

ABSTRACT

A High Level Computer Control Language. (May 1976)
Robert Trueman Tomlinson, B.S. Texas Tech University,
M.S. Texas Tech University, M.S. University of Wisconsin.
Chairman of Advisory Committee: Richard E. Fairley.

A set of primitive operators is developed for directing the progress of a computer job. These primitive operators form the core of a high level language, based on the ALGOL-60 syntax, intended to be used as a replacement for existing job control languages. The language is described in terms that are generally independent of any particular existing operating system. Instead, a hypothetical operating system is described in sufficient detail to illustrate the effects of the control language.

The significant properties of a compiler and macro processor for the control language are described. Particular emphasis is given to the actions of each primitive at execution time. An interpreter structure to process the primitives is developed in terms of the hypothetical operating system. A discussion of job scheduling includes the possibilities of improved system performance based on the selection of a compatible job mix. In addition, potential pitfalls in the scheduling process are described.

The correspondence between existing job control languages and the new control language is shown by a set of

examples. Typical job streams from four existing operating systems are translated into the new control language. The significantly new capabilities of the control language are shown with an additional set of example jobs.

Suggestions are made regarding the implementation of the control language on an existing operating system, specifically OS/360. The correspondence between the hypothetical operating system and particular components of OS/360 is pointed out. Hopefully, such an implementation would be generally transparent to existing programs while still providing the improved capabilities of the new control language.