Summary of a thesis submitted for the degree of M.Sc.

Batch or Teletype Algol

by

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The thesis describes the general problems of organizing computer batch processing systems. It also describes the particular work undertaken by the author to implement a practical system for running student (and other) Algol programs prepared on Teletypes, using pseudo-off-line loading. The objects of the system were twofold: firstly, to make more efficient use of the KDF9 operating system and secondly, as an aid to undergraduate teaching.

Two programs were written to load programs and data punched on Westrex Teletypes to magnetic tape for subsequent compilation and execution by the modified Whetstone compiler. The first program was written as part of the KDF9 non-time-sharing Director to perform the loading pseudo-off-line, thus making more use of the central processor. The second program was written in the KDF9 assembly language, Usercode, to operate in program mode in a high priority level on the time-shared KDF9. Both programs read paper tape punched on Teletypes and convert this input to KDF9 paper tape code before writing the source programs onto magnetic tape.

The main problems were: (1) Representation of Algol on Teletypes, and (2) Code conversion from the chosen representation to KDF9 Flexowriter Algol.

The representation was chosen so that the meaning of symbols when typed would be clear to the programmer. This was particularly important for undergraduate teaching since the students had no previous experience of preparing programs. Conversion to KDF9 Flexowriter

Algol/...

Algol was achieved by a 'look-at' table and routines to deal with different characters.

The system allowed students' programs to be run several times each day, results being available about one hour after each run, and thus assisted in the teaching of Algol. The KDF9 was used more efficiently, since a batch of programs was run in a much shorter time then the same number of programs would have taken under the standard operating system.