

STATUS REPORT OF THE DANISH-SWEDISH SPIRAL READER - JUNE 1972

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The discussion about a Nordic center for automatic high statistic measurements  
of BC-pictures started already in 1964

Several systems were discussed but the final choice on the part of Denmark and  
Sweden felt on the Spiral Reader System. Work was spent in the Spiral Reader  
Purchasers Group during 1967  
and a contract was signed with SAAB-SCANIA AB Jan. 25, 1968

The delivery time was 18 months.

The Board of DSSLP (The Danish-Swedish Spiral Reader Project) was formed April 10, 1968  
by:

Prof. J.K. Bøggild, chairman  
Prof. G. Ekspong, v. chairman  
Dr. K-H. Hansen  
Prof. G. von Dardel  
Mr. O. Obling  
Dr. G. Funke repl. by prof. B.E.Y. Svensson  
Dr. B. Ronne, secretary

The SRS-1 (Spiral Reader SAAB) was installed at the Institute of Physics, University of  
Stockholm April 1970

The acceptance test was signed Dec. 1970

Personnel:

Project leader: J. Hooper 1/7-68 - 30/6-71  
S-O. Holmgren 1/7-71  
Engineer: S. Berglund 15/9-68  
Off-Line Programmer/ L. Granström 1/11-68 - 31/1-71  
Physicist P. Lundborg 1/2-71

Operator/secretary: B. Lagerström

Operator/technician: T. Gruber

+ 2 part time operators.

As can be seen there is no separate on-line programmer post in spite of the fact that SAAB took no formal responsibility for software in the contract. The effort on the on-line programmes has been made by J. Hooper for our controlprogramme SLINKS and by J. Hooper and B. Angelstrand SAAB, for the maintenance programmes MAGPIE and RAVEN. This will be discussed in a separate contribution. In the off-line programming a great part of the work especially on POOH has been made by Eric Dahl-Jensen and other members of the Copenhagen High Energy group. This will also be discussed in a separate contribution.

#### Last years operation

The measurements on the first experiment (19 GeV pd) started in June 1971.

The first time up to beginning of Oct. 1971 was characterized by serious reject problems in POOH. These were solved during this period by several improvements among which

Increased sensitivity (valid pulse logic)

Changes in POOH

New slit mask

were the most important. After that we have a through put of 80-90 %.

The second great problem dealt with during the year was distortion effects.

This problem has been worked at since Dec. 1971

During the last months we have April-May 1972

arrived at sufficient understanding of this problem to be able to make the necessary correction of the data. This will be described in a separate contribution to this symposium.

In order to obtain sufficient precision it has been necessary to make some improvements of the hardware.

The coupling between the  $\theta$ -scaler and the cone was rebuilt June 1971 and later adjusted twice.

The cone periscope assembly was rebalanced March 1972

Except for these things, some "warn out" electronic components and a few minor mechanical break downs the machine hardware has not caused serious trouble.

Experiments and measurements

The number of event measured in the 19 GeV/c pd experiment is ~16000 events  
Most of these will be useful for Physics with the geometrical corrections mentioned.

Scanned experiment which will be measured	
19 GeV/c pd	25000 events
Multiprong 19 GeV/c pp	6000 events
9 GeV/c $\bar{p}p$	25000 events

We are currently measuring 10-14 hours/day and the measuring speed is 20-50 events/hour which implies 2000-3000 events/week when everything goes smoothly.