

A SPECIFICATION OF
803 ALGOL
DESCRIPTION OF 803 LIBRARY
PROGRAM A104

ERRATUM

- Page 11. At the end of the third line down add *B*. ✓
Page ii of Appendix 1 should be Page ii of ✓
Appendix 2.

January 1965
(Issue 4)

Elliott

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PREFACE

This specification gives a complete account of the use of the international programming language ALGOL 60 on the National-Elliott 803 computer.

If an 803 is to be used to translate and run ALGOL programs, it must have an 8,192 word store and an automatic floating-point unit. If the machine has films, additional facilities are available (see Appendix 2). A machine with a 4,096 word store and floating-point can be used to run programs that have been translated on a larger machine (see V.2.5.).

The implementation of ALGOL described in this specification is based on the original 'Report on the Algorithmic Language ALGOL 60'. This report differs in certain minor respects from the Revised Report published in 1962. In general the changes are restrictions made in the interests of clarity and precision. An ALGOL program that satisfies the definitions of either report and the additional restrictions set out in chapter 2 of Part I of this specification will be accepted by the compiler.

No details are given of the language itself, since it is assumed that the reader will already be familiar with ALGOL 60. For those requiring an introduction to the language the following publications are recommended:

H. BOTTENBRUCH

Structure and Use of ALGOL 60
Journal of the ACM, April 1962

E. W. DIJKSTRA

A Primer of ALGOL 60 Programming
Academic Press 1962

D. D. McCracken

A Guide to ALGOL Programming
Wiley 1962

R. W. WOOLDRIDGE and J. F. RACLIFFE

An Introduction to ALGOL Programming
English Universities Press Ltd. 1963

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Note. A vertical line in the outer margin indicates amended or additional material.

PART I

SYSTEM SPECIFICATION

1. ELLIOTT 803 HARDWARE REPRESENTATION

The reference language of ALGOL requires a set of 89 printable characters; only 52 characters are available in 5-channel Elliott telecode, and some of these do not correspond with ALGOL symbols. For this reason, changes have had to be made in the representation of certain of the ALGOL basic symbols.

The following section gives the necessary changes which must be made in an ALGOL program before it can be presented for punching in Elliott telecode. The punched version of the program will not reproduce underlining, and lower case letters will appear as capitals. Nevertheless, it is recommended to use lower case and underlining on program sheets.

1.1. Basic Symbols

| 803 representation | ALGOL equivalent |
|--------------------|--------------------|
| less | < |
| gr | > |
| lesseq | ≤ |
| greq | ≥ |
| noteq | ≠ |
| equiv | = |
| and | ∧ |
| or | ∨ |
| not | ¬ |
| £ | • |
| ? | • |
| * | × |
| ** | ↑ |
| div | ÷ |
| @ | 10 (subscript ten) |

Note: 1. The symbol \supset is not allowed (see page 12).¹³

2. In this representation, using the 5-channel Elliott telecode, basic words and symbols may not contain spaces. In particular *goto* must be written as one word and in ****** a space or new line may not occur between the two asterisks.

Note: All bold type used in the text indicates that words should be underlined. This does not apply to the bold type used in paragraph headings.