BSK   B2*11
12155  12000  00000          NO-OP
12156  71130  70775          BSK   B1*W(ITEMS)
12157  61000  12151          JP    PROP7A
12160  61000  12100          RETURN
```

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                                        END-PROC  PROPLOSS2
12161  00000  00000                     PROCEDURE ATTENLOSS
12162  12100  00000                     ENT  B1*0
12163  10000  00001                     ENT  Q*1
12164  34030  64370                     RPL  Y+Q*W(NOP)
12165  10030  64350                     ENT  Q*W(RANGE)
12166  26030  64372                     ADD  Q*W(SUMR)
12167  14030  64372                     STR  Q**W(SUMR)
12170  10030  64350                     ENT  Q*W(RANGE)
12171  22030  64350                     MUL  W(RANGE)
12172  07000  00030                     LSH  AQ*30
12173  65000  11514                     RJP  FIXFLT
12174  11030  64371                     ENT  A*W(ASUMR2)
12175  10030  64513                     ENT  Q*W(QSUMR2)
12176  65000  10647                     RJP  FLAD
12177  65000  11412                     RJP  FLSTR
12200  15030  64371                     STR  A*W(ASUMR2)
12201  14030  64513                     STR  Q*W(QSUMR2)
12202  10030  64350                     ENT  Q**W(RANGE)
12203  05000  00014                     LSH  Q*12D
12204  11000  00000                     ENT  A*0
12205  23000  00144                     DIV  100D
12206  65000  14026                     RJP  CONLOGIT
12207  26000  00024                     ADD  Q*20D
12210  14030  70776                     STR  Q*W(TEMP)
12211  10031  64526  CONV               ENT  Q*W(PROPL+B1)
12212  27030  70776                     SUB  Q*W(TEMP)
12213  22030  64350                     MUL  W(RANGE)
12214  07000  00030                     LSH  AQ*30
12215  65000  11514                     RJP  FIXFLT
12216  11031  65252                     ENT  A*W(ASUMRNW+B1)
12217  10031  65264                     ENT  Q*W(QSUMRNW+B1)
12220  65000  10647                     RJP  FLAD
12221  65000  11412                     RJP  FLSTR
12222  15031  65252                     STR  A*W(ASUMRNW+B1)
12223  14031  65264                     STR  Q*W(QSUMRNW+B1)
12224  71130  70775                     BSK  B1*W(ITEMS)
12225  61000  12211                     JP   CONV
12226  10031  64526  SECOND             ENT  Q*W(PROPL+B1)
12227  27030  70776                     SUB  Q*W(TEMP)
12230  26031  64443                     ADD  Q*W(NW+B1)
12231  14031  64443                     STR  Q*W(NW+B1)
12232  71130  70775                     BSK  B1*W(ITEMS)
12233  61000  12226                     JP   SECOND
12234  10031  64474  CONV1              ENT  Q*W(PROPL2+B1)
12235  27030  70776                     SUB  Q*W(TEMP)
12236  22030  64350                     MUL  W(RANGE)
12237  07000  00030                     LSH  AQ*30
12240  65000  11514                     RJP  FIXFLT
12241  11031  65276                     ENT  A*W(ASUMRNW2+B1)
12242  10031  65310                     ENT  Q*W(QSUMRNW2+B1)
12243  65000  10647                     RJP  FLAD
12244  65000  11412                     RJP  FLSTR
12245  15031  65276                     STR  A*W(ASUMRNW2+B1)
12246  14031  65310                     STR  Q*W(QSUMRNW2+B1)
12247  71130  70775                     BSK  B1*W(ITEMS)
12250  61000  12234                     JP   CONV1
12251  10031  64474  TWICE              ENT  Q*W(PROPL2+B1)
```

```
12252  27030  70776          SUB   Q*W(TEMP)
12253  26031  64431          ADD   Q*W(NW2+B1)
12254  14031  64431          STR   Q*W(NW2+B1)
12255  71130  70775          BSK   B1*W(ITEMS)
12256  61000  12251          JP    TWICE
12257  10030  64372   ALT0   ENT   Q*W(SUMR)
12260  22030  64372          MUL   W(SUMR)
12261  07000  00030          LSH   AQ*30
12262  65000  11514          RJP   FIXFLT
12263  65000  11412          RJP   FLSTR
12264  15030  65355          STR   A*W(ASUMR)
12265  14030  65354          STR   Q*W(QSUMR)
12266  11000  00000          ENT   A*0
12267  10030  64370          ENT   Q*W(NOP)
12270  07000  00036          LSH   AQ*36
12271  65000  11514          RJP   FIXFLT
12272  11030  64371          ENT   A*W(ASUMR2)
12273  10030  64513          ENT   Q*W(QSUMR2)
12274  65000  11170          RJP   FLMP
12275  11030  65355          ENT   A*W(ASUMR)
12276  10030  65354          ENT   Q*W(QSUMR)
12277  65000  11061          RJP   FLSB
12300  65000  11412          RJP   FLSTR
12301  15030  65352          STR   A*W(ADIVISOR)
12302  14030  65353          STR   Q*W(QDIVISOR)
12303  11000  00000          ENT   A*0
12304  10030  64370          ENT   Q*W(NOP)
12305  07000  00036          LSH   AQ*36
12306  65000  11514          RJP   FIXFLT
12307  65000  11412          RJP   FLSTR
12310  15030  65351          STR   A*W(ANOP)
12311  14030  65350          STR   Q*W(QNOP)
12312  10030  64372   ALT01  ENT   Q*W(SUMR)
12313  22031  64443          MUL   W(NW+B1)
12314  07000  00030          LSH   AQ*30
12315  65000  11514          RJP   FIXFLT
12316  65000  11412          RJP   FLSTR
12317  15030  65347          STR   A*W(ASUBT)
12320  14030  65346          STR   Q*W(QSUBT)
12321  10030  65350          ENT   Q*W(QNOP)
12322  11030  65351          ENT   A*W(ANOP)
12323  65000  10643          RJP   FLENT
12324  11031  65252          ENT   A*W(ASUMRNW+B1)
12325  10031  65264          ENT   Q*W(QSUMRNW+B1)
12326  65000  11170          RJP   FLMP
12327  11030  65347          ENT   A*W(ASUBT)
12330  10030  65346          ENT   Q*W(QSUBT)
12331  65000  11061          RJP   FLSB
12332  11030  65352          ENT   A*W(ADIVISOR)
12333  10030  65353          ENT   Q*W(QDIVISOR)
12334  65000  11276          RJP   FLDV
12335  65000  11657          RJP   FLTFIX
12336  03000  00017          RSH   AQ*17
12337  14031  64417          STR   Q*W(COEFF+B1)
12340  11000  00000          ENT   A*0
12341  10030  64372          ENT   Q*W(SUMR)
12342  07000  00033          LSH   AQ*33
12343  65000  11514          RJP   FIXFLT
```

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12344  11031  65252          ENT  A*W(ASUMRNW+B1)
12345  10031  65264          ENT  Q*W(QSUMRNW+B1)
12346  65000  11170          RJP  FLMP
12347  65000  11412          RJP  FLSTR
12350  14031  65334          STR  Q*W(QRRNW+B1)
12351  15031  65322          STR  A*W(ARRNW+B1)
12352  11000  00000          ENT  A*0
12353  10031  64043          ENT  Q*W(NW+B1)
12354  07000  00033          LSH  AQ*33
12355  65000  11514          RJP  FIXFLT
12356  10030  64513          ENT  Q*W(QSUMR2)
12357  11030  64371          ENT  A*W(ASUMR2)
12360  65000  11170          RJP  FLMP
12361  11031  65322          ENT  A*W(ARRNW+B1)
12362  10031  65334          ENT  Q*W(QRRNW+B1)
12363  65000  11061          RJP  FLSB
12364  11030  65352          ENT  A*W(ADIVISOR)
12365  10030  65353          ENT  Q*W(QDIVISOR)
12366  65000  11276          RJP  FLDV
12367  65000  11657          RJP  FLTFIX
12370  03000  00025          RSH  AQ*25
12371  14031  64373          STR  Q*W(INTERCEPT+B1)
12372  71130  70775          BSK  B1*W(ITEMS)
12373  61000  12312          JP   ALT01
12374  10030  64372  ALT02   ENT  Q*W(SUMR)
12375  22031  64431          MUL  W(NW2+B1)
12376  07000  00030          LSH  AQ*30
12377  65000  11514          RJP  FIXFLT
12400  65000  11412          RJP  FLSTR
12401  15030  65347          STR  A*W(ASUBT)
12402  14030  65346          STR  Q*W(QSUBT)
12403  10031  65310          ENT  Q*W(QSUMRNW2+B1)
12404  11031  65276          ENT  A*W(ASUMRNW2+B1)
12405  65000  10643          RJP  FLENT
12406  10030  65350          ENT  Q*W(QNOP)
12407  11030  65351          ENT  A*W(ANOP)
12410  65000  11170          RJP  FLMP
12411  11030  65347          ENT  A*W(ASUBT)
12412  10030  65346          ENT  Q*W(QSUBT)
12413  65000  11061          RJP  FLSB
12414  11030  65352          ENT  A*W(ADIVISOR)
12415  10030  65353          ENT  Q*W(QDIVISOR)
12416  65000  11276          RJP  FLDV
12417  65000  11657          RJP  FLTFIX
12420  03000  00017          RSH  AQ*17
12421  14031  64514          STR  Q*W(COEFF2+B1)
12422  11000  00000          ENT  A*0
12423  10030  64372          ENT  Q*W(SUMR)
12424  07000  00033          LSH  AQ*33
12425  65000  11514          RJP  FIXFLT
12426  10031  65310          ENT  Q*W(QSUMRNW2+B1)
12427  11031  65276          ENT  A*W(ASUMRNW2+B1)
12430  65000  11170          RJP  FLMP
12431  65000  11412          RJP  FLSTR
12432  14031  65334          STR  Q*W(QRRNW+B1)
12433  15031  65322          STR  A*W(ARRNW+B1)
12434  11000  00000          ENT  A*0
12435  10031  64431          ENT  Q*W(NW2+B1)
```

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12436  07000  00033            LSH   AQ*33
12437  65000  11514            RJP   FIXFLT
12440  10030  64513            ENT   Q*W(QSUMR2)
12441  11030  64371            ENT   A*W(ASUMR2)
12442  65000  11170            RJP   FLMP
12443  11031  65322            ENT   A*W(ARRNW+B1)
12444  10031  65334            ENT   Q*W(QRRNW+B1)
12445  65000  11061            RJP   FLSB
12446  11030  65352            ENT   A*W(ADIVISOR)
12447  10030  65353            ENT   Q*W(QDIVISOR)
12450  65000  11276            RJP   FLDV
12451  65000  11657            RJP   FLTFIX
12452  03000  00025            RSH   AQ*25
12453  14031  64405            STR   Q*W(INTERCEPT2+B1)
12454  71130  70775            BSK   B1*W(ITEMS)
12455  61000  12374            JP    ALT02
12456  61010  12161            RETURN
                                END-PROC  ATTENLOSS
12457          00000            PROCEDURE POTTERPROP
12460          00000            ENT   B1*0
12461  12200   00000            ENT   B2*0
12462  10030  71007            ENT   Q*W(K)
12463  22000  00005            MUL   5
12464  14030  00162            STR   Q*W(00162)
12465  10030  00162  LUPPE1    ENT   Q*W(00162)
12466  26010  00161            ADD   Q*L(00161)
12467  14030  00162            STR   Q*W(00162)
12470  10031  65101            ENT   Q*W(ATTEN+10D+B1)
12471  27000  00001            SUB   Q*1
12472  22000  00240            MUL   240
12473  14030  71000            STR   Q*W(TEMP3)
12474  10032  65357            ENT   Q*W(SLAVG+B2)
12475  27031  64634            SUB   Q*W(CALIN2+10D+B1)
12476  03000  00006            RSH   AQ*6
12477  65000  14026            RJP   CONLOGIT
12500  26030  71000            ADD   Q*W(TEMP3)
12501  27031  64622            SUB   Q*W(CALIN+B1)
12502  11031  66742            ENT   A*W(GSXIDB+B1)
12503  16130  70773            STR   B1*W(TMP)
12504  65000  14323            RJP   SNCORRECT
12505  12130  70773            ENT   B1*W(TMP)
12506  11031  64742            ENT   A*W(SL178+B1)
12507  21000  00167            SUB   A*167
12510  33032  66747            STR   A-Q*W(PROPL30+B2)
12511  71100  00004            BSK   B1*4
12512  61000  12465            JP    LUPPE1
12513  11430  71437            ENT   A*W(MIN5FLAG)*AZERO
12514  61000  12516            JP    LUPPE2
12515  61010  12457            RETURN
12516  10031  66735  LUPPE2    ENT   Q*W(AVGE5+B1)
12517  22000  00314            MUL   314
12520  03000  00006            RSH   AQ*6
12521  65000  14026            RJP   CONLOGIT
12522  26030  71000            ADD   Q*W(TEMP3)
12523  27031  64634            SUB   Q*W(CALIN2+10D+B1)
12524  11031  66742            ENT   A*W(GSXIDB+B1)
12525  16130  70773            STR   B1*W(TMP)
12526  65000  14323            RJP   SNCORRECT
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12527  12130  70773            ENT  B1*W(TMP)
12530  11031  64742            ENT  A*W(SL178+B1)
12531  27000  00166            SUB  Q*166
12532  33031  70325            STR  A-Q*W(PROPL5+B1)
12533  71100  00004            BSK  B1*4
12534  61000  12516            JP   LUPPE2
12535  61000  12515            RETURN
                                END-PROC  POTTERPROP
12536  00000  00000            PROCEDURE PHASE2M
12537  65000  14177            RJP  PKSQIN
12540  65000  14535            RJP  SNRATIO
12541  65000  14574            RJP  PROPLOSS
12542  11030  70752            ENT  A*W(CODEWORD)
12543  21400  00003            SUB  A*3*AZERO
12544  61010  12536            RETURN
12545  65000  12037            RJP  SNRATI02
12546  65000  12050            RJP  PROPLOSS2
12547  65000  12161            RJP  ATTENLOSS
12550  61000  12544            RETURN
                                END-PROC  PHASE2M
12551  00000  00000            PROCEDURE SLIDE
12552  16410  12655
12553  16310  12654
                                LOC-INDEX J*L
12554  12400  00000  SLA       VARY J*THRU*13500*BY*1500
12555  61000  12557
12556  12404  00226
12557  11000  02506
12560  21004  00000
12561  60700  12566
12562  11004  00000            IF   R*EQ*J*THEN*GOTO*SLB
12563  21030  71010
12564  60400  12567
12565  61000  12556            END  SLA
12566  61000  12575            GOTO SLC
12567  16030  71007  SLB       SET  SLAVG*AND*AVGE5*AND*S*AND*K*TO*0
12570  16030  71011
12571  70100  00005
12572  16030  66735
12573  70100  01356
12574  16030  65357
12575  11000  00017  SLC       IF   S*EQ*15D*THEN*SET*S*TO*0
12576  21030  71011
12577  60500  12601
12600  16030  71011
12601  12400  00000  LSA       VARY J*THRU*4
12602  12300  00000  LSB       VARY L*THRU*39D
12603  70300  00005            SET  STORE(J,L)*TO*(STORE(J,L))(STORE(J,L))(62)/10000
12604  12603  00000
12605  16410  12606
12606  12606  00000
12607  10036  71463
12610  22036  71463
12611  22000  00062
12612  03000  00014
12613  14036  71463
12614  71300  00047            END  LSB
12615  61000  12603
```

```
12616  71400  00004              END  LSA
12617  61000  12602
12620  12400  00000  SLD         VARY J*THRU*4
12621  12530  71011              SET  SUMCL(J,S)*T0*0
12622  70300  00005
12623  12605  00000
12624  16410  12625
12625  12606  00000
12626  16036  71773
12627  12300  00000  SLE         VARY L*THRU*39D
12630  70300  00005              SET  SUMCL(J,S)*T0*SUMCL(J,S)+STORE(J,L)
12631  12603  00000
12632  16410  12633
12633  12606  00000
12634  11036  71463
12635  12530  71011
12636  70300  00005
12637  12605  00000
12640  16410  12641
12641  12606  00000
12642  24036  71773
12643  71300  00047              END  SLE
12644  61000  12630
12645  71400  00004              END  SLD
12646  61000  12621
12647  11000  00016              IF   R*LT*14D*THEN*SET*S*T0*S+1*THEN*RETURN
12650  21030  71010
12651  60400  12657
12652  60700  12657
12653  36030  71011
12654  12300  00000
12655  12400  00000
12656  61010  12551
12657  12400  00000  SLF         VARY J*THRU*4
12660  16034  72106              SET  TOTAL(J,0)*T0*0
12661  12300  00000  SLG         VARY L*THRU*14D
12662  70300  00005              SET  TOTAL(J,0)*T0*TOTAL(J,0)+SUMCL(J,L)
12663  12603  00000
12664  16410  12665
12665  12606  00000
12666  11036  71773
12667  24034  72106
12670  71300  00016              END  SLG
12671  61000  12662
12672  10034  72106              SET  SLAVG(J,K)*T0*TOTAL(J,0)
12673  12530  71007
12674  70300  00005
12675  12605  00000
12676  16410  12677
12677  12606  00000
12700  14036  65357
12701  71400  00004              END  SLF
12702  61000  12660
12703  16030  71437              CL   W(MIN5FLAG)
12704  11000  00225              IF   R*NOT*149D*THEN*GOTO*SLH
12705  21030  71010
12706  60500  12736
12707  12400  00000  SLJ         VARY J*THRU*4
```

```
12710  12300  00000  SLK      VARY L*THRU*135D*BY*15D
12711  61000  12713
12712  12303  00017
12713  11000  00207
12714  21003  00000
12715  60700  12725
12716  70300  00005           SET  AVGE5(J,0)*T0*AVGE5(J,0)+SLAVG(J,L)
12717  12603  00000
12720  16410  12721
12721  12606  00000
12722  11036  65357
12723  24034  66735
12724  61000  12712           END  SLK
12725  11034  66735           SET  AVGE5(J,0)*T0*AVGE5(J,0)/10D
12726  03000  00036
12727  23000  00012
12730  14034  66735
12731  71400  00004           END  SLJ
12732  61000  12710
12733  10000  00001           SET  MIN5FLAG*T0*1
12734  14030  71437
12735  61000  12750           GOTO SLN
12736  12400  00453  SLH      VARY J*FROM*299D*THRU*1349D*BY*150D
12737  61000  12741
12740  12404  00226
12741  11000  02505
12742  21004  00000
12743  60700  12750
12744  11030  71010           IF   J*EQ*R*THEN*GOTO*SLL
12745  21004  00000
12746  60400  12766
12747  61000  12740           END  SLH
12750  65000  12457  SLN      RJP  POTTERPROP
12751  11030  71437           IF   MIN5FLAG*EQ*0*THEN*GOTO*SLT
12752  60400  12763
12753  12700  00047           ENT  B7*39D
12754  10037  70333  SLP      ENT  Q*W(PLVSRG5MIN+B7)
12755  14037  70340           STR  Q*W(PLVSRG5MIN+B7+5)
12756  72700  12754           BJP  B7*SLP
12757  12700  00004           ENT  B7*4
12760  10037  70325  SLV      ENT  Q*W(PROPL5+B7)
12761  14037  70333           STR  Q*W(PLVSRG5MIN+B7)
12762  72700  12760           BJP  B7*SLV
12763  36030  71011  SLT      SET  S*T0*S+1
12764  36030  71007           SET  K*T0*K+1
12765  61000  12654           RETURN
12766  12400  00000  SLL      VARY J*THRU*4
12767  12300  00016  SLM      VARY L*FROM*14D*THRU*149D*BY*15D
12770  61000  12772
12771  12303  00017
12772  11000  00225
12773  21003  00000
12774  60700  13004
12775  70300  00005           SET  AVGE5(J,0)*T0*AVGE5(J,0)+SLAVG(J,L)
12776  12603  00000
12777  16410  13000
13000  12606  00000
13001  11036  65357
```

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13002  24034  66735
13003  61000  12771          END   SLM
13004  11034  66735          SET   AVGE5(J,0)*T0*AVGE5(J,0)/10D
13005  03000  00036
13006  23000  00012
13007  14034  66735
13010  71400  00004          END   SLL
13011  61000  12767
13012  10000  00001          SET   MIN5FLAG*T0*1
13013  14030  71437
13014  61000  12750          GOTO  SLN
                            END-PROC  SLIDE
13015  61000  00000  CW      JP    0
13016  13130  71423          EX-COM     SAND*0*FORCE
13017  13130  17612          EX-COM     SAND*W(STEP1)*FORCE
13020  12200  00000          ENT   B2*0
13021  10032  65062  GDBB    ENT   Q*W(NATT+10D+B2)
13022  27000  00001          SUB   Q*1
13023  22000  00240          MUL   240
13024  14032  65036          STR   Q*W(NAT+B2)
13025  10032  65144  GDB     ENT   Q*W(GSXI+10D+B2)
13026  22000  00020          MUL   20
13027  03000  00006          RSH   AQ*6
13030  65000  14026          RJP   CONLOGIT
13031  26032  65036          ADD   Q*W(NAT+B2)
13032  27032  64634          SUB   Q*W(CALIN2+10D+B2)
13033  14032  66742          STR   Q*W(GSXIDB+B2)
13034  71200  00004          BSK   B2*4
13035  61000  13021          JP    GDBB
13036  16030  71437          CL    W(MIN5FLAG)
13037  16030  71010          CL    W(R)                    START OF CW PERIOD
13040  16030  71441  CW6     CL    W(COUNT240)             2-SECOND COUNTER
13041  11030  00160  CW1     ENT   A*W(160)                CLOCK
13042  20000  00063          ADD   A*51D                   50 MILLISEC RATE
13043  15030  71442          STR   A*W(TIMESTORE)
13044  12100  00000          ENT   B1*0
13045  73270  17636          IN    SAMPLE*W(CWBUFLIM)
13046  13261  13250  CW40    EX-COM     SAMPLE*W(ADCODE+B1)
13047  70000  00004          RPT   4
13050  12000  00000          NO-OP
13051  71100  00004          BSK   B1*4
13052  61000  13046          JP    CW40
13053  10030  71441          ENT   Q*W(COUNT240)           FIND LOCATION
13054  22000  00005          MUL   5                       IN TABLE STORE
13055  07000  00036          LSH   AQ*30D                  A Q
13056  12170  00000          ENT   B1*A                    STORE+B1 IS FIRST LOCATION
13057  12201  00004          ENT   B2*4+B1                 5 CELLS TO LOAD
13060  12300  00000          ENT   B3*0                    FIRST WORD .S NOW IN FROM A/D
13061  10053  70411  CW9     ENT   Q*LX(CWINBUF+B3)
13062  14031  71463          STR   Q*W(STORE+B1)           PUT IN TABLE
13063  12303  00001          ENT   B3*1+B3                 NEXT WORD
13064  22000  00001          MUL   1                       DELAY FOR A/D
13065  71102  00000          BSK   B1*B2                   ALL 5 WORDS IN
13066  61000  13061          JP    CW9                     NO
13067  36030  71441          RPL   Y+1*W(COUNT240)         IN A REGISTER
13070  21000  00050          SUB   A*40D                   ARE 40 SAMPLES IN
13071  60400  13076          JP    CW12*AZERO              YES
13072  11030  00160  CW13    ENT   A*W(160)                NO
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```
13073  21030  71442          SUB   A*W(TIMESTORE)          TIME TO SAMPLE AGAIN
13074  60700  13072          JP    CW13*ANEG               NO---WAIT
13075  61000  13041          JP    CW1                     YES---DO IT
13076  11030  71010  CW12    ENT   A*W(R)
13077  60500  13112          JP    CW15*ANOT
13100  65000  13165          RJP   CW10                    UPDATE TIME AND SET UP ID BUFFER
13101  16010  70416          STR   B0*L(CWID)              INDICATE RAW DATA
13102  16030  71021          STR   B0*W(TFLAG)
13103  74370  17634          OUT   MAGGY*W(IDBUFER)        WRITE ID
13104  12130  65242          ENT   B1*W(MTN)               WHICH UNIT
13105  13371  17555          EX-COM    MAGGY*W(MTCD+B1)*FORCE
13106  11530  71021  CW16    ENT   A*W(TFLAG)*ANOT
13107  61000  13106          JP    CW16
13110  16030  71021          STR   B0*W(TFLAG)
13111  65000  17364          RJP   TAPEWAIT                WAIT FOR TAPE TO STOP
13112  12700  00307  CW15    MOVE  200D*STORE*RAWOUTAREA
13113  10037  71463
13114  14037  70427
13115  72700  13113
13116  16030  71021          STR   B0*W(TFLAG)
13117  74370  17633          OUT   MAGGY*W(RAWOUTBUF)
13120  12130  65242          ENT   B1*W(MTN)               WHICH UNIT
13121  13371  17555          EX-COM    MAGGY*W(MTCD+B1)*FORCE
13122  65000  12551          RJP   SLIDE
13123  36030  71010          RPL   Y+1*W(R)
13124  11030  71437          ENT   A*W(MIN5FLAG)           END OF 5-MIN PERIOD
13125  60400  13154          JP    CW4*AZERO               NO---GO WAIT FOR END OF 50 MSEC
13126  11030  71010          ENT   A*W(R)                  YES
13127  21000  00001          SUB   A*1                     FIRST SUCH PERIOD
13130  60500  13145          JP    CW19*ANOT               NO
13131  11530  71021  CW30    ENT   A*W(TFLAG)*ANOT
13132  61000  13131          JP    CW30
13133  65000  17364          RJP   TAPEWAIT
13134  36010  70416          RPL   Y+1*L(CWID)             INDICATE PROCESSED DATA IN ID
13135  16030  71021          STR   B0*W(TFLAG)
13136  74370  17634          OUT   MAGGY*W(IDBUFER)        WRITE ID
13137  13370  17557          EX-COM    MAGGY*W(MTCD+2)*FORCE       WRITE ON UNIT 2
13140  11530  71021  CW20    ENT   A*W(TFLAG)*ANOT
13141  61000  13140          JP    CW20
13142  16030  71021          STR   B0*W(TFLAG)
13143  65000  17364          RJP   TAPEWAIT                WAIT FOR TAPE TO STOP
13144  61000  13151          JP    CW31
13145  11530  71021  CW19    ENT   A*W(TFLAG)*ANOT
13146  61000  13145          JP    CW19
13147  65000  17364          RJP   TAPEWAIT
13150  16030  71021          STR   B0*W(TFLAG)
13151  74370  17632  CW31    OUT   MAGGY*W(PROCDTABUF)*FORCE   WRITE PROCESSED DATA
13152  13370  17557          EX-COM    MAGGY*W(MTCD+2)*FORCE       ON UNIT 2
13153  61000  13161          JP    CW7
13154  11030  00160  CW4     ENT   A*W(160)
13155  21030  71442          SUB   A*W(TIMESTORE)          TIME TO SAMPLE AGAIN
13156  60700  13154          JP    CW4*ANEG                NO---WAIT
13157  65000  13323          RJP   TAPESTAT
13160  61000  13040          JP    CW6                     YES---GO DO IT
13161  11030  71010  CW7     ENT   A*W(R)
13162  21000  02506          SUB   A*1350D                 END OF CW PERIOD
13163  60700  13154          JP    CW4*ANEG                NO---SAMPLE SOME MORE
13164  61000  13226          JP    CW18                    YES---WRITE END OF FILE
```

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13165  61000  00000  CW10      JP    0                          SETS UP ID BUFFER
13166  66431  00000            SIL-EX    SHOTCHAN
13167  65000  13626            RJP   UPITIME
13170  66430  00000            RIL-EX    SHOTCHAN
13171  11000  00002            ENT   A*2
13172  15020  70416            STR   A*U(CWID)                  INDICATE PHASE 2
13173  11030  70763            ENT   A*W(IMONTH)
13174  15020  70417            STR   A*U(CWID+1)
13175  11030  70762            ENT   A*W(IDAY)
13176  15010  70417            STR   A*L(CWID+1)
13177  11030  70761            ENT   A*W(IHOUR)
13200  15020  70420            STR   A*U(CWID+2)
13201  11030  70760            ENT   A*W(IMINUTE)
13202  15010  70420            STR   A*L(CWID+2)
13203  11030  70757            ENT   A*W(ISEC)
13204  15020  70421            STR   A*U(CWID+3)
13205  10030  00160            ENT   Q*W(160)
13206  26030  70756            ADD   Q*W(ICCYS)
13207  27030  70755            SUB   Q*W(LASTIME)
13210  22000  00764            MUL   764
13211  26000  00400            ADD   Q*400
13212  03000  00011            RSH   AQ*9D
13213  14010  70421            STR   Q*L(CWID+3)                MILLISECONDS
13214  12100  00012            ENT   B1*10D
13215  12200  00004            ENT   B2*4
13216  11031  65050  CW11      ENT   A*W(NATT+B1)
13217  10031  65067            ENT   Q*W(ATTEN+B1)
13220  15022  70416            STR   A*U(CWID+B2)
13221  14012  70416            STR   Q*L(CWID+B2)
13222  12202  00001            ENT   B2*1+B2                    NEXT VALUE
13223  71100  00016            BSK   B1*14D
13224  61000  13216            JP    CW11                       NO
13225  61000  13165            JP    CW10                       YES---RETURN
13226  11530  71021  CW18      ENT   A*W(TFLAG)*ANOT
13227  61000  13226            JP    CW18
13230  16030  71021            STR   B0*W(TFLAG)
13231  12100  00000            ENT   B1*0
13232  11410  65242            ENT   A*L(MTN)*AZERO
13233  12100  00002            ENT   B1*2                       UNIT 3
13234  13371  17605            EX-COM    MAGGY*W(WEOF+B1)*FORCE      EOF ON RAW DATA UNT
13235  65000  17364            RJP   TAPEWAIT                   WAIT FOR TAPE TO STOP
13236  16030  71021            STR   B0*W(TFLAG)
13237  13370  17606            EX-COM    MAGGY*W(WEOF+1)*FORCE     EOF ON PROCESSED DATA TAP
13240  11530  71021  CW21      ENT   A*W(TFLAG)*ANOT
13241  61000  13240            JP    CW21
13242  16030  71021            STR   B0*W(TFLAG)
13243  13130  17613            EX-COM    SAND*W(STEP2)*FORCE
13244  70000  00500            RPT   500
13245  12000  00000            NO-OP
13246  13130  17614            EX-COM    SAND*W(STEP3)*FORCE
13247  61000  13015            JP    CW                         CW PERIOD OVER---EXIT
13250  00000  00012  ADCODE    12
13251  00000  00013            13
13252  00000  00014            14
13253  00000  00015            15
13254  00000  00016            16
                     PHASE11AA PROGRAM   PARKA*12AUG68
                     PHASE11AA SYS-PROC  PARKA*12AUG68
```

```
LOC-DD
VRBL COUNT240*FXW
VRBL TIMESTORE*FXW
VRBL WAIT3MIN*FXW
VRBL TYPECELL1*FXW*3
VRBL TYPECELL2*FXW*3
VRBL FORMCELL*FXW*3
TABLECONST*H*1*10
FIELDATANC*FXWS*0*1*27D
END-TABLE CONST
TABLEBANG*V*5*18D
FIELDICLOCKCYS*FXWS*0*1
FIELDBSEC*FXWS*1*1
FIELDBMIN*FXWS*2*1
FIELDBHOUR*FXWS*3*1
FIELDBDAY*FXWS*4*1
END-TABLE BANG
VRBL BANGTIME*FXW
VRBL WHY*FXW
VRBL EXS*FXW
VRBL DENOM*FXW
VRBL ELGNA*FXW*27D
VRBL RANGEIND*FXW
VRBL NUMDEN*FXW*27D
VRBL SQNUMDEN*FXW*27D
VRBL TEMPHOLD*FXW
VRBL CHANGE*FXW
VRBL TESTIME*FXW*12D
VRBL LASHOTME*FXW*12D
VRBL SERISCNTR*FXW
VRBL MONTH*FXW
VRBL DAY*FXW
VRBL HOUR*FXW
VRBL MIN*FXW
VRBL SEC*FXW
VRBL TRST*FXW
VRBL LASTIME*FXW
VRBL ICCYS*FXW
VRBL ISEC*FXW
VRBL IMINUTE*FXW
VRBL IHOUR*FXW
VRBL IDAY*FXW
VRBL IMONTH*FXW
VRBL CTSNDS*FXW
VRBL RWT4*FXW
VRBL TESTY      *FXW
VRBL ICMSEC     *FXW
VRBL TH1        *FXW
VRBL MTN        *FXW
VRBL SHTCTR     *FXW
VRBL LTAPE      *FXW
VRBL SA         *FXW
VRBL SQ         *FXW
VRBL PAR        *FXW
VRBL LTU2       *FXW
VRBL FORCE      *FXW
VRBL INI        *FXW
VRBL CPHP       *FXW
```

```
                                    VRBL SQA        *FXW
                                    VRBL THAT       *FXW
                                    VRBL MSEC       *FXW
                                    VRBL DEPTH      *FXW
                                    VRBL CODEWORD   *FXW
                                    VRBL REPRATE    *FXW
                                    VRBL HWK        *FXW
                                    VRBL RESET      *FXW
                                    VRBL TMP*FXW
                                    VRBL WORDS*FXW
                                    VRBL ITEMS*FXW
                                    VRBL TEMP*FXW
                                    VRBL HYDRO*FXW
                                    VRBL STRE*FXW
                                    VRBL TEMP3*FXW
                                    VRBL RLM*FXW
                                    VRBL RLMTTY*FXW
                                    VRBL HOURCNTR*FXW
                                    VRBL TEMPT*FXW
                                    VRBL GSLO*FXW
                                    VRBL SSBC*FXW
                                    VRBL MFLAG*FXW
                                    VRBL ETL*FXW
                                    VRBL SGSS*FXW
                                    VRBL GSN*FXW
                                    VRBL GTIMER*FXW
                                    VRBL FTEMP*FXW
                                    VRBL BHOLD*FXW
                                    VRBL CALIN2*FXW
                                    VRBL ALPHA*FXW
                                    VRBL SDVEL*FXW
                                    VRBL THCTR1*FXW
                                    VRBL ZETA*FXW
                                    VRBL WAITIME*FXW
                                    VRBL TFLAG*FXW
                                    VRBL BEHOLD*FXW
                                    VRBL RANGE*FXW
                                    END-LOC-DD
13255  00000  00000                 PROCEDURE PSTATUS
13256  15030  65247                 STR  A*W(SA)
13257  14030  65250                 STR  Q*W(SQ)
13260  16050  71021                 STR  B0*CPL(TFLAG)
13261  67340  00000                 TERM MAGGY*OUTPUT
13262  66340  00000                 TERM MAGGY*INPUT
13263  17370  71020                 STR  MAGGY*W(STATWRD)
13264  10000  00002                 ENT  Q*2
13265  11000  00002                 ENT  A*2
13266  43530  71020                 COM  MASK*W(STATWRD)*ANOT
13267  61000  13305                 JP   STLT
13270  07000  00005  STLPE          LSH  AQ*5
13271  43530  71020                 COM  MASK*W(STATWRD)*ANOT
13272  61000  13307                 JP   STPE
13273  07000  00001  STLAT          LSH  AQ*1
13274  43530  71020                 COM  MASK*W(STATWRD)*ANOT
13275  61000  13311                 JP   STPE1
13276  07000  00007  STIC           LSH  AQ*7
13277  43530  71020                 COM  MASK*W(STATWRD)*ANOT
13300  61000  13313                 JP   STTB
```

```
13301  11030  65247          ENT  A*W(SA)
13302  10030  65250          ENT  Q*W(SQ)
13303  60000  00000          RIL
13304  61010  13255          RETURN
13305  14030  65245  STLT    STR  Q*W(LTAPE)
13306  61000  13270          JP   STLPE
13307  14030  65246  STPE    STR  Q*W(PAR)
13310  61000  13273          JP   STLAT
13311  14030  65246  STPE1   STR  Q*W(PAR)
13312  61000  13276          JP   STIC
13313  63000  13317  STTB    JP   STTB1*TELO
13314  74030  17626          OUT  TELY*W(MTIC)
13315  13330  17553          EX-COM    TELY*W(FLIP2)*FORCE
13316  13330  17554          EX-COM    TELY*W(FLIP3)*FORCE
13317  11030  65247  STTB1   ENT  A*W(SA)
13320  10030  65250          ENT  Q*W(SQ)
13321  60000  00000          RIL
13322  61000  13304          RETURN
                              END-PROC  STATUS
13323  00000  00000          PROCEDURE TAPESTAT
13324  11530  65245          ENT  A*W(LTAPE)*ANOT
13325  61010  13323          RETURN
13326  16030  65245          STR  B0*W(LTAPE)
13327  16030  71021          STR  B0*W(TFLAG)
13330  13370  17576          EX-COM    MAGGY*W(RS1)*FORCE
13331  11530  71021  JA      ENT  A*W(TFLAG)*ANOT
13332  61000  13331          JP   JA
13333  16030  71021          STR  B0*W(TFLAG)
13334  11530  65245          ENT  A*W(LTAPE)*ANOT
13335  61000  13337          JP   TIS2
13336  61000  13376          JP   RESETT
13337  13370  17577  TIS2    EX-COM    MAGGY*W(RS2)*FORCE
13340  11530  71021  JB      ENT  A*W(TFLAG)*ANOT
13341  61000  13340          JP   JB
13342  16030  71021          STR  B0*W(TFLAG)
13343  11530  65245          ENT  A*W(LTAPE)*ANOT
13344  61000  13346          JP   TIS3
13345  61000  13366          JP   TRW2
13346  13370  17600  TIS3    EX-COM    MAGGY*W(RS3)*FORCE
13347  11530  71021  JC      ENT  A*W(TFLAG)*ANOT
13350  61000  13347          JP   JC
13351  16030  71021          STR  B0*W(TFLAG)
13352  11530  65245          ENT  A*W(LTAPE)*ANOT
13353  61000  13355          JP   TIS4
13354  61000  13407          JP   RESESS
13355  13370  17601  TIS4    EX-COM    MAGGY*W(RS4)*FORCE
13356  11530  71021  JD      ENT  A*W(TFLAG)*ANOT
13357  61000  13356          JP   JD
13360  16030  71021          STR  B0*W(TFLAG)
13361  11530  65245          ENT  A*W(LTAPE)*ANOT
13362  61000  13325          RETURN
13363  36030  70766          RPL  Y+1*W(RWT4)
13364  16030  65245          STR  B0*W(LTAPE)
13365  61000  13325          RETURN
13366  12100  00001  TRW2    ENT  B1*1
13367  65000  13417          RJP  ENDFILEIT              END OF FILE ON UNIT 2
13370  13370  17602          EX-COM    MAGGY*W(RWCW2)*FORCE
13371  11530  71021  JE      ENT  A*W(TFLAG)*ANOT
```

```
13372  61000  13371            JP    JE
13373  16030  71021            STR   B0*W(TFLAG)
13374  16030  65245            STR   B0*W(LTAPE)
13375  61000  13346            JP    TIS3
13376  36010  65242  RESETT    RPL   Y+1*L(MTN)
13377  12100  00000            ENT   B1*0
13400  65000  13417            RJP   ENDFILEIT                 END OF FILE ON UNIT 1
13401  13370  17574            EX-COM     MAGGY*W(RW1)*FORCE
13402  11530  71021  JG        ENT   A*W(TFLAG)*ANOT
13403  61000  13402            JP    JG
13404  16030  71021            STR   B0*W(TFLAG)
13405  16030  65245            STR   B0*W(LTAPE)
13406  61000  13337            JP    TIS2
13407  16010  65242  RESESS    STR   B0*L(MTN)
13410  12100  00002            ENT   B1*2
13411  65000  13417            RJP   ENDFILEIT                 END OF FILE ON UNIT 3
13412  13370  17575            EX-COM     MAGGY*W(RW3)*FORCE
13413  11530  71021  JF        ENT   A*W(TFLAG)*ANOT
13414  61000  13413            JP    JF
13415  16030  65245            STR   B0*W(LTAPE)
13416  61000  13355            JP    TIS4
13417  12000  00000  ENDFILEIT NO-OP                          WRITES END OF FILE ONEND OF TAPE
13420  13371  17605            EX-COM     MAGGY*W(WEOF+B1)*FORCE
13421  11530  71021  EOFA      ENT   A*W(TFLAG)*ANOT
13422  61000  13421            JP    EOFA                      WAIT FOR TAPE INTERRUPT
13423  16030  71021            STR   B0*W(TFLAG)
13424  61010  13417            JP    L(ENDFILEIT)
                               END-PROC  TAPESTAT
13425  00000  00000            PROCEDURE MONROE
13426  16110  13465            STR   B1*L(STRB1)
13427  16210  13466            STR   B2*L(STRB2)
13430  16310  13467            STR   B3*L(STRB3)
13431  16610  13470            STR   B6*L(STRB6A)
13432  16710  13471            STR   B7*L(STRB7)
13433  15010  13441            STR   A*L(MAB)                  BUFFER ADDRESS IN A
13434  12600  00117            ENT   B6*79D
13435  16036  13473            CL    W(HA+B6)
13436  72600  13435  DDS       BJP   B6*DDS-1
13437  12300  00000            ENT   B3*0
13440  12200  00000            ENT   B2*0
13441  11000  00000  MAB       ENT   A*0
13442  20002  00000            ADD   A*B2                      BUFFER ADDRESS +B2 IN A
13443  12770  00000            ENT   B7*A
13444  10037  00000            ENT   Q*W(B7)                   PICK UP BUFFER WORD
13445  12100  00000            ENT   B1*0
13446  11000  00000  MAA       CL    A
13447  07000  00006            LSH   AQ*6
13450  15010  13452            STR   A*L(SPACETEST)
13451  21400  00001            SUB   A*1*AZERO
13452  11000  00000  SPACETEST ENT   A*0
13453  15033  13473            STR   A*W(HA+B3)
13454  12303  00001            ENT   B3*B3+1
13455  71100  00004            BSK   B1*4
13456  61000  13446            JP    MAA
13457  71200  00017            BSK   B2*15D
13460  61000  13441            JP    MAB
13461  74170  13613            OUT   MONRO*W(HBUF)
13462  12100  05670            ENT   B1*3000D
```

```
13463  72100  13463  MAC      BJP  B1*MAC
13464  67140  00000           TERM MONRO*OUTPUT
13465  12100  00000  STRB1    ENT  B1*0
13466  12200  00000  STRB2    ENT  B2*0
13467  12300  00000  STRB3    ENT  B3*0
13470  12600  00000  STRB6A   ENT  B6*0
13471  12700  00000  STRB7    ENT  B7*0
13472  61010  13425           RETURN
                       HA     RESERVE  80D
13613  13612  13473  HBUF     U-TAGHA+79D*HA
                              END-PROC  MONROE
13614  00000  00000           PROCEDURE LFANDCR
13615  10000  00075           PUT  75*W(PTCDE)
13616  14030  13624
13617  74170  13625           OUT  MONRO*W(PTBUF)
13620  12100  05670           ENT  B1*3000D
13621  72100  13621  LALA     BJP  B1*LALA
13622  67140  00000           TERM MONRO*OUTPUT
13623  61010  13614           RETURN
13624  00000  00000  PTCDE    0
13625  13624  13624  PTBUF    U-TAGPTCDE*PTCDE
                              END-PROC  LFANDCR
13626  00000  00000           PROCEDURE UPITIME
                              COMMENT   UPDATES INTERNAL TIME FROM INTERNAL CLOCK
13627  11030  70755           ENT  A*W(LASTIME)
13630  10030  00160           ENT  Q*W(160)
13631  14030  70755           STR  Q*W(LASTIME)
13632  27070  00000           SUB  Q*A
13633  34030  70756           RPL  Y+Q*W(ICCYS)          ADD LAPSED CYCLES TO COUNT
13634  11030  70756  UPA      ENT  A*W(ICCYS)
13635  21600  02000           SUB  A*1024D*APOS          HAS ONE SECOND ELAPSED
13636  61000  13662           JP   UPB                   NO
13637  65000  13663           RJP  SETCYCNT              SET CYCLE COUNT TO CURRENET TIME
13640  15030  70756           STR  A*W(ICCYS)
13641  36030  70757           RPL  Y+1*W(ISEC)           UPDATE SECONDS
13642  21600  00074           SUB  A*60D*APOS            HAS ONE MINUTE ELAPSED
13643  61000  13634           JP   UPA                   NO
13644  15030  70757           STR  A*W(ISEC)
13645  36030  70760           RPL  Y+1*W(IMINUTE)        UPDATE MINUTES
13646  21600  00074           SUB  A*60D*APOS            HAS ONE HOUR ELAPSED
13647  61000  13634           JP   UPA                   NO
13650  15030  70760           STR  A*W(IMINUTE)
13651  36030  70761           RPL  Y+1*W(IHOUR)          UPDATE HOURS
13652  21600  00030           SUB  A*24D*APOS            HAS ONE DAY ELAPSED
13653  61000  13634           JP   UPA                   NO
13654  15030  70761           STR  A*W(IHOUR)
13655  36030  70762           RPL  Y+1*W(IDAY)           UPDATE DAYS
13656  21600  00037           SUB  A*31D*APOS            HAS AUGUST TURNED TO SEPTEMBER
13657  61000  13634           JP   UPA                   NO
13660  36030  70763           RPL  Y+1*W(IMONTH)
13661  61000  13634           JP   UPA
13662  61010  13626  UPB      RETURN
13663  12000  00000  SETCYCNT NO-OP
13664  15030  13676           STR  A*W(KEEPA)
13665  36030  65356           RPL  Y+1*W(CTSNOS)
13666  21730  13675           SUB  A*W(CYCLENGTH)*ANEG   TEST FOR END OF SHOT CYCLE
13667  61000  13672           JP   SCA                   CYCLE HAS ENDED
13670  11030  13676  SCB      ENT  A*W(KEEPA)
```

```
13671  61010  13663          JP   L(SETCYCNT)
13672  16050  70410  SCA     STR  B0*CPL(CPHP)          SET NEW CYCLE FLAG
13673  16030  65356          STR  B0*W(CTSNDS)
13674  61000  13670          JP   SCB
13675  00000  00036  CYCLENGTH 30D
13676  00000  00000  KEEPA    0
                             END-PROC  UPITIME
13677  00000  00000          PROCEDURE TIMESYNC
                             COMMENT   SYNCS INTERNAL TIME TO EXTERNAL CLOCK
13700  73070  14024          IN   EXCLOK*W(TRSTBC)
13701  62040  13701  TSA     JP   TSA*EXPI
13702  10000  00177          ENT  Q*177                 SECONDS MASK
13703  40030  65244          ENT  LP*W(TRST)
13704  15030  14025          STR  A*W(COMCELL)
13705  73070  14024  TSC     IN   EXCLOK*W(TRSTBC)
13706  62040  13706  TSB     JP   TSB*EXPI
13707  40030  65244          ENT  LP*W(TRST)
13710  21530  14025          SUB  A*W(COMCELL)*ANOT     TEST FOR SECONDS CHANGE
13711  61000  13705          JP   TSC                   LOOP UNTIL SECONDS CHANGE
13712  10000  00017          ENT  Q*17
13713  40030  65244          ENT  LP*W(TRST)
13714  15030  70750          STR  A*W(SEC)
13715  10000  00160          ENT  Q*160
13716  40030  65244          ENT  LP*W(TRST)
13717  03000  00042          RSH  AQ*34D
13720  22000  00012          MUL  10D
13721  34030  70750          RPL  Y+Q*W(SEC)
13722  10000  03600          ENT  Q*3600
13723  40030  65244          ENT  LP*W(TRST)
13724  02000  00007          RSH  A*7
13725  15030  70747          STR  A*W(MIN)
13726  10000  34000          ENT  Q*34000
13727  40030  65244          ENT  LP*W(TRST)
13730  03000  00051          RSH  AQ*41D
13731  22000  00012          MUL  10D
13732  34030  70747          RPL  Y+Q*W(MIN)
13733  10030  71424          ENT  Q*740000
13734  40030  65244          ENT  LP*W(TRST)
13735  02000  00016          RSH  A*14D
13736  15030  70746          STR  A*W(HOUR)
13737  10030  71425          ENT  Q*3000000
13740  40030  65244          ENT  LP*W(TRST)
13741  03000  00060          RSH  AQ*48D
13742  22000  00012          MUL  10D
13743  34030  70746          RPL  Y+Q*W(HOUR)
13744  10030  71426          ENT  Q*74000000
13745  40030  65244          ENT  LP*W(TRST)
13746  03000  00062          RSH  AQ*50D
13747  14030  70745          STR  Q*W(DAY)
13750  10030  71427          ENT  Q*1700000000
13751  40030  65244          ENT  LP*W(TRST)
13752  03000  00066          RSH  AQ*54D
13753  22000  00012          MUL  10D
13754  34030  70745          RPL  Y+Q*W(DAY)
13755  10030  71430          ENT  Q*6000000000
13756  40030  65244          ENT  LP*W(TRST)
13757  07000  00002          LSH  AQ*2
13760  22000  00144          MUL  100D
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13761  34030  70745                RPL   Y+Q*W(DAY)
13762  11000  00423                IF    DAY*GTEQ*275D*THEN*SET*MONTH*TO*10D*AND*DAY*TO*DAY-274D*THEN
13763  21030  70745
13764  01400  00000
13765  60600  13773
13766  10000  00012
13767  14030  70744
13770  10000  00422
13771  35030  70745
13772  61000  14010
13773  11000  00365                IF    DAY*GTEQ*245D*THEN*SET*MONTH*TO*9D*AND*DAY*TO*DAY-244D*THEN*
13774  21030  70745
13775  01400  00000
13776  60600  14004
13777  10000  00011
14000  14030  70744
14001  10000  00364
14002  35030  70745
14003  61000  14010
14004  10000  00010                SET   MONTH*TO*8D*AND*DAY*TO*DAY-213D
14005  14030  70744
14006  10000  00325
14007  35030  70745
14010  16030  70756  ZXCV          STR   B0*W(ICCYS)
14011  10030  70744                SET   IMONTH*TO*MONTH          SET INTERNAL TIMES TO EX CLOCK
14012  14030  70763
14013  10030  70745                SET   IDAY*TO*DAY
14014  14030  70762
14015  10030  70746                SET   IHOUR*TO*HOUR
14016  14030  70761
14017  10030  70747                SET   IMINUTE*TO*MIN
14020  14030  70760
14021  10030  70750                SET   ISEC*TO*SEC
14022  14030  70757
14023  61010  13677                RETURN
14024  65244  65244  TRSTBC       U-TAGTRST*TPST
14025  00000  00000  COMCELL      0
                                   END-PROC  TIMESYNC
14026  00000  00000                PROCEDURE CONLOGIT
14027  14640  00000                STR   Q*A*APOS
14030  14000  00000                CP    Q
14031  60400  14057                JP    CL4*AZERO
14032  12700  00001                ENT   B7*1
14033  05000  00001  CL2           LSH   Q*1
14034  60300  14040                JP    CL3*QNEG
14035  71700  00015                BSK   B7*13D
14036  61000  14033                JP    CL2
14037  61000  14042                JP    CL5
14040  12707  77762  CL3           ENT   B7*B7-13D
14041  16750  00167                STR   B7*CPL(00167)
14042  10047  77760  CL5           ENT   Q*X(B7-15D)
14043  14000  00000                CP    Q
14044  02007  00000                RSH   A*B7
14045  65000  14061  CL1           RJP   NA LOG
14046  10000  00000                CL    Q
14047  03000  00036                RSH   AQ*30D
14050  22030  71431                MUL   33626754
14051  03000  00044                RSH   AQ*36D
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14052  22000  00012            MUL   12
14053  26200  00400            ADD   Q*400*APOS
14054  27000  01000            SUB   Q*1000
14055  01000  00011            RSH   Q*9D
14056  61010  14026            RETURN
14057  10040  77157  CL4       ENT   Q*X77157
14060  61010  14026            JP    L(CONLOGIT)
14061  61000  00000  NATLOG     JP    0
14062  14070  14157            STR   Q*CPW(KITTY)
14063  10000  00000            CL    Q
14064  11670  00000            ENT   A*A*APOS
14065  51040  77777            CP    A
14066  70000  00035            RPT   29D
14067  06700  00001            LSH   A*1*ANEG
14070  61000  14136            JP    NAT2
14071  16710  14074            STR   B7*L(NAT1)
14072  06000  00030            LSH   A*24D
14073  15030  14161            STR   A*W(KITTY+2)
14074  10040  00000  NAT1       ENT   Q*X(0)
14075  26030  14157            ADD   Q*W(KITTY)
14076  01000  00003            LSH   Q*3
14077  26000  00004            ADD   Q*4
14100  11000  00000            CL    A
14101  22030  14147            MUL   W(POOL)
14102  03000  00011            RSH   AQ*9D
14103  11470  00000            ENT   A*A*AZERO
14104  61000  14144            JP    NAT4
14105  14030  14160  NAT5       STR   Q*W(KITTY+1)
14106  10030  14161            ENT   Q*W(KITTY+2)
14107  30030  14151            ENT   Y+Q*W(POOL3)
14110  15030  14162            STR   A*W(KITTY+3)
14111  30030  14153            ENT   Y+Q*W(POOL2)
14112  15030  14163            STR   A*W(KITTY+4)
14113  30030  14155            ENT   Y+Q*W(POOL1)
14114  15030  14164            STR   A*W(KITTY+5)
14115  10030  14152            ENT   Q*W(POOL3+1)
14116  11040  77777            ENT   A*X77777
14117  07000  00027            LSH   AQ*23D
14120  23030  14162            DIV   W(KITTY+3)
14121  34030  14163            RPL   Y+Q*W(KITTY+4)
14122  10030  14154            ENT   Q*W(POOL2+1)
14123  11040  77777            ENT   A*X77777
14124  07000  00027            LSH   AQ*23D
14125  23030  14163            DIV   W(KITTY+4)
14126  34030  14164            RPL   Y+Q*W(KITTY+5)
14127  10030  14156            ENT   Q*W(POOL1+1)
14130  11040  77777            ENT   A*X77777
14131  07000  00027            LSH   AQ*23D
14132  23030  14164            DIV   W(KITTY+5)
14133  26030  14160            ADD   Q*W(KITTY+1)
14134  30030  14150            ENT   Y+Q*W(POOL+1)
14135  61000  14140            JP    NAT3
14136  10040  77157  NAT2       ENT   Q*X77157
14137  61010  14026            JP    L(CONLOGIT)
14140  15000  00000  NAT3       STR   A*Q
14141  36010  14061            RPL   Y+1*L(NATLOG)
14142  07000  00037            LSH   AQ*31D
14143  61010  14061            JP    L(NATLOG)
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14144  51440  77777  NAT4     SEL  CP*X77777*AZERO
14145  61010  14061           JP   L(NATLOG)
14146  61000  14105           JP   NAT5
14147  26134  41377  POOL     2613441377
14150  01656  40206           0165640206
14151  00154  63077  POOL3    0015463077
14152  77673  61257           7767361257
14153  01015  07044  POOL2    0101507044
14154  73737  47270           7373747270
14155  05141  14431  POOL1    0514114431
14156  56626  67151           5662667151
                     KITTY    RESERVE   6
                              END-PROC  CONLOGIT
14165  00000  00000  CVT      PROCEDURE CONVOLT
14166  14030  70773           STR  Q*W(TMP)
14167  10250  70773           ENT  Q*LX(TMP)*QPOS
14170  14000  00000           CP   Q
14171  22000  00024           MUL  24
14172  05000  00003           LSH  Q*3
14173  11630  70773           ENT  A*W(TMP)*APOS
14174  14000  00000           CP   Q
14175  11000  00000           CL   A
14176  61010  14165           RETURN
                              END-PROC  CONVOLT
14177  00000  00000  PK       PROCEDURE PKSQIN
14200  12100  00000           ENT  B1*0
14201  12200  00000           ENT  B2*0
14202  12300  00000           ENT  B3*0
14203  11040  74000  START1   ENT  A*X74000
14204  10002  00000           ENT  Q*B2
14205  26001  00000           ADD  Q*B1
14206  14030  00164           STR  Q*W(00164)
14207  10064  17637           ENT  Q*UX(LEV+B4)
14210  04370  00000           COM  Q*A*YMORE
14211  14040  00000           STR  Q*A
14212  10054  17637           ENT  Q*LX(LEV+B4)
14213  04370  00000           COM  Q*A*YMORE
14214  14040  00000           STR  Q*A
14215  12202  00011           ENT  B2*11+B2
14216  71130  70774           BSK  B1*W(*ORDS)
14217  61000  14204           JP   START1+1
14220  15033  64603           STR  A*W(PEAK+B3)
14221  12203  00001           ENT  B2*B3+1
14222  71330  70775           BSK  B3*W(ITEMS)
14223  61000  14203           JP   START1
14224  12100  00000           ENT  B1*0
14225  12200  00000           ENT  B2*0
14226  12300  00000           ENT  B3*0
14227  10000  00000  START2   PUT  0*W(TEMP)
14230  14030  70776
14231  16030  71421           STR  B0*W(TEMPT)
14232  10002  00000           ENT  Q*B2
14233  26001  00000           ADD  Q*B1
14234  14030  00164           STR  Q*W(00164)
14235  10064  17637           ENT  Q*UX(LEV+B4)
14236  22064  17637           MUL  UX(LEV+B4)
14237  65000  14314           RJP  TILT
14240  10054  17637           ENT  Q*LX(LEV+B4)
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14241  22054  17637            MUL   LX(LEV+B4)
14242  65000  14314            RJP   TILT
14243  12202  00011            ENT   B2*11+B2
14244  71130  70774            BSK   B1*W(WORDS)
14245  61000  14231            JP    START2+2
14246  10030  71421            ENT   Q*W(TEMPT)
14247  01000  00011            RSH   Q*9D
14250  34030  70776            RPL   Y+Q*W(TEMP)
14251  10030  70776            ENT   Q*W(TEMP)
14252  22000  00020            MUL   020
14253  03000  00014            RSH   AQ*12D
14254  14030  70776            STR   Q*W(TEMP)
14255  10030  70776            PUT   W(TEMP)*W(SQIN+B3)
14256  14033  65106
14257  12203  00001            ENT   B2*B3+1
14260  71330  70775            BSK   B3*W(ITEMS)
14261  61000  14227            JP    START2
14262  12100  00000            ENT   B1*0
14263  10030  00161  CONVERT    ENT   Q*W(00161)
14264  14030  00162            STR   Q*W(00162)
14265  10032  65067            ENT   Q*W(ATTEN+B2)
14266  27000  00001            SUB   Q*1
14267  22000  00240            MUL   240
14270  14031  65120            STR   Q*W(CATT+B1)
14271  71130  70775            BSK   B1*W(ITEMS)
14272  61000  14263            JP    CONVERT
14273  10031  64603  PEAK1     ENT   Q*W(PEAK+B1)
14274  65000  14165            CONVOLT
14275  65000  14026            CONLOGIT
14276  22000  00002            MUL   2
14277  26031  65120            ADD   Q*W(CATT+B1)
14300  27031  64641            SUB   Q*W(CALPK+B1)
14301  14031  64603            STR   Q*W(PEAK+B1)
14302  71130  70775            BSK   B1*W(ITEMS)
14303  61000  14273            JP    PEAK1
14304  10031  65106  SQIN1     ENT   Q*W(SQIN+B1)
14305  65000  14026            CONLOGIT
14306  26031  65120            ADD   Q*W(CATT+B1)
14307  27031  64622            SUB   Q*W(CALIN+B1)
14310  14031  65106            STR   Q*W(SQIN+B1)
14311  71130  70775            BSK   B1*W(ITEMS)
14312  61000  14304            JP    SQIN1
14313  61010  14177            RETURN
14314  12000  00000  TILT      NO-OP
14315  22000  00620            MUL   620
14316  07000  00025            LSH   AQ*21D
14317  24030  70776            RPL   A+Y*W(TEMP)
14320  05000  00011            LSH   Q*9D
14321  34030  71421            RPL   Y+Q*W(TEMPT)
14322  61010  14314            JP    L(TILT)
                               END-PROC  PKSQIN
14323  00000  00000            PROCEDURE SNCORRECT
14324  14030  70776            STR   Q*W(TEMP)
14325  12100  00000            ENT   B1*0
14326  10030  70776            ENT   Q*W(TEMP)
14327  27670  00000            SUB   Q*A*QPOS
14330  14000  00000            CP    Q
14331  31521  14345  TABL      ENT   Y-Q*U(SNCK+B1)*ANOT
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14332  61000  14340          JP    FIND1
14333  71100  00167          BSK   B1*1190
14334  61000  14331          JP    TABL
14335  10030  70776          ENT   Q*W(TEMP)
14336  11000  00000          CL    A
14337  61010  14323          RETURN
14340  11011  14345  FIND1   ENT   A*L(SNCK+B1)
14341  10030  70776          ENT   Q*W(TEMP)
14342  27070  00000          SUB   Q*A
14343  11000  00000          CL    A
14344  61000  14337          RETURN
14345  00140  00000  SNCK    0014000000
14346  00137  00000          0013700000
14347  00136  00000          0013600000
14350  00135  00001          0013500001
14351  00134  00001          0013400001
14352  00134  00001          0013400001
14353  00133  00001          0013300001
14354  00132  00001          0013200001
14355  00131  00001          0013100001
14356  00130  00001          0013000001
14357  00130  00002          0013000002
14360  00127  00002          0012700002
14361  00126  00002          0012600002
14362  00125  00002          0012500002
14363  00124  00002          0012400002
14364  00124  00002          124  2
14365  00123  00003          123  3
14366  00122  00003          122  3
14367  00121  00003          121  3
14370  00120  00003          120  3
14371  00120  00003          120  3
14372  00117  00003          117  3
14373  00116  00004          116  4
14374  00115  00004          115  4
14375  00114  00004          114  4
14376  00114  00004          114  4
14377  00113  00004          113  4
14400  00112  00004          112  4
14401  00111  00004          111  4
14402  00110  00004          110  4
14403  00110  00004          110  4
14404  00107  00005          107  5
14405  00106  00005          106  5
14406  00105  00005          105  5
14407  00104  00005          104  5
14410  00104  00005          104  5
14411  00103  00006          103  6
14412  00102  00006          102  6
14413  00101  00006          101  6
14414  00100  00006          100  6
14415  00100  00007          100  7
14416  00077  00007          77   7
14417  00076  00007          76   7
14420  00075  00007          75   7
14421  00074  00010          74   10
14422  00074  00010          74   10
14423  00073  00010          73   10
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14424	00072	00010	72	10
14425	00071	00010	71	10
14426	00070	00010	70	10
14427	00070	00010	70	10
14430	00067	00011	67	11
14431	00066	00011	66	11
14432	00065	00011	65	11
14433	00064	00012	64	12
14434	00064	00012	64	12
14435	00063	00012	63	12
14436	00062	00013	62	13
14437	00061	00013	61	13
14440	00060	00013	60	13
14441	00060	00014	60	14
14442	00057	00014	57	14
14443	00056	00014	56	14
14444	00055	00014	55	14
14445	00054	00014	54	14
14446	00054	00014	54	14
14447	00053	00015	53	15
14450	00052	00015	52	15
14451	00051	00016	51	16
14452	00050	00016	50	16
14453	00050	00016	50	16
14454	00047	00017	47	17
14455	00046	00017	46	17
14456	00045	00020	45	20
14457	00044	00020	44	20
14460	00044	00020	44	20
14461	00043	00020	43	20
14462	00042	00020	42	20
14463	00041	00021	41	21
14464	00040	00021	40	21
14465	00040	00022	40	22
14466	00037	00022	37	22
14467	00036	00023	36	23
14470	00035	00023	35	23
14471	00034	00024	34	24
14472	00034	00024	34	24
14473	00033	00024	33	24
14474	00032	00025	32	25
14475	00031	00026	31	26
14476	00030	00027	30	27
14477	00030	00030	30	30
14500	00027	00030	27	30
14501	00026	00030	26	30
14502	00025	00031	25	31
14503	00024	00032	24	32
14504	00024	00033	24	33
14505	00023	00034	23	34
14506	00022	00034	22	34
14507	00021	00036	21	36
14510	00020	00037	20	37
14511	00020	00040	20	40
14512	00017	00041	17	41
14513	00016	00042	16	42
14514	00015	00044	15	44
14515	00014	00045	14	45

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14516  00014  00047                14   47
14517  00013  00051                13   51
14520  00012  00054                12   54
14521  00011  00056                11   56
14522  00010  00061                10   61
14523  00010  00064                10   64
14524  00007  00070                 7   70
14525  00006  00074                 6   74
14526  00005  00102                 5   102
14527  00004  00110                 4   110
14530  00004  00117                 4   117
14531  00003  00120                 3   120
14532  00002  00120                 2   120
14533  00001  00120                 1   120
14534  00000  00120                 0   120
                                    END-PROC  SNCORRECT
14535  00000  00000                PROCEDURE SNRATIO
14536  12100  00000                ENT  B1*0
14537  10030  00161  AGAIN         ENT  Q*W(00161)
14540  14030  00162                STR  Q*W(00162)
14541  10032  65050                ENT  Q*W(NATT+B2)
14542  27000  00001                SUB  Q*1
14543  22000  00240                MUL  240
14544  14031  65036                STR  Q*W(NAT+B1)
14545  71130  70775                BSK  B1*W(ITEMS)
14546  61000  14537                JP   AGAIN
14547  10031  65132  PROCS         ENT  Q*W(GSXI+B1)
14550  22000  00010                MUL  10
14551  03000  00006                RSH  AQ*6
14552  16130  70777                STR  B1*W(STRE)
14553  65000  14026                CONLOGIT
14554  12130  70777                ENT  B1*W(STRE)
14555  26031  65036  GCJ           ADD  Q*W(NAT+B1)
14556  27031  64622                SUB  Q*W(CALIN2+B1)
14557  14031  64564                STR  Q*W(NOS+B1)
14560  14030  71000                STR  Q*W(TEMP3)
14561  14040  00000                STR  Q*A
14562  10031  65106                ENT  Q*W(SQIN+B1)
14563  16130  70777                STR  B1*W(STRE)
14564  65000  14323                SNCORRECT
14565  12130  70777                ENT  B1*W(STRE)
14566  14031  64351                STR  Q*W(SIG+B1)
14567  27030  71000                SUB  Q*W(TEMP3)
14570  14031  64545  SNGT          STR  Q*W(SNTAB+B1)
14571  71130  70775                BSK  B1*W(ITEMS)
14572  61000  14547                JP   PROCS
14573  61010  14535                RETURN
                                    END-PROC  SNRATIO
14574  00000  00000                PROCEDURE PROPLOSS
14575  12200  00000                ENT  B2*0
14576  12100  00000                ENT  B1*0
14577  11030  70752                ENT  A*W(CODEWORD)
14600  21500  00001                SUB  A*1*ANOT
14601  61000  14615                JP   PROP1
14602  21500  00001                SUB  A*1*ANOT
14603  61000  14625                JP   PROP2
14604  21500  00001                SUB  A*1*ANOT
14605  61000  14635                JP   PROP3
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14606  21500  00001          SUB   A*1*ANOT
14607  61000  14645          JP    PROP4
14610  21500  00001          SUB   A*1*ANOT
14611  61000  14655          JP    PROP5
14612  21500  00001          SUB   A*1*ANOT
14613  61000  14665          JP    PROP6
14614  61000  14675          JP    PROP7
14615  10032  64730  PROP1   ENT   Q*W(AGSL+B2)
14616  27031  64351          SUB   Q*W(SIG+B1)
14617  14031  64526          STR   Q*W(PROPL+B1)
14620  71200  00011          BSK   B2*11
14621  12000  00000          NO-OP
14622  71130  70775          BSK   B1*W(ITEMS)
14623  61000  14615          JP    PROP1
14624  61010  14574          RETURN
14625  10032  64742  PROP2   ENT   Q*W(SL178+B2)
14626  27031  64351          SUB   Q*W(SIG+B1)
14627  14031  64526          STR   Q*W(PROPL+B1)
14630  71200  00011          BSK   B2*11
14631  12000  00000          NO-OP
14632  71130  70775          BSK   B1*W(ITEMS)
14633  61000  14625          JP    PROP2
14634  61000  14624          RETURN
14635  10032  64754  PROP3   ENT   Q*W(SLE1+B2)
14636  27031  64351          SUB   Q*W(SIG+B1)
14637  14031  64526          STR   Q*W(PROPL+B1)
14640  71200  00011          BSK   B2*11
14641  12000  00000          NO-OP
14642  71130  70775          BSK   B1*W(ITEMS)
14643  61000  14635          JP    PROP3
14644  61000  14624          RETURN
14645  10032  64766  PROP4   ENT   Q*W(SLE2+B2)
14646  27031  64351          SUB   Q*W(SIG+B1)
14647  14031  64526          STR   Q*W(PROPL+B1)
14650  71200  00011          BSK   B2*11
14651  12000  00000          NO-OP
14652  71130  70775          BSK   B1*W(ITEMS)
14653  61000  14645          JP    PROP4
14654  61000  14624          RETURN
14655  10032  65000  PROP5   ENT   Q*W(SLE3+B2)
14656  27031  64351          SUB   Q*W(SIG+B1)
14657  14031  64526          STR   Q*W(PROPL+B1)
14660  71200  00011          BSK   B2*11
14661  12000  00000          NO-OP
14662  71130  70775          BSK   B1*W(ITEMS)
14663  61000  14655          JP    PROP5
14664  61000  14624          RETURN
14665  10032  65012  PROP6   ENT   Q*W(SLE4+B2)
14666  27031  64351          SUB   Q*W(SIG+B1)
14667  14031  64526          STR   Q*W(PROPL+B1)
14670  71200  00011          BSK   B2*11
14671  12000  00000          NO-OP
14672  71130  70775          BSK   B1*W(ITEMS)
14673  61000  14665          JP    PROP6
14674  61000  14624          RETURN
14675  10032  65024  PROP7   ENT   Q*W(SLE5+B2)
14676  27031  64351          SUB   Q*W(SIG+B1)
14677  14031  64526          STR   Q*W(PROPL+B1)
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14700  71200  00011              BSK  B2*11
14701  12000  00000              NO-OP
14702  71130  70775              BSK  B1*W(ITEMS)
14703  61000  14675              JP   PROP7
14704  61000  14624              RETURN
                                 END-PROC  PROPLOSS
14705  00000  00000              PROCEDURE PHASE1M
14706  65000  14177              PKSQIN
14707  65000  14535              SNRATIO
14710  65000  14574              PROPLOSS
14711  61010  14705              RETURN
                                 END-PROC  PHASE1M
14712  00000  00000              PROCEDURE TVLTMRANGE
14713  10010  64665              ENT  Q*L(ID+5)
14714  14030  71013              STR  Q*W(ZETA)
14715  10020  64665              ENT  Q*U(ID+5)                SECONDS
14716  22000  01750              MUL  1000D
14717  34030  71013              RPL  Y+Q*W(ZETA)
14720  10010  64664              ENT  Q*L(ID+4)                MINUTES
14721  22030  71432              MUL  60000D
14722  34030  71013              RPL  Y+Q*W(ZETA)              ZETA IS RECEIVED TIME IN MILLISECON
14723  10030  71012              SET  ZETA*TO*ZETA-ALPHA
14724  35030  71013
14725  11030  71013  TTE         IF   ZETA*LT*0*THEN*SET*ZETA*TO*ZETA+3600000D*THEN*GOTO*TTE
14726  60600  14732
14727  11030  71433
14730  24030  71013
14731  61000  14725
14732  11030  71013              SET  RANGE*TO*ZETA+5/10D
14733  20000  00005
14734  03000  00036
14735  23000  00012
14736  14030  64350
14737  22030  17611              SET  RANGE*TO*(RANGE)(SDVEL)+500D/1000D
14740  30000  00764
14741  03000  00036
14742  23000  01750
14743  14030  64350
14744  61010  14712              RETURN
                                 END-PROC  TVLTMRANGE
14745  00000  00000              PROCEDURE GIN
14746  73270  17550              IN   SAMPLE*W(ADBF)
14747  13260  15226              EX-COM    SAMPLE*W(GADEF1)
14750  70000  00006              RPT  6
14751  12000  00000              NO-OP
14752  73270  15225              IN   SAMPLE*W(GBUFIN)
14753  13260  15227              EX-COM    SAMPLE*W(GADEF2)
14754  61010  14745              RETURN
                                 END-PROC  GIN
14755  00000  00000              PROCEDURE GNOISE*INPUT*MTN
14756  13130  71423              EX-COM    SAND*0*FORCE
14757  13130  17612              EX-COM    SAND*W(STEP1)*FORCE
14760  12100  00000              ENT  B1*0
14761  12200  00000              ENT  B2*0
14762  16031  65132  GCLR        STR  B0*W(GSXI+B1)
14763  71100  00016              BSK  B1*14D
14764  61000  14762              JP   GCLR
14765  10030  15232              PUT  W(GMTEF3)*W(GMTEF2)
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14766  14030  15231
14767  10030  15234          PUT   W(GMTEF5)*W(GMTEF4)
14770  14030  15233
14771  10030  15236          PUT   W(GMTEF7)*W(GMTEF6)
14772  14030  15235
14773  10030  15240          PUT   W(GMTEF9)*W(GMTEF8)
14774  14030  15237
14775  10000  00002          ENT   Q*2
14776  22010  65242          MUL   L(MTN)
14777  26000  00001          ADD   Q*1
15000  34030  15231          RPL   Y+Q*W(GMTEF2)
15001  34030  15233          RPL   Y+Q*W(GMTEF4)
15002  34030  15235          RPL   Y+Q*W(GMTEF6)
15003  34030  15237          RPL   Y+Q*W(GMTEF8)
15004  11530  70754          ENT   A*W(RESET)*ANOT
15005  61000  15023          JP    GTEDDI
15006  16030  70754          STR   B0*W(RESET)
15007  16030  71021          STR   B0*W(TFLAG)
15010  13370  15235          EX-COM     MAGGY*W(GMTEF6)*FORCE
15011  11530  71021  GMIN    ENT   A*W(TFLAG)*ANOT
15012  61000  15011          JP    GMIN
15013  16030  71021          STR   B0*W(TFLAG)
15014  13370  15235          EX-COM     MAGGY*W(GMTEF6)*FORCE
15015  11530  71021  GCHRIS  ENT   A*W(TFLAG)*ANOT
15016  61000  15015          JP    GCHRIS
15017  16030  71021          STR   B0*W(TFLAG)
15020  13370  15237          EX-COM     MAGGY*W(GMTEF8)*FORCE
15021  11530  71021  GLEA    ENT   A*W(TFLAG)*ANOT
15022  61000  15021          JP    GLEA
15023  16030  15242  GTEDDI  STR   B0*W(GBAG)
15024  65000  15172          RJP   NATTAB
15025  10030  65242          PUT   W(MTN)*W(GID)
15026  14030  65210
15027  16020  65211          STR   B0*U(GID+1)
15030  16010  65211          STR   B0*L(GID+1)
15031  10010  70763          PUT   L(IMONTH)*U(GID+2)
15032  14020  65212
15033  10010  70762          PUT   L(IDAY)*L(GID+2)
15034  14010  65212
15035  10010  70761          PUT   L(IHOUR)*U(GID+3)
15036  14020  65213
15037  10010  70760          PUT   L(IMINUTE)*L(GID+3)
15040  14010  65213
15041  10010  70757          PUT   L(ISEC)*U(GID+4)
15042  14020  65214
15043  74370  15241          OUT   MAGGY*W(GBUFID)*FORCE
15044  13370  15231          EX-COM     MAGGY*W(GMTEF2)*FORCE
15045  12100  00000  GAGN    ENT   B1*0
15046  12200  00000          ENT   B2*0
15047  12300  00000          ENT   B3*0
15050  12400  00000          ENT   B4*0
15051  12500  00000          ENT   B5*0
15052  12600  00000          ENT   B6*0
15053  12700  00000          ENT   B7*0
15054  10030  00160          ENT   Q*W(CLOCK)
15055  26030  15243          ADD   Q*W(GRATE)
15056  14030  71002          STR   Q*W(GTIMER)
15057  11030  00160  GALPHA  ENT   A*W(160)
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15060  21630  71002          SUB   A*W(GTIMER)*APOS
15061  61000  15057          JP    GALPHA
15062  11030  15243          ENT   A*W(GRATE)
15063  24030  71002          RPL   A+Y*W(GTIMER)
15064  65000  14745          GIN
15065  71700  00004  GH0     BSK   B7*4
15066  61000  15065          JP    GH0
15067  11410  15242          ENT   A*L(GBAG)*AZERO
15070  61000  15103          JP    GPACL
15071  10056  65171  GPACU   ENT   Q*LX(GTHRESH+B6)
15072  14021  17637          STR   Q*L(GHIGH+B1)
15073  22056  65171          MUL   LX(GTHRESH+B6)
15074  34036  65132          RPL   Y+Q*W(GSXI+B6)
15075  12101  00001  GCON1   ENT   B1*B1+1
15076  71600  00016          BSK   B6*14D
15077  61000  15071          JP    GPACU
15100  16050  15242          STR   B0*CPL(GBAG)
15101  12101  77760          ENT   B1*B1-15D
15102  61000  15113          JP    GQ
15103  10056  65171  GPACL   ENT   Q*LX(GTHRESH+B6)
15104  14011  17637          STR   Q*L(GHIGH+B1)
15105  22056  65171          MUL   LX(GTHRESH+B6)
15106  34036  65132          RPL   Y+Q*W(GSXI+B6)
15107  12101  00001  GCON2   ENT   B1*B1+1
15110  71600  00016          BSK   B6*14D
15111  61000  15103          JP    GPACL
15112  16010  15242          STR   B0*L(GBAG)
15113  71300  02335  GQ      BSK   B3*1245D
15114  11400  00000          ENT   A*0*AZERO
15115  61000  15121          JP    GOUTHI
15116  71100  22237  GQQ     BSK   B1*9375D
15117  72100  15120          BJP   B1*GWEST
15120  61000  15124  GWEST   JP    GFULL
15121  74370  15224  GOUTHI  OUT   MAGGY*W(GBUFHI)*FORCE
15122  13370  15231          EX-COM    MAGGY*W(GMTEF2)*FORCE
15123  61000  15116          JP    GQQ
15124  71200  16514  GFULL   BSK   B2*16514
15125  61000  15057          JP    GALPHA
15126  61000  15142          JP    GDIVN
15127  10034  65132  GCONVOLT ENT  Q*W(GSXI+B4)
15130  22030  71434          MUL   62000000
15131  15034  65132          STR   A*W(GSXI+B4)
15132  71400  00016          BSK   B4*14D
15133  61000  15127          JP    GCONVOLT
15134  10034  65151  GCONVOLT1 ENT  Q*W(GSXIN+B4)
15135  22030  71434          MUL   62000000
15136  15034  65151          STR   A*W(GSXIN+B4)
15137  71400  00016          BSK   B4*14D
15140  61000  15134          JP    GCONVOLT1
15141  61000  15162          JP    GPONG
15142  10034  65232  GDIVN   ENT   Q*W(GSXI+B4)
15143  11000  00000          CL    A
15144  23000  16514          DIV   7500D
15145  14034  65151          STR   Q*W(GSXIN+B4)
15146  71400  00016          BSK   B4*14D
15147  61000  15142          JP    GDIVN
15150  10034  65151  GSQR1   ENT   Q*W(GSXIN+B4)
15151  23070  00000          SQRT
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15152  14034  15205                STR  Q*W(GRMS+B4)
15153  71400  00016                BSK  B4*14D
15154  61000  15150                JP   GSORT
15155  10034  15205  GHOLD         ENT  Q*W(GRMS+B4)
15156  22000  00003                MUL  3
15157  14034  65171                STR  Q*W(GTHRESH+B4)
15160  71400  00016                BSK  B4*14D
15161  61000  15155                JP   GHOLD
15162  61000  15127                JP   GCONVOLT
15163  63340  15163  GPONG         JP   GPONG*MAGOO
15164  12000  00000  GBILL         NO-OP
15165  71400  23420                BSK  B4*10000D
15166  61000  15164                JP   GBILL
15167  13370  15233                EX-COM    MAGGY*W(GMTEF4)*FORCE
15170  13130  17614                EX-COM    SAND*W(STEP3)*FORCE
15171  61010  14755                RETURN
15172  00000  00000  NATTAB        ENTRY
15173  11031  65050  GSTUFF        ENT  A*W(NATT+B1)
15174  15022  65215                STR  A*U(GNATT+B2)
15175  12101  00001                ENT  B1*B1+1
15176  11031  65050                ENT  A*W(NATT+B1)
15177  15012  65215                STR  A*L(GNATT+B2)
15200  12202  00001                ENT  B2*B2+1
15201  71100  00017                BSK  B1*15D
15202  61000  15173                JP   GSTUFF
15203  12200  00000                ENT  B2*0
15204  61010  15172                EXIT
                           GRMS    RESERVE   15D
15224  42075  17637  GBUFHI        U-TAGGHIGH+9374D*GHIGH
15225  65207  6517C  GBUFIN        U-TAGGTHRESH+14D*GARBAGE2
15226  00000  00400  GADEF1        0    400
15227  00000  00140  GADEF2        140
15230  00006  00000  GMTEF1        600000
15231  00000  53250  GMTEF2        53250
15232  00000  53250  GMTEF3        53250
15233  00000  73250  GMTEF4        73250
15234  00000  73250  GMTEF5        73250
15235  00001  17250  GMTEF6        117250
15236  00001  17250  GMTEF7        117250
15237  00000  17250  GMTEF8        017250
15240  00000  17250  GMTEF9        017250
15241  65224  65210  GBUFID        U-TAGGID+12D*GID
                           GBAG    RESERVE   1
15243  00000  00004  GRATE         4
                                   END-PROC  GNOISE
15244  00000  00000  GTT           PROCEDURE GTTY
15245  15030  15732                STR  A*W(ASTORE)
15246  14030  15733                STR  Q*W(GSTORE)
15247  10030  00167                PUT  W(00167)*W(BSTORE)
15250  14030  15734
15251  17330  15737                STR  TELY*W(THOLD)
15252  10000  00777                ENT  Q*777
15253  11030  15737                ENT  A*W(THOLD)              PUT CODE IN A
15254  43400  00101                COM  MASK*101*AZERO
15255  61000  15260                JP   GTT1
15256  65000  01002                RJP  KEYIN
15257  61000  15312                JP   CONTIN+2
15260  43500  00106  GTT1          COM  MASK*106*ANOT           TEST FOR F
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15261  61000  15301          JP    GTTF
15262  43500  00104          COM   MASK*104*ANOT          TEST FOR D
15263  61000  15317          JP    GTTD
15264  43500  00122          COM   MASK*122*ANOT          TEST FOR R
15265  61000  15342          JP    GTTR
15266  43500  00125          COM   MASK*125*ANOT          TEST FOR U
15267  61000  15335          JP    GTTU
15270  43500  00103          COM   MASK*103*ANOT          TEST FOR C
15271  61000  15277          JP    GTTC
15272  43500  00120          COM   MASK*120*ANOT          TEST FOR P
15273  61000  15375          JP    GTTP
15274  43500  00107          COM   MASK*107*ANOT          TEST FOR G
15275  61000  15345          JP    GTTG
15276  61000  15312          JP    CONTIN+2               ILLEGAL CODE  IGNORE IT
15277  37030  71416  GTTC    RPL   Y-1*W(BANGTIME)
15300  61000  15312          JP    CONTIN+2
15301  10000  00001  GTTF    SET   FORCE*TO*1
15302  14030  65251
15303  12700  00000          ENT   B7*0
15304  10000  00006          ENT   Q*6
15305  14037  71015          STR   Q*W(THCTR1+B7)
15306  71700  00002          BSK   B7*2
15307  61000  15304          JP    GTTF+3
15310  13320  15751  CONTIN  EX-COM     TELY*W(MACL)
15311  13320  15752          EX-COM     TELY*W(KEX)
15312  10030  15734          PUT   W(BSTORE)*W(00167)
15313  14030  00167
15314  11030  15732          ENT   A*W(ASTORE)
15315  10030  15733          ENT   Q*W(QSTORE)
15316  60110  15244          RETURN     RIL
15317  11430  71024  GTTD    ENT   A*W(CFLAG)*AZERO
15320  61000  15633          JP    GTTD1A
15321  11000  00003          SET   CHANGE*TO*CHANGE+3
15322  24030  70770
15323  10030  70770  GTTD1   ENT   Q*W(CHANGE)
15324  22000  00001          MUL   1
15325  26200  00000          ADD   Q*0*APOS
15326  14000  00000          CP    Q
15327  27600  00006          SUB   Q*6*QPOS
15330  61000  15312          JP    CONTIN+2
15331  10600  00006          ENT   Q*6*APOS
15332  14000  00000          CP    Q
15333  14030  70770          STR   Q*W(CHANGE)
15334  61000  15312          JP    CONTIN+2
15335  11430  71024  GTTU    ENT   A*W(CFLAG)*AZERO
15336  61000  15647          JP    GTTU1A
15337  10000  00003          SET   CHANGE*TO*CHANGE-3
15340  35030  70770
15341  61000  15323          JP    GTTD1
15342  10000  00001  GTTR    SET   RESET*TO*1
15343  14030  70754
15344  61000  15310          JP    CONTIN
15345  13320  15751  GTTG    EX-COM     TELY*W(MACL)
15346  13320  15752          EX-COM     TELY*W(KEX)
15347  10030  15740          PUT   W(RESTAT)*W(INM)
15350  14030  00046
15351  75330  15750          IN    TELY*W(BUFFET)*MONITOR
15352  61000  15312          JP    CONTIN+2
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15353  15030  15732  GTTG1    STR  A*W(ASTORE)
15354  14030  15733           STR  Q*W(QSTORE)
15355  10030  00167           PUT  W(00167)*W(BSTORE)
15356  14030  15734
15357  11030  15736           ENT  A*W(KAT)
15360  21000  00100           SUB  A*100
15361  70000  00016           RPT  16
15362  21400  00001           SUB  A*1*AZERO
15363  61000  15345           JP   GTTG
15364  10000  00015           ENT  Q*15
15365  27010  00167           SUB  Q*L(00167)
15366  14030  15735           STR  Q*W(THD)
15367  10000  00001           ENT  Q*1
15370  05030  15735           LSH  Q*W(THD)
15371  11010  70764           ENT  A*L(RLM)
15372  53040  77777           SEL  SU*X77777
15373  15010  70764           STR  A*L(RLM)
15374  61000  15312           JP   CONTIN+2
15375  13320  15751  GTTP     EX-COM    TELY*W(MACL)
15376  13320  15752           EX-COM    TELY*W(KEX)
15377  10030  15741           PUT  W(RESTAT1)*W(INM)
15400  14030  00046
15401  75330  15750           IN   TELY*W(BUFFET)*MONITOR
15402  61000  15312           JP   CONTIN+2
15403  15030  15732  GTTP1    STR  A*W(ASTORE)
15404  14030  15733           STR  Q*W(QSTORE)
15405  10030  00167           PUT  W(00167)*W(BSTORE)
15406  14030  15734
15407  10000  00777           ENT  Q*777
15410  11030  15736           ENT  A*W(KAT)
15411  43500  00101           COM  MASK*101*ANOT          TEST FOR A
15412  61000  15477           JP   GTTA
15413  43500  00123           COM  MASK*123*ANOT          TEST FOR S
15414  61000  15555           JP   GTTS
15415  43500  00124           COM  MASK*124*ANOT          TEST FOR T
15416  61000  15421           JP   GTTT
15417  61000  15375           JP   GTTP
15420  61000  15312           JP   CONTIN+2
15421  13320  15751  GTTT     EX-COM    TELY*W(MACL)
15422  13320  15752           EX-COM    TELY*W(KEX)
15423  10030  15742           PUT  W(RESTAT2)*W(INM)
15424  14030  00046
15425  75330  15750           IN   TELY*W(BUFFET)*MONITOR
15426  61000  15312           JP   CONTIN+2
15427  15030  15732  GTTT1    STR  A*W(ASTORE)
15430  14030  15733           STR  Q*W(QSTORE)
15431  10030  00167           PUT  W(167)*W(BSTORE)
15432  14030  15734
15433  10030  15736           ENT  Q*W(KAT)
15434  11000  00066           ENT  A*66
15435  04370  00000           COM  Q*A*YMORE
15436  61000  15421           JP   GTTT
15437  11030  15736           ENT  A*W(KAT)
15440  21600  00061           SUB  A*61*APOS
15441  61000  15421           JP   GTTT
15442  27000  00060           SUB  Q*60
15443  14040  00000           STR  Q*A
15444  27000  00001           SUB  Q*1
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15445  05000  00003            LSH   Q*3
15446  26070  00000            ADD   Q*A
15447  14030  15735            STR   Q*W(THD)
15450  13320  15751  GTTT3     EX-COM      TELY*W(MACL)
15451  13320  15752            EX-COM      TELY*W(KEX)
15452  10030  15743            PUT   W(RESTAT3)*W(INM)
15453  14030  00046
15454  75330  15750            IN    TELY*W(BUFFET)*MONITOR
15455  61000  15312            JP    CONTIN+2
15456  15030  15732  GTTT2     STR   A*W(ASTORE)
15457  16730  15734            STR   B7*W(BSTORE)
15460  14030  15733            STR   Q*W(QSTORE)
15461  10030  15736            ENT   Q*W(KAT)
15462  11000  00072            ENT   A*72
15463  04370  00000            COM   Q*A*YMORE
15464  61000  15450            JP    GTTT3
15465  11030  15736            ENT   A*W(KAT)
15466  21600  00061            SUB   A*61*APOS
15467  61000  15450            JP    GTTT3
15470  27000  00061            SUB   Q*61
15471  26030  15735            ADD   Q*W(THD)
15472  11030  70765            ENT   A*W(RLMTTY)
15473  52000  00077            SEL   CL*77
15474  26070  00000            ADD   Q*A
15475  14030  70765            STR   Q*W(RLMTTY)
15476  61000  15312            JP    CONTIN+2
15477  13320  15751  GTTA      EX-COM      TELY*W(MACL)
15500  13320  15752            EX-COM      TELY*W(KEX)
15501  10030  15744            PUT   W(RESTAT4)*W(INM)
15502  14030  00046
15503  75330  15750            IN    TELY*W(BUFFET)*MONITOR
15504  61000  15312            JP    CONTIN+2
15505  15030  15732  GTTA1     STR   A*W(ASTORE)
15506  14030  15733            STR   Q*W(QSTORE)
15507  10030  00167            PUT   W(00167)*W(BSTORE)
15510  14030  15734
15511  10030  15736            ENT   Q*W(KAT)
15512  11000  00063            ENT   A*63
15513  04370  00000            COM   Q*A*YMORE
15514  61000  15477            JP    GTTA
15515  11030  15736            ENT   A*W(KAT)
15516  21600  00061            SUB   A*61*APOS
15517  61000  15477            JP    GTTA
15520  27000  00061            SUB   Q*61
15521  14040  00000            STR   Q*A
15522  06000  00003            LSH   A*3
15523  15030  15735            STR   A*W(THD)
15524  13320  15751  GTTA3     EX-COM      TELY*W(MACL)
15525  13320  15752            EX-COM      TELY*W(KEX)
15526  10030  15747            PUT   W(RESTAT7)*W(INM)
15527  14030  00046
15530  75330  15750            IN    TELY*W(BUFFET)*MONITOR
15531  61000  15312            JP    CONTIN+2
15532  15030  15732  GTTA2     STR   A*W(ASTORE)
15533  14030  15733            STR   Q*W(QSTORE)
15534  10030  00167            PUT   W(00167)*W(BSTORE)
15535  14030  15734
15536  10030  15736            ENT   Q*W(KAT)
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15537  11000  00071              ENT  A*71
15540  04370  00000              COM  Q*A*YMORE
15541  61000  15524              JP   GTTA3
15542  11030  15736              ENT  A*W(KAT)
15543  21600  00061              SUB  A*61*APOS
15544  61000  15524              JP   GTTA3
15545  27000  00060              SUB  Q*60
15546  26030  15735              ADD  Q*W(THD)
15547  11030  70765              ENT  A*W(RLMTTY)
15550  52000  07700              SEL  CL*7700
15551  05000  00006              LSH  Q*6
15552  26070  00000              ADD  Q*A
15553  14030  70765              STR  Q*W(RLMTTY)
15554  61000  15312              JP   CONTIN+2
15555  13320  15751  GTTS        EX-COM    TELY*W(MACL)
15556  13320  15752              EX-COM    TELY*W(KEX)
15557  75330  15750              IN   TELY*W(BUFFET)*MONITOR
15560  10030  15745              PUT  W(RESTAT5)*W(INM)
15561  14030  00046
15562  61000  15312              JP   CONTIN+2
15563  15030  15732  GTTS1       STR  A*W(ASTORE)
15564  14030  15733              STR  Q*W(QSTORE)
15565  10030  00167              PUT  W(00167)*W(BSTORE)
15566  14030  15734
15567  10030  15736              ENT  Q*W(KAT)
15570  11000  00065              ENT  A*65
15571  04370  00000              COM  Q*A*YMORE
15572  61000  15555              JP   GTTS
15573  11030  15736              ENT  A*W(KAT)
15574  21600  00061              SUB  A*61*APOS
15575  61000  15555              JP   GTTS
15576  27000  0006?              SUB  Q*62
15577  14040  00(                STR  Q*A
15600  06000  00                 LSH  A*3
15601  15030  15735              STR  A*W(THD)
15602  13320  15751  GTTS3       EX-COM    TELY*W(MACL)
15603  13320  15752              EX-COM    TELY*W(KEX)
15604  10030  15746              PUT  W(RESTAT6)*W(INM)
15605  14030  00046
15606  75330  15750              IN   TELY*W(BUFFET)*MONITOR
15607  61000  15312              JP   CONTIN+2
15610  15030  15732  GTTS2       STR  A*W(ASTORE)
15611  14030  15733              STR  Q*W(QSTORE)
15612  10030  00167              PUT  W(00167)*W(BSTORE)
15613  14030  15734
15614  10030  15736              ENT  Q*W(KAT)
15615  11000  00071              ENT  A*71
15616  04370  00000              COM  Q*A*YMORE
15617  61000  15602              JP   GTTS3
15620  11030  15736              ENT  A*W(KAT)
15621  21600  00061              SUB  A*61*APOS
15622  61000  15602              JP   GTTS3
15623  27000  00060              SUB  Q*60
15624  26030  15735              ADD  Q*W(THD)
15625  11030  70765              ENT  A*W(RLMTTY)
15626  52030  71435              SEL  CL*770000
15627  05000  00014              LSH  Q*12D
15630  26070  00000              ADD  Q*A
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15631  14030  70765          STR  Q*W(RLMTTY)
15632  61000  15312          JP   CONTIN+2
15633  11000  00012  GTTD1A  SET  CHANGE*TO*CHANGE+10D
15634  24030  70770
15635  10030  70770  GTTD1B  ENT  Q*W(CHANGE)
15636  22000  00001          MUL  1
15637  20600  00000          ADD  A*Q*APOS
15640  14000  00000          CP   Q
15641  27600  00024          SUB  Q*20D*QPOS
15642  61000  15312          JP   CONTIN+2
15643  10600  00024          ENT  Q*20D*APOS
15644  14000  00000          CP   Q
15645  14030  70770          STR  Q*W(CHANGE)
15646  61000  15312          JP   CONTIN+2
15647  10000  00012  GTTU1A  SET  CHANGE*TO*CHANGE-10D
15650  35030  70770
15651  61000  15635          JP   GTTD1B
15652  12000  00000  GTTG1A  NO-OP
15653  15030  15732          STR  A*W(ASTORE)
15654  11010  15652          ENT  A*L(GTTG1A)
15655  15010  15244          STR  A*L(GTTY)
15656  11030  15732          ENT  A*W(ASTORE)
15657  61000  15353          JP   GTTG1
15660  12000  00000  GTTP1B  NO-OP
15661  15030  15732          STR  A*W(ASTORE)
15662  11010  15660          ENT  A*L(GTTP1B)
15663  15010  15244          STR  A*L(GTTY)
15664  11030  15732          ENT  A*W(ASTORE)
15665  61000  15403          JP   GTTP1
15666  12000  00000  GTTT1C  NO-OP
15667  15030  15732          STR  A*W(ASTORE)
15670  11010  15666          ENT  A*L(GTTT1C)
15671  15010  15244          STR  A*L(GTTY)
15672  11030  15732          ENT  A*W(ASTORE)
15673  61000  15427          JP   GTTT1
15674  12000  00000  GTTT2D  NO-OP
15675  15030  15732          STR  A*W(ASTORE)
15676  11010  15674          ENT  A*L(GTTT2D)
15677  15010  15244          STR  A*L(GTTY)
15700  11030  15732          ENT  A*W(ASTORE)
15701  61000  15456          JP   GTTT2
15702  12000  00000  GTTA1E  NO-OP
15703  15030  15732          STR  A*W(ASTORE)
15704  11010  15702          ENT  A*L(GTTA1E)
15705  15010  15244          STR  A*L(GTTY)
15706  11030  15732          ENT  A*W(ASTORE)
15707  61000  15505          JP   GTTA1
15710  12000  00000  GTTS1F  NO-OP
15711  15030  15732          STR  A*W(ASTORE)
15712  11010  15710          ENT  A*L(GTTS1F)
15713  15010  15244          STR  A*L(GTTY)
15714  11030  15732          ENT  A*W(ASTORE)
15715  61000  15563          JP   GTTS1
15716  12000  00000  GTTS2G  NO-OP
15717  15030  15732          STR  A*W(ASTORE)
15720  11010  15716          ENT  A*L(GTTS2G)
15721  15010  15244          STR  A*L(GTTY)
15722  11030  15732          ENT  A*W(ASTORE)
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15723  61000  15610          JP   GTTS2
15724  12000  00000  GTTA2H  NO-OP
15725  15030  15732          STR  A* (ASTORE)
15726  11010  15724          ENT  A*L(GTTA2H)
15727  15010  15244          STR  A*L(GTTY)
15730  11030  15732          ENT  A*W(ASTORE)
15731  61000  15532          JP   GTTA2
15732  00000  00000  ASTORE  0
15733  00000  00000  QSTORE  0
15734  00000  00000  BSTORE  0
15735  00000  00000  THD     0
15736  00000  00000  KAT     0
15737  00000  00000  THOLD   0
15740  65000  15652  RESTAT  RJP  GTTG1A
15741  65000  15660  RESTAT1 RJP  GTTP1B
15742  65000  15666  RESTAT2 RJP  GTTT1C
15743  65000  15674  RESTAT3 RJP  GTTT2D
15744  65000  15702  RESTAT4 RJP  GTTA1E
15745  65000  15710  RESTAT5 RJP  GTTS1F
15746  65000  15716  RESTAT6 RJP  GTTS2G
15747  65000  15724  RESTAT7 RJP  GTTA2H
15750  15736  15736  BUFFET  U-TAGKAT*KAT
15751  00000  00013  MACL    0    13
15752  00000  00030  KEX     0    30
                             END-PROC  GTTY
15753  00000  00000          PROCEDURE PROHISP
15754  11530  70754  JUMPINTO ENT  A*W(RESET)*ANOT
15755  61000  15763          JP   J2
15756  16030  70754          STR  B0*W(RESET)
15757  16030  71015          STR  B0*W(THCTR1)
15760  16030  71016          STR  B0*W(THCTR1+1)
15761  16030  71017          STR  B0*W(THCTR1+2)
15762  16030  65251          STR  B0*W(FORCE)
15763  12100  44475  J2      ENT  B1*18749D
15764  16031  17637          STR  B0*W(LEV+B1)
15765  72100  15764          BJP  B1*J2+1
15766  16030  65236          STR  B0*W(SSBC)
15767  16030  65235          STR  B0*W(ETL)
15770  16030  65240          STR  B0*W(SSSS)
15771  16030  65234          STR  B0*W(TESTY)
15772  10000  00002          PUT  2*W(ICMSEC)
15773  14030  65241
15774  12100  00035          ENT  B1*29D                    INITIALIZE CFIVE
15775  16031  71025  PC5     STR  B0*W(CFIVE+B1)
15776  72100  15775          BJP  B1*PC5
15777  11030  00160  J9      ENT  A*W(160)
16000  20000  00002          ADD  A*2
16001  15030  71022          STR  A*W(TCLOCK)
16002  11030  00160          ENT  A*W(160)
16003  20030  71432          ADD  A*60000D
16004  15030  71023          STR  A*W(INCLOCK)
16005  13130  71423          EX-COM    SAND*0*FORCE
16006  13130  17612          EX-COM    SAND*W(STEP1)*FORCE
16007  12200  00002          ENT  B2*2
16010  61000  16023          JP   P3
16011  12200  00002  PROJ    ENT  B2*2
16012  11430  70754          ENT  A*W(RESET)*AZERO
16013  61000  16330          JP   JMPNT
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16014  11030  00160  P5      ENT  A*W(160)
16015  04630  71022         COM  A*W(TCLOCK)*YLESS
16016  61000  16014         JP   P5
16017  20000  00002         ADD  A*2
16020  15030  71022         STR  A*W(TCLOCK)
16021  11000  00002         ENT  A*2
16022  24030  65241         RPL  A+Y*W(ICMSEC)
16023  11030  00160  P3      ENT  A*W(160)
16024  21730  71023         SUB  A*W(INCLOCK)*ANEG
16025  61000  16225         JP   PHSEXT
16026  73270  17550         IN   SAMPLE*W(ADBF)
16027  13270  17561         EX-COM    SAMPLE*W(MAD)*FORCE
16030  70000  00006         RPT  6
16031  12000  00000         NO-OP
16032  73270  17621         IN   SAMPLE*W(SPLED)
16033  13260  17552         EX-COM    SAMPLE*W(FLIP1)
16034  10030  65241         ENT  Q*W(ICMSEC)
16035  27700  00004         SUB  Q*4*QNEG
16036  65000  16154         RJP  PZZZ
16037  11430  65251  PROH    ENT  A*W(FORCE)*AZERO
16040  61000  16054         JP   GOMER
16041  16032  71015         STR  B0*W(THCTR1+B2)
16042  12500  00010         ENT  B5*8D
16043  61000  16210         JP   SETCFIVE
16044  10031  71025  PRH2    ENT  Q*W(CFIVE+B1)
16045  14036  71025         STR  Q*W(CFIVE+B6)
16046  27000  00001         SUB  Q*1
16047  27732  70741         SUB  Q*W(THAT+B2)*QNEG
16050  36032  71015         RPL  Y+1*W(THCTR1+B2)
16051  12101  00001         INCREMENT B1*1
16052  12606  00001         INCREMENT B6*1
16053  72500  16044         BJP  B5*PRH2
16054  10052  64336  GOMER   ENT  Q*LX(SHTDTA+B2)
16055  11430  65251         ENT  A*W(FORCE)*AZERO
16056  61000  16062         JP   PRH41
16057  14036  71025         STR  Q*W(CFIVE+B6)
16060  27000  00001         SUB  Q*1
16061  27732  70741         SUB  Q*W(THAT+B2)*QNEG
16062  36032  71015  PRH41   RPL  Y+1*W(THCTR1+B2)
16063  11032  71015         ENT  A*W(THCTR1+B2)
16064  21700  00006         SUB  A*6*ANEG
16065  61000  16070         JP   PROM
16066  72200  16037         BJP  B2*PROH
16067  61000  16011         JP   PROJ
16070  11430  65234  PROM    ENT  A*W(TESTY)*AZERO
16071  61000  16152         JP   PRATT
16072  36030  65234         RPL  Y+1*W(TESTY)
16073  11030  65251         ENT  A*W(FORCE)
16074  15020  64662         STR  A*U(ID+2)
16075  13130  17613         EX-COM    SAND*W(STEP2)*FORCE
16076  66431  00000         SIL-EX    SHOTCHAN
16077  65000  13626         UPITIME
16100  66430  00000         RIL-EX    SHOTCHAN
16101  10030  00160         ENT  Q*W(160)
16102  26030  70756         ADD  Q*W(ICCYS)
16103  27030  70755         SUB  Q*W(LASTIME)
16104  22000  00764         MUL  764
16105  26000  00400         ADD  Q*400
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16106  03000  00011            RSH  AQ*9D
16107  14010  64665            STR  Q*L(ID+5)
16110  10030  70757            ENT  Q*W(ISEC)
16111  14020  64665            STR  Q*U(ID+5)
16112  10030  70760            ENT  Q*W(IMINUTE)
16113  14010  64664            STR  Q*L(ID+4)
16114  10030  70761            ENT  Q*W(IHOUR)
16115  14020  64664            STR  Q*U(ID+4)
16116  10030  70762            ENT  Q*W(IDAY)
16117  14010  64663            STR  Q*L(ID+3)
16120  10030  70763            ENT  Q*W(IMONTH)
16121  14020  64663            STR  Q*U(ID+3)
16122  11030  65237            ENT  A*W(MFLAG)
16123  15010  64723            STR  A*L(ID+35D)
16124  11030  65235            ENT  A*W(ETL)
16125  15030  65247            STR  A*W(SA)
16126  11430  70332            ENT  A*W(INI)*AZERO
16127  61000  16133            JP   PATCH
16130  16050  70332            STR  B0*CPL(INI)
16131  10030  00160            PUT  W(160),W(CWTIMER)
16132  14030  70737
16133  11430  65251  PATCH     ENT  A*W(FORCE)*AZERO
16134  61000  16143            JP   B0M
16135  10030  00160            ENT  Q*W(160)
16136  27030  70755            SUB  Q*W(LASTIME)
16137  27000  74000            SUB  Q*30720D
16140  01000  00012            RSH  Q*10D
16141  14070  65356            STR  Q*CPW(CTSNDS)
16142  61000  16147            JP   PIA
16143  10030  00160  B0M       ENT  Q*W(160)
16144  26000  11610            ADD  Q*5000D
16145  16050  70332            STR  B0*CPL(INI)
16146  61000  16151            JP   PR4
16147  10030  00160  PIA       ENT  Q*W(160)
16150  26000  35230            ADD  Q*15000D
16151  14030  71023  PR4       STR  Q*W(INCLOCK)
16152  72200  16037  PRATT     BJP  B2*PR0H
16153  61000  16011            JP   PR0J
16154  12000  00000  PZZ2      NO-OP
16155  16030  65241            STR  B0*W(ICMSEC)
16156  36030  65236            RPL  Y+1*W(SSBC)
16157  12500  00011            ENT  B5*9D
16160  11030  65235            ENT  A*W(ETL)
16161  20000  00011            ADD  A*9D
16162  04700  44476            COM  A*18750D*YMORE
16163  61000  16166            JP   PZZC
16164  12170  00000            ENT  B1*A
16165  61000  16170            JP   PZZD
16166  16030  65235  PZZC      STR  B0*W(ETL)
16167  12100  00011            ENT  B1*9D
16170  11530  65240  PZZD      ENT  A*W(SSSS)*ANOT
16171  61000  16202            JP   PZZB
16172  10055  64336  PZZA      ENT  Q*LX(SHTDTA+B5)
16173  14011  17637            STR  Q*L(LEV+B1)
16174  72100  16175            INCREMENT B1*-1
16175  72500  16172            BJP  B5*PZZA
16176  16030  65240            STR  B0*W(SSSS)
16177  11000  00012            ENT  A*10D
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16200  24030  65235          RPL   A+Y*W(ETL)
16201  61010  16154          JP    L(PZZ
16202  10055  64336  PZZB    ENT   Q*LX(  TOTA+B5)
16203  14021  17637          STR   Q*U(LEV+B1)
16204  72100  16205          INCREMENT B1*-1
16205  72500  16202          BJP   B5*PZZB
16206  36030  65240          RPL   Y+1*W(SSSS)
16207  61010  16154          JP    L(PZZZ)
16210  11402  00000  SETCFIVE ENT   A*B2*AZERO
16211  61000  16215          JP    SET2
16212  12100  00001          ENT   B1*1
16213  12600  00000          ENT   B6*0
16214  61000  16044          JP    PRH2
16215  21400  00001  SET2    SUB   A*1*AZERO
16216  61000  16222          JP    SET3
16217  12100  00013          ENT   B1*13
16220  12600  00012          ENT   B6*12
16221  61000  16044          JP    PRH2
16222  12100  00025  SET3    ENT   B1*25
16223  12600  00024          ENT   B6*24
16224  61000  16044          JP    PRH2
16225  11410  70332  PHSEXT  ENT   A*L(INI)*AZERO
16226  61000  16237          JP    PH6
16227  66431  00000          SIL-EX     SHOTCHAN
16230  65000  13626          RJP   UPITIME
16231  66430  00000          RIL-EX     SHOTCHAN
16232  16030  00160          STR   B0*W(160)
16233  16030  65241          STR   B0*W(ICMSEC)
16234  16030  70755          STR   B0*W(LASTIME)
16235  16030  65356          STR   B0*W(CTSNDS)
16236  61000  15777          JP    J9
16237  16030  65235  PH6     STR   B0*W(ETL)
16240  36030  70767          RPL   Y+1*W(HOURCNTR)
16241  16030  70754          STR   B0*W(RESET)
16242  11030  70770          ENT   A*W(CHANGE)
16243  24030  65356          RPL   A+Y*W(CTSNDS)
16244  16030  70770          STR   B0*W(CHANGE)
16245  13130  17614          EX-COM     SAND*W(STEP3)*FORCE
16246  11530  65234          ENT   A*W(TESTY)ANOT
16247  61000  16252          JP    CBJ
16250  16020  64662          STR   B0*U(ID+2)
16251  61000  16253          JP    CBK
16252  16060  64662  CBJ     STR   B0*CPU(ID+2)
16253  74370  17631  CBK     OUT   MAGGY*W(IDBUF)
16254  12130  65242          ENT   B1*W(MTN)
16255  13371  17555          EX-COM     MAGGY*W(MTCD+B1)*FORCE
16256  11530  71021  ZAP     ENT   A*W(TFLAG)*ANOT
16257  61000  16256          JP    ZAP
16260  16030  71021          STR   B0*W(TFLAG)
16261  11030  65237          ENT   A*W(MFLAG)
16262  21500  00002          SUB   A*2*ANOT
16263  61000  16314          JP    TWIGG
16264  11030  65247          ENT   A*W(SA)
16265  21600  00764          SUB   A*500D*APOS
16266  61000  16314          JP    TWIGG
16267  12170  00000          ENT   B1*A
16270  10030  65237          ENT   Q*W(MFLAG)
16271  26000  00001          ADD   Q*1
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16272  22000  14152              MUL  6250D
16273  27000  00001              SUB  Q*1
16274  14030  00162              STR  Q*W(162)
16275  11030  65247              ENT  A*W(SA)
16276  20002  00000              ADD  A*B2
16277  21700  44476              SUB  A*18750D*ANE0
16300  61000  16302              JP   TICKLE
16301  11000  00000              ENT  A*0
16302  12370  00000  TICKLE      ENT  B3*A
16303  10031  17637  TWEET       PUT  W(LEV+B1)*W(SQ)
16304  14030  65250
16305  10033  17637              PUT  W(LEV+B3)*W(LEV+B1)
16306  14031  17637
16307  10030  65250              PUT  W(SQ)*W(LEV+B3)
16310  14033  17637
16311  12101  00001              INCREMENT B1*1
16312  12303  00001              INCREMENT B3*1
16313  72200  16303              BJP  B2*TWEET
16314  11530  65237  TWIGG       ENT  A*W(MFLAG)*ANOT
16315  61000  16324              JP   FIVESEC
16316  21500  00001              SUB  A*1*ANOT
16317  61000  16322              JP   TENSEC
16320  74370  17627              OUT  MAGGY*W(MTBF15)
16321  61000  16325              JP   TOOT
16322  74370  17625  TENSEC      OUT  MAGGY*W(MTBF10)
16323  61000  16325              JP   TOOT
16324  74370  17624  FIVESEC     OUT  MAGGY*W(MTBF5)
16325  12130  65242  TOOT        ENT  B1*W(MTN)
16326  13371  17555              EX-COM    MAGGY*W(MTCD+B1)*FORCE
16327  61010  15753              RETURN
16330  13130  17614  JMPNT       EX-COM    SAND*W(STEP3)*FORCE
16331  61000  15754              JP   JUMPINTO
                                 END-PROC  PROHISP
16332  00000  00000              PROCEDURE PTTY
                                 COMMENT   TYPES LATEST 60 VALUES OF
                                 COMMENT   TOTAL PROP LOSS AND SN RATIO
16333  65000  10041              TYPET$CR$TOTAL PROPAGATION LOSS  SN RATIO
16334  76642  06441
16335  54006  06220
16336  60414  74164
16337  51205  60054
16340  20636  30000
16341  63560  06241
16342  64512  00000
16343  00007  70000
16344  65000  10041              TYPET$CR$RANGE IN HUNDRED YARDS
16345  76624  15647
16346  45005  15600
16347  50655  64462
16350  45440  07141
16351  62446  30035
16352  00007  70000
16353  10030  64350              TYPE$RANGE
16354  11000  00000
16355  65000  10306
16356  12100  00000              CL   B1
16357  10031  71067  PTTY2       PUT  W(TPL+B1)*W(TYPECELL1)
16360  14030  71064
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16361  10031  71151              PUT  W(SNRAT+B1)*W(TYPECELL2)
16362  14030  71065
16363  16110  16374              STR  B1*L(PTTY1)
16364  65000  10041              TYPET$CR$
16365  76007  70000
16366  10030  71064              TYPE$TYPECELL1*TYPECELL2
16367  11000  00003
16370  65000  10306
16371  10030  71065
16372  11000  00003
16373  65000  10306
16374  12100  00000  PTTY1       ENT  B1*0
16375  71100  00061              BSK  B1*49D
16376  61000  16357              JP   PTTY2
16377  65000  10041              TYPET$CR$PROP LOSS BASED ON 5 MIN AVGES
16400  7660 6  22060
16401  00542  06363
16402  00424  16345
16403  4406 2  05600
16404  2506 5  55156
16405  00416  64745
16406  6306 7  70000
16407  12100  00054              ENT  B1*44D
16410  1003 1  70333  PTTY10     PUT  W(PLVSRG5MIN+B1)*W(TYPECELL1)
16411  1403 0  71064
16412  6506 0  10041              TYPET$CR$
16413  7606 7  70000
16414  1003 0  71064              TYPE$TYPECELL1
16415  1106 0  00003
16416  6506 0  10306
16417  7210 0  16410              BJP  B1*PTTY10
16420  61010  16332              RETURN
                                  END-PROC  PTTY
16421  00000  00000              PROCEDURE POUTPUT
                                  COMMENT   FEEDS 3 FEET OF PAPER
16422  12100  00330              ENT  B1*216D
16423  16110  16425  POUT4       STR  B1*L(POUT3)
16424  65000  13614              LFANDCR
16425  12100  00000  POUT3       ENT  B1*0
16426  72100  16423              BJP  B1*POUT4
                                  COMMENT   GIVES SIDE BY SIDE LISTING OF
                                  COMMENT   TOTAL PROP LOSS AND S/N RATIO
                                  COMMENT   ON MONROE AT END OF HOUR
16427  70100  00030              CLEAR24D*PLAB
16430  16030  71233
16431  12700  71233              FORM-TEXT PLAB*11D*TOTAL PROPAGATION LOSS
16432  65000  10176
16433  00006  00002
16434  77777  77777
16435  77000  00000
16436  66036  62446
16437  01525  40352
16440  24322  46634
16441  03500  14603
16442  65650  10101
16443  01010  10101
16444  12700  71233              FORM-TEXT PLAB*55D*S/N RATIO
16445  65000  10176
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16446  00003  00012
16447  00000  00077
16450  77777  77777
16451  01010  10165
16452  64500  15424
16453  66340  30101
16454  11000  71233          ENT  A*PLAB
16455  65000  13425          MONROE
16456  70100  00030          CLEAR24D*PLAB
16457  16030  71233
16460  12700  71233          FORM-TEXT PLAB*25D*RANGE
16461  65000  10176
16462  00002  00004
16463  00000  00077
16464  77777  77777
16465  01010  10154
16466  24503  23001
16467  10030  64350          FORM-DEC  PLAB*31D*RANGE
16470  12700  71241
16471  11000  00000
16472  65000  10453
16473  11000  71233          ENT  A*PLAB
16474  65000  13425          RJP  MONROE
16475  70100  00030          CLEAR24D*PLAB
16476  16030  71233
16477  12700  71233          FORM-TEXT PLAB*25D*MONTH
16500  65000  10176
16501  00002  00004
16502  00000  00077
16503  77777  77777
16504  01010  10147
16505  03506  63301
16506  10030  70763          FORM-DEC  PLAB*31D*IMONTH
16507  12700  71241
16510  11000  00000
16511  65000  10453
16512  12700  71233          FORM-TEXT PLAB*37D*DAY
16513  65000  10176
16514  00002  00007
16515  00777  77777
16516  77770  00000
16517  01272  47301
16520  01010  10101
16521  10030  70762          FORM-DEC  PLAB*41D*IDAY
16522  12700  71243
16523  11000  00000
16524  65000  10453
16525  12700  71233          FORM-TEXT PLAB*46D*HOUR
16526  65000  10176
16527  00002  00011
16530  77777  77777
16531  77000  00000
16532  33036  75401
16533  01010  10101
16534  10030  70761          FORM-DEC  PLAB*51D*IHOUR
16535  12700  71245
16536  11000  00000
16537  65000  10453
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16540  12700  71233            FORM-TEXT PLAB*54D*MINUTE
16541  65000  10176
16542  00002  00012
16543  00000  07777
16544  77777  77700
16545  01010  14734
16546  50676  65001
16547  10030  70760            FORM-DEC  PLAB*61D*IMINUTE
16550  12700  71247
16551  11000  00000
16552  65000  10453
16553  12700  71233            FORM-TEXT PLAB*64D*SECOND
16554  65000  10176
16555  00002  00014
16556  00000  07777
16557  77777  77700
16560  01010  16530
16561  26035  02701
16562  10030  70757            FORM-DEC  PLAB*71D*ISEC
16563  12700  71251
16564  11000  00000
16565  65000  10453
16566  11000  71233            ENT  A*PLAB
16567  65000  13425            MONROE
16570  12100  00000            CL   B1
16571  70100  00030  POUT1     CLEAR24D*PLAB
16572  16030  71233
16573  10031  71067            PUT  W(TPL+B1)*W(FORMCELL)
16574  14030  71066
16575  10030  71066            FORM-DEC  PLAB*1*FORMCELL
16576  12700  71233
16577  11000  00003
16600  65000  10453
16601  10031  71070            PUT  W(TPL+1+B1)*W(FORMCELL)
16602  14030  71066
16603  10030  71066            FORM-DEC  PLAB*21D*FORMCELL
16604  12700  71237
16605  11000  00003
16606  65000  10453
16607  10031  71151            PUT  W(SNRAT+B1)*W(FORMCELL)
16610  14030  71066
16611  10030  71066            FORM-DEC  PLAB*41D*FORMCELL
16612  12700  71243
16613  11000  00003
16614  65000  10453
16615  10031  71152            PUT  W(SNRAT+1+B1)*W(FORMCELL)
16616  14030  71066
16617  10030  71066            FORM-DEC  PLAB*61D*FORMCELL
16620  12700  71247
16621  11000  00003
16622  65000  10453
16623  11000  71233            ENT  A*PLAB
16624  65000  13425            MONROE
16625  12101  00001            ENT  B1*1+B1
16626  71100  00061            BSK  B1*49D
16627  61000  16571            JP   POUT1
16630  70100  00030            CLEAR24D*PLAB
16631  16030  71233
```

```
16632  12700  71233            FORM-TEXT PLAB*10*PROP LOSS BASED ON 5 MIN AVGES
16633  65000  10176
16634  00007  00001
16635  00007  77777
16636  77777  77700
16637  01015  25403
16640  52014  60365
16641  65012  52465
16642  30270  10350
16643  01100  14734
16644  50012  47032
16645  30650  10101
16646  11000  71233            ENT  A*PLAB
16647  65000  13425            MONROE
16650  12100  00054            ENT  B1*44D
16651  70100  00030  POUT20    CLEAR24D*PLAB
16652  16030  71233
16653  10031  70333            PUT  W(PLVSRG5MIN+B1)*W(FORMCELL)
16654  14030  71066
16655  10030  71066            FORM-DEC  PLAB*21D*FORMCELL
16656  12700  71237
16657  11000  00003
16660  65000  10453
16661  11000  71233            ENT  A*PLAB
16662  65000  13425            MONROE
16663  72100  16651            BJP  B1*POUT20
16664  61010  16421            RETURN
                               END-PROC  POUTPUT
16665  00000  00000            PROCEDURE RYTATABLE
                               COMMENT   FILLS TABLES FOR PRINT
                               COMMENT   OUT AT END OF HOUR
16666  10030  70767            ENT  Q*W(HOURCNTR)
16667  27000  00001            SUB  Q*1
16670  22000  00012            MUL  10D
16671  14010  00161            STR  Q*L(00161)
16672  12200  00000            CL   B2
16673  11032  64526  RYTBL1    ENT  A*W(PROPL+B2)
16674  10032  64545            ENT  Q*W(SNTAB+B2)
16675  15031  71067            STR  A*W(TPL+B1)
16676  14031  71151            STR  Q*W(SNRAT+B1)
16677  12101  00001            ENT  B1*1+B1
16700  71200  00011            BSK  B2*9D
16701  61000  16673            JP   RYTBL1
16702  61010  16665            RETURN
                               END-PROC  RYTATABLE
                               PROGRAM
16703  00000  00000            PROCEDURE RNGTVLTM
16704  10030  71264            ENT  Q*W(BANG)
16705  22000  01750            MUL  1000D
16706  23000  02000            DIV  1024D
16707  14030  71012            STR  Q*W(ALPHA)
16710  10030  71265            ENT  Q*W(BANG+1)
16711  22000  01750            MUL  1000D
16712  34030  71012            RPL  Y+Q*W(ALPHA)
16713  10030  71266            ENT  Q*W(BANG+2)
16714  22030  71432            MUL  60000D
16715  34030  71012            RPL  Y+Q*W(ALPHA)
16716  10030  16731            ENT  Q*W(DELAYTIME)
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16717  35030  71012            RPL  Y-0*W(ALPHA)
16720  12100  00000            CL   B1
16721  10031  71271  MVBANG    ENT  Q*W(BANG+5+B1)
16722  14031  71264            STR  Q*W(BANG+B1)
16723  71100  00124            BSK  B1*124
16724  61000  16721            JP   MVBANG
16725  37630  71416            RPL  Y-1*W(BANGTIME)*APOS     IN A REGISTER ALSO
16726  16030  71416            STR  B0*W(BANGTIME)
16727  65040  14712            RJP  TVLTMRANGE
16730  61010  16703            RETURN
16731  00000  00764  DELAYTIME 500D                          DELAY TIME IN MS
                               END-PROC  RNGTVLTM
16732  00000  00000            PROCEDURE SHOTOFF
                               COMMENT   PUTS SHOT TIME IN TABLE BANG
                               COMMENT   ON INTERRUPT FROM BANG BOX
16733  16510  16774            STR  B5*L(SAVSHOTB5)
16734  16610  16775            STR  B6*L(SAVSHOTB6)
16735  16710  16776            STR  B7*L(GEORGESAYS)
16736  15030  17002            STR  A*W(SAVSHOTA)
16737  14030  17003            STR  Q*W(SAVSHOTQ)
16740  73070  17622            IN   EXCLOK*W(BAF)
16741  62040  16741  WAF       JP   WAF*EXPI
16742  11030  71417            ENT  A*W(BAF1)
16743  21630  64335            SUB  A*W(GARBAGE)APOS
16744  51040  77777            CP   A
16745  21600  00003            SUB  A*3*APOS
16746  61000  16774            JP   SAVSHOTB5
16747  11030  64335            ENT  A*W(GARBAGE)
16750  15030  71417            STR  A*W(BAF1)
16751  65000  13626            UPITIME
16752  11030  71416            ENT  A*W(BANGTIME)
16753  21700  00022            SUB  A*22*ANEG
16754  61000  16774            JP   SAVSHOTB5
16755  13320  17551            EX-COM    TELY*W(BIF)
16756  10030  70756            SET  BANG(BANGTIME,ICLOCKCYS)*TO*ICCYS
16757  12530  71416
16760  70300  00005
16761  12605  00000
16762  14036  71264
16763  10030  70757            SET  BANG(BANGTIME,BSEC)*TO*ISEC
16764  14036  71265
16765  10030  70760            SET  BANG(BANGTIME,BMIN)*TO*IMINUTE
16766  14036  71266
16767  10030  70761            SET  BANG(BANGTIME,BHOUR)*TO*IHOUR
16770  14036  71267
16771  10030  70762            SET  BANG(BANGTIME,BDAY)*TO*IDAY
16772  14036  71270
16773  36030  71416            SET  BANGTIME*TO*BANGTIME+1
16774  12500  00000  SAVSHOTB5 ENT  B5*0
16775  12600  00000  SAVSHOTB6 ENT  B6*0
16776  12700  00000  GEORGESAYSENT  B7*0
16777  11030  17002            ENT  A*W(SAVSHOTA)
17000  10030  17003            ENT  Q*W(SAVSHOTQ)
17001  60110  16732            RETURN    RIL
17002  00000  00000  SAVSHOTA  0
17003  00000  00000  SAVSHOTQ  0
                               END-PROC  SHOTOFF
17004  00000  00000            PROCEDURE EXECP1
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17005  66021  00000            SIL-EX    ALL
17006  11030  17615            ENT   A*W(TELYCALL)
17007  15030  00026            STR   A*W(TTYINT)          SET UP TELETYPE INTERRUPT
17010  11030  17617            ENT   A*W(SHOTCALL)
17011  15030  00030            STR   A*W(SHOTINT)         SET UP SHOT INTERRUPT CHANNEL
17012  11030  17616            ENT   A*W(MAGCALL)
17013  15030  00027            STR   A*W(MAGINT)          SET UP MAG TAPE INTERRUPT
17014  16030  71417            STR   B0*W(BAF1)
17015  66330  00000            RIL-EX    TELY
17016  66370  00000            RIL-EX    MAGGY
17017  66430  00000            RIL-EX    SHOTCHAN         BANG BOX CHANNEL
17020  10000  03522            PUT   1874D*W(WORDS)
17021  14030  70774
17022  10000  00011            PUT   9D*W(ITEMS)
17023  14030  70775
17024  16030  65242            STR   B0*W(MTN)            SET OUTFLAG FOR UNIT 1
17025  10000  00002            PUT   2*W(MFLAG)
17026  14030  65237
17027  16030  65245            STR   B0*W(LTAPE)          CLEAR LOW TAPE FLAG
17030  16030  65246            STR   B0*W(PAR)            CLEAR PARITY ERROR FLAG
17031  16030  70766            STR   B0*W(RWT4)
17032  16030  71021            STR   B0*W(TFLAG)
17033  13370  17560            EX-COM    MAGGY*W(MCMT)*FORCE    REQUEST CONTROL OF MT
17034  11530  71021  EXAAA     ENT   A*W(TFLAG)*ANOT
17035  61000  17034            JP    EXAAA                WAIT FOR INTRRPT
17036  16050  71024            STR   B0*CPL(CFLAG)        SET GTTY FOR PHASE 1A
17037  16030  71416            STR   B0*W(BANGTIME)
17040  73270  17550            IN    SAMPLE*W(ADBF)
17041  13260  17561            EX-COM    SAMPLE*W(MAD)    MASTER CLEAR A/D
17042  16030  65243            STR   B0*W(SHTCTR)         CLEAR SHOT COUNTER
17043  16030  71014            STR   B0*W(SERISCNTR)
17044  16030  70770            STR   B0*W(CHANGE)
17045  65000  13323            TAPESTAT                   TEST TAPE STATUS
17046  11030  64350            ENT   A*W(RANGE)
17047  15030  64661            STR   A*W(ID+1)            SET ESTIMATED RANFE IN ID
17050  70100  00132            CLEAR90D*BANG
17051  16030  71264
17052  61100  17054            JP    EXABA*KEY1
17053  65000  13677            TIMESYNC
17054  16030  00160  EXABA     STR   B0*W(160)
17055  16030  70755            STR   B0*W(LASTIME)
17056  16030  65356            STR   B0*W(CTSNDS)
17057  10000  00001            PUT   1*U(MTN)
17060  14020  65242
17061  65000  14755            GNOISE    INPUT*MTN
17062  65000  10041            TYPET$CR$NOISE SAMPLE TAKEN
17063  76562  05163
17064  45006  34155
17065  60544  50064
17066  41534  55600
17067  00007  70000
17070  65000  10041            TYPET$CR$SET ATTENUATORS FOR SIGNAL
17071  76634  56400
17072  41646  44556
17073  65416  42062
17074  63004  62062
17075  00635  14756
17076  41547  70000
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17077  61300  17115  EXACA    JP    EXAA*KEY3
17100  11500  70754           ENT   A*W(RESET)*ANOT
17101  61000  17077           JP    EXACA
17102  65000  10041           TYPETSCRSRESET TAKING ANOTHER NOISE SAMPLE
17103  76624  56345
17104  64006  44153
17105  51564  70041
17106  56206  45045
17107  62005  62051
17110  63450  06341
17111  55605  44500
17112  00007  70000
17113  61000  17054           JP    EXABA
17114  61000  17077           JP    EXACA
17115  16030  70764  EXAA     STR   B0*W(RLM)
17116  16030  70767  PINSERT2 STR   B0*W(HOURCNTR)
17117  16030  71443           CL    W(WAIT3MIN)
17120  16030  70765           STR   B0*W(RLMTTY)          CLEAR GRAPH REQUESTS
17121  16030  71263           STR   B0*W(CYCLEFLAG)
17122  61100  17124           JP    EXAC*KEY1             KEYU SET IF EX CLOCK FAILS
17123  65000  13677           TIMESYNC                    SNYC INTERNAL TIMES TO EXTERNAL CLO
17124  16030  00160  EXAC     STR   B0*W(160)             ZERO INTERNAL CLOCK
17125  16030  70755           STR   B0*W(LASTIME)
17126  16030  65356           STR   B0*W(CTSNOS)
17127  12000  00000           NO-OP
17130  12000  00000           NO-OP
17131  12200  00002           ENT   B2*2
17132  12100  00010           ENT   B1*10
17133  10032  65171  EXAB     ENT   Q*W(GTHRESH+B2)
17134  14021  64660           STR   Q*U(ID+B1)            STORE NOISE THRESHOLD IN ID
17135  11032  65050           ENT   A*W(NATT+B2)
17136  15011  64660           STR   A*L(ID+B1)            NOISE ATTEN SETTINGS TO ID
17137  72100  17140           INCREMENT B1*-1
17140  72200  17133           BJP   B2*EXAB
17141  12000  00000           NO-OP
17142  16030  70332           STR   B0*W(I  )
17143  11000  00005           ENT   A*5
17144  15030  70753           STR   A*W(REPRATE)          NUMBER OF SHOTS PER HOUR
17145  12000  00000           NO-OP
17146  16030  65234  EXAE     STR   B0*W(TESTY)           CLEAR DUD FLAG
17147  16030  65251           STR   B0*W(FORCE)
17150  11030  71263           ENT   A*W(CYCLEFLAG)
17151  60400  17166           JP    FT2500*AZERO
17152  21000  00001           SUB   A*1
17153  60500  17161           JP    FT500*ANOT
17154  10000  00005  FT60     ENT   Q*5
17155  36030  71263           RPL   Y+1*W(CYCLEFLAG)
17156  11000  00170           ENT   A*120D
17157  12100  00001           ENT   B1*1
17160  61000  17177           JP    EXAEA
17161  10000  00004  FT500    ENT   Q*4
17162  36030  71263           RPL   Y+1*W(CYCLEFLAG)
17163  11000  00170           ENT   A*120D
17164  12100  00002           ENT   B1*2
17165  61000  17177           JP    EXAEA
17166  10000  00003  FT2500   ENT   Q*3
17167  12100  00003           ENT   B1*3
17170  11030  71443           ENT   A*W(WAIT3MIN)
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17171  60500  17175          JP    PEXEC3*ANOT
17172  11000  00170          ENT   A*120D
17173  16070  71443          STR   B0*CPW(WAIT3MIN)
17174  61000  17177          JP    EXAEA
17175  36030  71263  PEXEC3   RPL   Y+1*W(CYCLEFLAG)
17176  11000  00264          ENT   A*180D
17177  15030  13675  EXAEA    STR   A*W(CYCLENGTH)          TIME BETWEEN SHOTS
17200  14030  70752          STR   Q*W(CODEWORD)           SOURCE LEVEL
17201  16130  70751          STR   B1*W(DEPTH)             DEPTH CODE FOR SHOT
17202  12100  00002          ENT   B1*2
17203  16031  71015  EXAD     STR   B0*W(THCTR1+B1)         CLEAR THRESHOLD COUNTERS
17204  72100  17203          BJP   B1*EXAD
17205  12100  00011          ENT   B1*9D
17206  12200  00000          ENT   B2*0
17207  10032  65067  EXAG     ENT   Q*W(ATTEN+B2)           PUT
17210  14021  64660          STR   Q*U(ID+B1)              SIGNAL
17211  12202  00001          ENT   B2*B2+1                 ATTENUATOR
17212  10032  65067          ENT   Q*W(ATTEN+B2)           VALUES
17213  14011  64660          STR   Q*L(ID+B1)              IN
17214  12202  00001          ENT   B2*B2+1
17215  71100  00015          BSK   B1*13D
17216  61000  17207          JP    EXAG                    RECORD
17217  16010  64723          STR   B0*L(ID+35D)
17220  36030  65243          RPL   Y+1*W(SHTCTR)
17221  15010  64660          STR   A*L(ID)                 CURRENT SHOT NUMBER
17222  11030  70751          ENT   A*W(DEPTH)
17223  15010  64662          STR   A*L(ID+2)
17224  12100  00002          ENT   B1*2
17225  11031  65067  EXAL     ENT   A*W(ATTEN+B1)
17226  21631  65050          SUB   A*W(NATT+B1)*APOS
17227  61000  17232          JP    EY
17230  60400  17232          JP    EY*AZERO
17231  61000  17235          JP    EZ1
17232  10000  00001  EY       PUT   1*W(DUMP)
17233  14030  71063
17234  61000  17256          JP    EXAJ
17235  21400  00001  EZ1      SUB   A*1*AZERO
17236  61000  17242          JP    EZ2
17237  10000  00012          PUT   10D*W(DUMP)
17240  14030  71063
17241  61000  17256          JP    EXAJ
17242  21400  00001  EZ2      SUB   A*1*AZERO
17243  61000  17247          JP    EZ3
17244  10000  00144          PUT   100D*W(DUMP)
17245  14030  71063
17246  61000  17256          JP    EXAJ
17247  21400  00001  EZ3      SUB   A*1*AZERO
17250  61000  17254          JP    EZ4
17251  10000  01750          PUT   1000D*W(DUMP)
17252  14030  71063
17253  61000  17256          JP    EXAJ
17254  10000  23420  EZ4      PUT   10000D*W(DUMP)
17255  14030  71063
17256  11000  00000  EXAJ     CL    A
17257  71031  65171          BSK   B0*W(GTHRESH+B1)
17260  10131  65171          ENT   Q*W(GTHRESH+B1)*SKIP
17261  10100  00003          ENT   Q*3*SKIP
17262  23030  71063          DIV   W(DUMP)
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17263  14031  70741          STR  Q*W(THAT+B1)
17264  72100  17225  EXAK    BJP  B1*EXAL
17265  65000  15753          PROHISP                    START SAMPLING
17266  16030  70410          STR  B0*W(CPHP)
17267  63340  17267  EXAM    JP   EXAM*MAGOO
17270  65000  17364          RJP  TAPEWAIT
17271  16030  71021          STR  B0*W(TFLAG)
17272  74370  17631          OUT  MAGGY*W(IDBUF)        WRITE ID RECORD
17273  13370  17604          EX-COM    MAGGY*W(PNCB)*FORCE     ON UNIT 2
17274  11530  71021  EXAN    ENT  A*W(TFLAG)*ANOT
17275  61000  17274          JP   EXAN                  WAIT FOR INTERRUPT
17276  16030  71021          STR  B0*W(TFLAG)
17277  12100  00000  EXAOA   ENT  B1*0
17300  11410  65242          ENT  A*L(MTN)*AZERO
17301  12100  00002          ENT  B1*2                  SET EOR UNIT 3
17302  13371  17605          EX-COM    MAGGY*W(WEOF+B1)*FORCE     WRITE END FILE
17303  11530  71021  EXAO    ENT  A*W(TFLAG)*ANOT
17304  61000  17303          JP   EXAO
17305  16030  71021          STR  B0*W(TFLAG)
17306  65000  16703          RNGTVLTM                   CALCULATE RANGE AND TRAVEL TIME
17307  70100  00162          CLEAR114D*NOP
17310  16030  64370
17311  70100  00104          CLEAR68D*ASUMRNW
17312  16030  65252
17313  65000  12536          PHASE2M
17314  74370  17630          OUT  MAGGY*W(PRODATABF)    WRITE PROCESSED DATA RECORD
17315  13370  17604          EX-COM    MAGGY*W(PMCB)*FORCE
17316  11530  71021  EXAS    ENT  A*W(TFLAG)*ANOT
17317  61000  17316          JP   EXAS
17320  16030  71021          STR  B0*W(TFLAG)
17321  13370  17606          EX-COM    MAGGY*W(WEOF+1)*FORCE      NEO FILE
17322  11530  71021  EXAT    ENT  A*W(TFLAG)*ANOT
17323  61000  17322          JP   EXAT
17324  16030  71021          STR  B0*W(TFLAG)
17325  65000  16665          RJP  RYTATABLE
17326  10030  70740          ENT  Q*W(SOA)              SPEED OF ADVANVE IN KNOTS
17327  22000  00024          MUL  20D                   CHANGE TO YARDS IN 100S
17330  22030  13675          MUL  W(CYCLENGTH)          TIME BETWEEN SHOTS IN SECONDS
17331  23000  07020          DIV  3600D                 CONVERT TO HOURS
17332  26030  64350          ADD  Q*W(RANGE)
17333  14030  64661          STR  Q*W(ID+1)             SET ESTIMATED RANGE IN ID
17334  21700  03410          SUB  A*1800D*ANEG          TEST REMAINDER
17335  36030  64661          RPL  Y+1*W(ID+1)           ROUND OFF TO 100 YARDS
17336  65000  13323          TAPESTAT                   CHECK TAPE STATUSS
17337  36030  71014          RPL  Y+1*W(SERISCNTR)      UPDATE HOURLY SHOT COUNTER
17340  65000  10041          TYPETSCR$
17341  76007  70000
17342  10030  64350          TYPESRANGE*BANGTIME*SHTCTR
17343  11000  00000
17344  65000  10306
17345  10030  71416
17346  11000  00000
17347  65000  10306
17350  10030  65243
17351  11000  00000
17352  65000  10306
17353  11030  70753  EXAWA   ENT  A*W(REPRATE)
17354  21530  71014          SUB  A*W(SERISCNTR)*ANOT   ARE ALL HOURS SHOTS IN
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17355  61000  17371          JP   EXBA                    YES
17356  66431  00000  EXAW    SIL-EX    SHOTCHAN
17357  65000  13626          UPITIME
17360  66430  00000          RIL-EX    SHOTCHAN
17361  11530  70410          ENT  A*W(CPHP)*ANOT
17362  61000  17356          JP   EXAW
17363  61000  17146          JP   EXAE
17364  12000  00000  TAPEWAIT NO-OP
17365  12100  00371          ENT  B1*249D            DELAY UNTIL
17366  12000  00000  TAPWA   NO-OP                   TAPE STOPS
17367  72100  17366          BJP  B1*TAPWA
17370  61010  17364          JP   L(TAPEWAIT)
17371  16030  71021  EXBA    STR  B0*W(TFLAG)
17372  13370  17606          EX-COM    MAGGY*W(WEOF+1)*FORCE
17373  11530  71021  EXBAA   ENT  A*W(TFLAG)*ANOT
17374  61000  17373          JP   EXBAA
17375  65000  13323          TAPESTAT
17376  16030  71014          STR  B0*W(SERISCNTR)
17377  66431  00000          SIL-EX    SHOTCHAN
17400  65000  13626          UPITIME
17401  66430  00000          RIL-EX    SHOTCHAN
17402  11030  00160  PEXEC5   ENT  A*W(160)
17403  21030  70737          SUB  A*W(CWTIMER)       50 MIN MARK READING
17404  21030  71436          SUB  A*614400D          10 MINS OF ICCYS
17405  60700  17402          JP   PEXEC5*ANEG
17406  10000  00002          PUT  2*W(CODEWORD)
17407  14030  70752
17410  65000  13015          RJP  CW
17411  10030  00160          PUT  W(160)*W(CWTIMER)
17412  14030  70737
17413  66431  00000          SIL-EX    SHOTCHAN
17414  65000  13626          RJP  UPITIME
17415  66430  00000          RIL-EX    SHOTCHAN
17416  61200  17421          JP   PEXEC145*KEY2
17417  65000  16421          RJP  POUTPUT
17420  61000  17422          JP   PEXEC245
17421  65000  16332  PEXEC145 RJP  PTTY
17422  65000  10041  PEXEC245 TYPET$CR$END OF CW PERIOD
17423  76455  64400
17424  20460  04367
17425  00604  56251
17426  20447  70000
17427  65000  10041          TYPET$CR$TABLE NOS
17430  76644  14254
17431  45005  62063
17432  00007  70000
17433  12100  00000          ENT  B1*0
17434  11031  64564  BOY     ENT  A*W(NOS+B1)
17435  21000  00004          SUB  A*4
17436  02000  00003          RSH  A*3
17437  65000  10167          TYPE-DEC  $CR$*A
17440  77767  77777
17441  00070  00000
17442  71100  00011          BSK  B1*9D
17443  61000  17434          JP   BOY
17444  66431  00000          SIL-EX    SHOTCHAN
17445  65000  13626          UPITIME
17446  66430  00000          RIL-EX    SHOTCHAN
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17447  65000  10041                TYPET$CR$TIME$CR$DAY
17450  76045  15545
17451  76444  17100
17452  00000  00077
17453  65000  10167                TYPE-DEC  W(IDAY)
17454  00030  70762
17455  65000  10041                TYPET$CR$HOUR
17456  76502  06562
17457  00007  70000
17460  65000  10167                TYPE-DEC  W(IHOUR)
17461  00030  70761
17462  65000  10041                TYPET$CR$MINUTE
17463  76555  15665
17464  64450  00000
17465  00007  70000
17466  65000  10167                TYPE-DEC  W(IMINUTE)
17467  00030  70760
17470  65000  10041                TYPET$CR$SECOND
17471  76634  54320
17472  56440  00000
17473  00007  70000
17474  65000  10167                TYPE-DEC  W(ISEC)
17475  00030  70757
17476  65000  10041                TYPET$CR$SET ATTENUATORS FOR NOISE
17477  76634  56400
17500  41646  44556
17501  65416  42062
17502  63004  62062
17503  00562  05163
17504  45007  70000
17505  61300  17507  EXBHB        JP   EXBHA*KEY3
17506  61000  17505               JP   EXBHB
17507  65000  14755  EXBHA        GNOISE    INPUT*MTN
17510  65000  10041               TYPET$CR$NOISE SAMPLE TAKEN
17511  76562  05163
17512  45006  34155
17513  60544  50064
17514  41534  55600
17515  00007  70000
17516  65000  10041               TYPET$CR$SET ATTENUATORS FOR SIGNAL
17517  76634  56400
17520  41646  44556
17521  65416  42062
17522  63004  62062
17523  00635  14756
17524  41547  70000
17525  61300  17543  EXBHC        JP   EXBH*KEY3
17526  11530  70754               ENT  A*W(RESET)*ANOT
17527  61000  17525               JP   EXBHC
17530  65000  10041               TYPET$CR$RESET TAKING ANOTHER NOISE SAMPLE
17531  76624  56345
17532  64006  44153
17533  51564  70041
17534  56206  45045
17535  62005  62051
17536  63450  06341
17537  55605  44500
17540  00007  70000
```

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17541  61000  17507          JP    EXBHA
17542  61000  17525          JP    EXBHC
17543  11030  00160  EXBH    ENT   A*W(160)
17544  21030  70737          SUB   A*W(CWTIMER)          READING AFTER CW
17545  21030  71424          SUB   A*245760D            4 MIN WAIT
17546  60700  17543          JP    EXBH*ANEG
17547  61040  17115          JP    EXAA
17550  64335  64335  ADBF    U-TAGGARBAGE*GARBAGE
17551  00000  00050  BIF     50
17552  00000  00140  FLIP1   140
17553  00000  00010  FLIP2   10                        DISABLE INPUT  TTY
17554  00000  00003  FLIP3   3                         ENABLE PRINTER---TTY
17555  00000  53255  MTCD    53255                     WRITE ON TAPE UNIT 1
17556  00000  53257          53257                     WRITE ON UNIT 3
17557  00000  53256          53256                     WRITE ON IUNIT 2
17560  00004  00000  MCMT    4     0                   REQUST CONTROL OF MAG TAPES
17561  00000  00400  MAD     400                       MASTER CLEAR A/D
17562  00000  00015  MTI     15                        CR
17563  00000  00012          12                        LF
17564  00000  00111          111                       I
17565  00000  00115          115                       M
17566  00000  00120          120                       P
17567  00000  00040          40                        SP
17570  00000  00103          103                       C
17571  00000  00117          117                       O
17572  00000  00116          116                       N
17573  00000  00104          104                       D
17574  00001  47255  RW1     147255                    REWIND UNIT 1 NO WRITE
17575  00001  47257  RW3     147257                    REWIND UNIT 3 NO WRITE
17576  00001  77255  RS1     177255                    REQUEST STATUS UNIT 1
17577  00001  77256  RS2     177256                    REQUEST STATUS UNIT 2
17600  00001  77257  RS3     177257                    REQUEST STATUS UNIT3
17601  00001  77254  RS4     177254                    REQUEST STATUS UNIT4
17602  00001  47256  RWCW2   147256                    REWIND UNIT 2 NO WRITE
17603  00001  46314  RWCW4   146314                    REWIND, DISABLE WRITE ON UNIT 4
17604  00000  53256  PMCB    53256
17605  00000  73255  WEOF    73255                     EOF ON UNIT 1
17606  00000  73256          73256
17607  00000  73257          73257
17610  00000  72314          72314
17611  00000  00243  SDVEL   243
17612  00000  00001  STEP1   1
17613  00000  00002  STEP2   2                         SANBORN STEPS
17614  00000  00004  STEP3   4
17615  65000  15244  TELYCALL  RJP  GTTY               FOR TELETYPE INTR
17616  65000  13255  MAGCALL   RJP  PSTATUS
17617  65000  16732  SHOTCALL  RJP  SHOTOFF
17620  00013  20000  WAITIME   3686400
17621  64347  64335  SPLED     U-TAGSHTDTA+9D*GARBAGE
17622  64335  64335  BAF       U-TAGGARBAGE*GARBAGE
17623  65244  65244  SPLE1     U-TAGTRST*TRST
17624  34010  17637  MTBF5     U-TAGLEV+6249D*LEV
17625  50162  17637  MTBF10    U-TAGLEV+12499D*LEV
17626  17573  17562  MTIC      U-TAGMTI+9D*MTI
17627  64334  17637  MTBF15    U-TAGLEV+18749D*LEV
17630  65214  64350  PRODATABF U-TAGGID+4*RANGE
17631  64730  64660  IDBUF     U-TAGID+40D*ID
17632  70331  65357  PROCDTABUFU-TAGPROPL5+4*SLAVG
```

```
17633  70736  70427  RAWOUTBUF U-TAGRAWOUTAREA+199D*RAWOUTAREA
17634  70426  70416  IDBUFER   U-TAGCWID+8D*CWID
17635  70411  70411  GARBAGCELLU-TAGCWINBUF*CWINBUF
17636  70415  70411  CWBUFLIM  U-TAGCWINBUF+4*CWINBUF
                      LEV       RESERVE   18750D
                      GARBAGE   RESERVE   1
                      SHTDTA    RESERVE   10D
                      RANGE     RESERVE   1
                      SIG       RESERVE   15D
                      NOP       RESERVE   1
                      ASUMR2    RESERVE   1
                      SUMR      RESERVE   1
                      INTERCEPT RESERVE   10D
                      INTERCEPT2RESERVE   10D
                      COEFF     RESERVE   10D
                      NW2       RESERVE   10D
                      NW        RESERVE   10D
                      SIG1      RESERVE   15D
                      PROPL2    RESERVE   15D
                      QSUMR2    RESERVE   1
                      COEFF2    RESERVE   10D
                      PROPL     RESERVE   15D
                      SNTAB     RESERVE   15D
                      NOS       RESERVE   15D
                      PEAK      RESERVE   15D
                      CALIN2    RESERVE   15D
                      CALIN     EQUALS    CALIN2
                      CALPK     RESERVE   15D
                      ID        RESERVE   40D
                      AGSL      RESERVE   10D
                      SL178     RESERVE   10D
                      SLE1      RESERVE   10D
                      SLE2      RESERVE   10D
                      SLE3      RESERVE   10D
                      SLE4      RESERVE   10D
                      SLE5      RESERVE   10D
                      NAT       RESERVE   10D
                      NATT      RESERVE   15D
                      ATTEN     RESERVE   15D
                      SQIN      RESERVE   10D
                      CATT      RESERVE   10D
                      GSXI      RESERVE   15D
                      GSXIN     RESERVE   15D
                      GARBAGE2  RESERVE   1
                      GTHRESH   RESERVE   15D
                      GID       RESERVE   5
                      GNATT     RESERVE   15D
                      TESTY     RESERVE   1
                      ETL       RESERVE   1
                      SSBC      RESERVE   1
                      MFLAG     RESERVE   1
                      SSSS      RESERVE   1
                      ICMSEC    RESERVE   1
                      MTN       RESERVE   1
                      SHTCTR    RESERVE   1
                      TRST      RESERVE   1
                      LTAPE     RESERVE   1
                      PAR       RESERVE   1
```

```
SA          RESERVE   1
SQ          RESERVE   1
FORCE       RESERVE   1
ASUMRNW     RESERVE   10D
QSUMRNW     RESERVE   10D
ASUMRNW2    RESERVE   10D
QSUMRNW2    RESERVE   10D
ARRNW       RESERVE   10D
QRRNW       RESERVE   10D
QSUBT       RESERVE   1
ASUBT       RESERVE   1
QNOP        RESERVE   1
ANOP        RESERVE   1
ADIVISOR    RESERVE   1
QDIVISOR    RESERVE   1
QSUMR       RESERVE   1
ASUMR       RESERVE   1
CTSNOS      RESERVE   1
SLAVG       RESERVE   750D
AVGES       RESERVE   5
GSXIDB      RESERVE   5
PROPL30     RESERVE   750D
PROPL5      RESERVE   5
INI         RESERVE   1
PLVSRGSMIN  RESERVE   45D
CPHP        RESERVE   1
CWINBUF     RESERVE   5
CWID        RESERVE   90
RAWOUTAREA  RESERVE   200D
CWTIMER     RESERVE   1
SOA         RESERVE   1
THAT        RESERVE   3
MONTH       RESERVE   1
DAY         RESERVE   1
HOUR        RESERVE   1
MIN         RESERVE   1
SEC         RESERVE   1
DEPTH       RESERVE   1
CODEWORD    RESERVE   1
REPRATE     RESERVE   1
RESET       RESERVE   1
LASTIME     RESERVE   1
ICCYS       RESERVE   1
ISEC        RESERVE   1
IMINUTE     RESERVE   1
IHOUR       RESERVE   1
IDAY        RESERVE   1
IMONTH      RESERVE   1
RLM         RESERVE   1
RLMTTY      RESERVE   1
RWT4        RESERVE   1
HOURCNTR    RESERVE   1
CHANGE      RESERVE   1
LASHOTME    RESERVE   1
TESTIME     RESERVE   1
TMP         RESERVE   1
WORDS       RESERVE   1
ITEMS       RESERVE   1
```

```
TEMP        RESERVE   1
STRE        RESERVE   1
TEMP3       RESERVE   1
GEN         RESERVE   1
GTIMER      RESERVE   1
TEMPHOLL    RESERVE   1
FTEMP       RESERVE   1
BHOLD       RESERVE   1
SVB7        RESERVE   1
K           RESERVE   1
R           RESERVE   1
S           RESERVE   1
ALPHA       RESERVE   1
ZETA        RESERVE   1
SERISCNTR   RESERVE   1
THCTR1      RESERVE   3
STATWRD     RESERVE   1
TFLAG       RESERVE   1
TCLOCK      RESERVE   1
INCLOCK     RESERVE   1
CFLAG       RESERVE   1
CFIVE       RESERVE   30D
DUMP        RESERVE   1
GHIGH       EQUALS    LEV
TYPECELL1   RESERVE   1
TYPECELL2   RESERVE   1
FORMCELL    RESERVE   1
TPL         RESERVE   50D
SNRAT       RESERVE   50D
PLAB        RESERVE   24D
CYCLEFLAG   RESERVE   1
BANG        RESERVE   90D
BANGTIME    RESERVE   1
BAF1        RESERVE   1
TEMP3       RESERVE   1
TEMPT       RESERVE   1
71422 61010 17004       RETURN
            END-PROC  EXECP1
```

DEPARTMENT OF THE NAVY
OFFICE OF NAVAL RESEARCH
800 NORTH QUINCY STREET
ARLINGTON, VA 22217-5660

IN REPLY REFER TO
5510/1
Ser 93/160
10 Mar 99

From: Chief of Naval Research
To: Commander, Naval Meteorology and Oceanography Command
1020 Balch Boulevard
Stennis Space Center MS 39529-5005

Subj: DECLASSIFICATION OF PARKA I AND PARKA II REPORTS

Ref: (a) CNMOC ltr 3140 Ser 5/110 of 12 Aug 97

Encl: (1) Listing of Known Classified PARKA Reports

1. In response to reference (a), the Chief of Naval Operations (N874) has reviewed a number of Pacific Acoustic Research Kaneohe-Alaska (PARKA) Experiment documents and has determined that all PARKA I and PARKA II reports may be declassified and marked as follows:

   Classification changed to UNCLASSIFIED by authority of Chief of Naval Research letter Ser 93/160, 10 Mar 99.

   DISTRIBUTION STATEMENT A: Approved for public release. Distribution is unlimited.

2. Enclosure (1) is a listing of known classified PARKA reports. The marking on those documents should be changed as noted in paragraph 1 above. When other PARKA I and PARKA II reports are identified, their markings should be changed and a copy of the title page and a notation of how many pages the document contained should be provided to Chief of Naval Research (ONR 93), 800 N. Quincy Street, Arlington, VA 22217-5660. This will enable me to maintain a master list of downgraded PARKA reports.

3. Questions may be directed to the undersigned on (703) 696-4619, DSN 426-4619.

Peggy Lambert

PEGGY LAMBERT
By direction

Copy to:
NUWC Newport Technical Library (Code 5441)
NRL Washington (Mary Templeman, Code 5227)
NRL SSC (Roger Swanton, Code 7031)
DTIC (Bill Bush, DTIC-OCQ)

PARKA II Acoustic Results, 16 December 1969, USL-PUB-6001, NUSC New London, 106 pages
(NUSC NL Accession # 006001)

PARKA II Interim Report, 18 December 1969, Contract N00014-69-C-0088, Bell Telephone Labs, 129 pages
(NRL SSC Accession # 85007061)

PARKA II-B ONR Scientific Plan 1-70, 15 January 1970, MC Report 04, Maury Center for Ocean Science (ONR), Unknown # of pages
(NUSC NL Accession # 051663)

Environmental Oceanographic Observations in Support of PARKA II-A Operation, 30 April 1970, HU-HIG-ITR-4, Hawaii Institute-Hawaii Institute of Geophysics, Unknown # of pages
(NUSC NL Accession # 058081)

PARKA II-A Bottom Loss Measurement, 29 June 1970, USL-R-2408, NUSC New London, 19 pages
(NUSC NL Accession # 002408) (DTIC # C008 441)

PARKA II-A Bottom Loss Measurement, 29 June 1970, USL-2211-023-70, NUSC New London, Unknown # of pages
(NUSC NL Accession # 185457)

PARKA II-A Experiment, Final Report - Final Draft, Volume 1, The Acoustic Propagation Measurements, 30 June 1970, Contract N00014-69-C-0088, Bell Telephone Labs, 81 pages
(NRL SSC Accession # 10013937)

PARKA I: Software Procedures Report, 1 July 1970, NUSC/NL Technical Memorandum No. 2211-033-70, NUSC New London, 109 pages
(NUSC NL Accession # 116963) (NRL SSC Accession # 85009135) (DTIC # C008 091)

PARKA II - A Briefing Report, November 1970, MC Report 004, Maury Center for Ocean Science (ONR), 32 pages
(NUSC NL Accession # 055573) (NRL Accession # 474985) (NRL SSC Accession # 85007058) (DTIC # 513 631) ✓

PARKA I Experiment, Appendices, January 1971, MC Report 003, Volume 2, Maury Center for Ocean Science (ONR), 165 pages
(NRL Accession # 480369) (NRL SSC Accession # 85004880) (DTIC # 517 075)

Sound Propagation Through the Northwest Pacific Emperor Seamount Chain, 15 April 1971, 11 pages
(DTIC # 519 151) ✓

PARKA II-A, The Acoustic Measurements, August 1971, MC Report 006, Volume 1, Maury Center for Ocean Science (ONR), 118 pages
(NUSC NL Accession # 023515) (NRL Accession # 483765) (NRL SSC Accession # 85004882)