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# NORSAR

ROYAL NORWEGIAN COUNCIL FOR SCIENTIFIC AND INDUSTRIAL RESEARCH

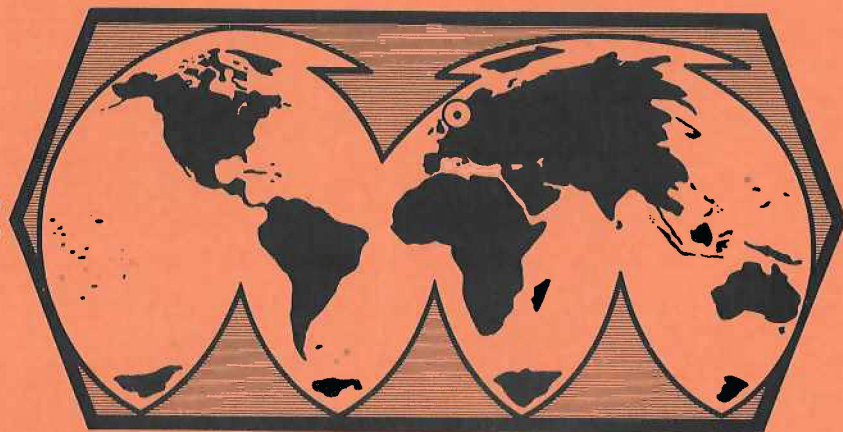
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## SEMIANNUAL TECHNICAL REPORT NORSAR PHASE 3

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Kjeller, 1 September 1974



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Q. PROGRAMMING ACTIVITY

The programming group, consisting of 5 persons, has in this period been working in the following fields of activity:

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

The maintenance of program systems and the use and study of the ARPA network is described separately, in their respective chapters.

Development of New Programs

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

- A program that processes output from the Channel Evaluation Program (CHANEV) and gives mean values and standard deviations, as well as tables of parameter values.
- A program utilizing 4 different test statistics on subarray beam data from the Event tape (i.e. already processed events) to check the validity of using the tests in signal-noise classification and rank them accordingly, together with subroutines for filtering, enveloping, etc.
- Subroutines that contain updated Beam Location Tables for NORSAR and LASA, respectively, and which return relevant data for a beam location, when inputting the beam number and partition.

- A subroutine that reads the short period seismometer values and the relevant data flags from the LASA High Rate tape.
- A subroutine that facilitates backward reading of a magnetic tape.
- A subroutine that reads the recording tape of the Kongsberg High-gain, Broadband, Long Period Seismograph station. A corresponding plot routine is being prepared.
- Additionally, programs received from other institutions have been modified to fit NORSAR needs. A program (GROUVE) that employs a multiple filtering technique in order to obtain a pattern of amplitude versus group velocity and period, can now use the Low rate tape as input. The International Mathematical and Statistical Libraries program package was received in April. An accompanying Library Utility was modified to allow input of multiple tape volumes.

#### Routine Processing

The processing routinely undertaken consists of supervising and running of the following programs:

- Maintenance of the NORSAR Tape Library directory, using the Tape Library Program.
- Running discrimination test programs on data from suspicious events, and compilation of explosion data.
- Running and controlling the Data Retention program, in order to select and stack on other tapes data from High Rate tapes at the end of the retention period.
- Running a program that performs retention of the Detection Log tapes, selectively picking records from these tapes and stacking them on other tapes.

- In addition, various programs have been run infrequently, upon request from scientists, visitors and other institutions.

Consultation Support

A small, but important part of the work load of the programming staff consists of advising and helping others in matters related to programming. A thorough revision of the "Computer Assistance for Visitors Guidelines" was made, together with the Administrative Secretary, bringing the guidelines related to programming up to date.

In addition, debugging, re-programming and programming guidance has been performed by the programming staff.

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