

NORSAR

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FINAL TECHNICAL REPORT NORSAR PHASE 3

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V. PROGRAMMING ACTIVITY

The programming group consisted of 5 persons at the outset of this period, but was reduced to 4 at the start of 1975. A further reduction of one person occurred at the end of this period. The group has been involved in the following activities:

- new programming developments
- maintenance and improvement of existing programs and program systems
- routine processing of utility and application programs
- consultation support
- use of the ARPA network and related studies.

The maintenance of the program systems and the use and study of the ARPA network is described elsewhere in this report.

V.1 Development of New Programs

The following programs have been designed and coded in this period:

- a program that, based on a card-punched input of the DP down time history of a certain period, computes various parameters and plots a diagram giving down time each day (N/PD-69, DPDWN),
- a FORTRAN compatible tape write routine for writing binary records of arbitrary length on a tape (N/PD-70 WRTREC),
- A FORTRAN compatible routine for forward or backward spacing of files on a multiframe tape (N/PD-71, POSTAP),
- a program for computing channel responses for given frequencies, based on a model parameter set or a set given by the user (N/PD-72, DCRESP),

- a set of programs designed to extract NR-records from NORSAR Low Rate tapes and copy them onto NORSAR Data Retention Low Rate tapes (N/PD-73, LRINPUT/LRSTACK/LRLSTPCH),
- a set of FORTRAN disk pack I/O routines that makes it convenient to store and retrieve real data, using a disk pack (N/PD-74, SKRIV/LES),
- a program that plots 3 - component long period NORSAR data for up to 22 subarrays, and optionally performs azimuthal rotation and zero phase filtering (N/PD-75, LPSUBS),
- a program that plots the data on the recording tapes from the Kongsberg High-gain, Broadband, Long Period Seismograph Station (N/PD-76, KBPLOT),
- a program for plotting time series from High or Low Rate tapes, from various sources (NORSAR, LASA, or ALPA), filtered or unfiltered (N/PD-77, TSPLOT),
- a subroutine for converting data from gain ranged to integer format (N/PD-78, FIXIT),
- a program for code conversion of punched card source decks (N/PD-79, CONVRT),
- a subroutine that reads NORSAR Long Period data from NORSAR Low Rate tapes (N/PD-80, LOWRAT),
- a subroutine that reads LASA or ALPA Long Period data from NORSAR Low Rate tapes (N/PD-81, LASA).
- In addition other programs for various applications have been developed. Programs received from other institutions have been adapted for use at NORSAR, as for instance a program received from SDAC for checking out a Special Host Interface Unit, a program for three-dimensional plotting (Algorithm 420 in CACM vol 15, no. 2, Feb 1972), and the international Mathematical and Statistical Library's Utility Program, UBLIBM.

V.2 Routine Processing

Various forms of routine processing have been undertaken by members of the Programming group, to monitor the following activities:

- maintenance of the NORSAR Tape Library directory
- discrimination tests and explosion data compilation
- data retention for High Rate, Low Rate and Detection Log data. This involves selecting data to be saved permanently, and stacking them on so-called data retention tapes, at the end of the original retention period.
- supervision and execution of sporadic run requests for different programs, from scientists, visitors and other institutions.

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