[For previous reports cf. MR0022443; MR0025270.] Continuing their reports on this subject the authors write, “We wish to develop here methods that will permit us to use the coded sequence of a problem, when that problem occurs as part of a more complicated one, as a single entity, as a whole, and avoid the need for recoding it each time when it occurs as a part in a new context, i.e., in a new problem. The importance of being able to do this is very great. It is likely to have a decisive influence on the ease and the efficiency with which a computing automat of the type that we contemplate will be operable…. We envisage that a properly organized automatic, high speed establishment will include an extensive collection of such subroutines, of lengths ranging from about 15–20 words upwards.”

The report contains essentially a detailed description of one possible solution of the problem of having the machine itself process the subroutines from the “library” to produce the final working control tapes. With regard to the form of external storage of the “library” and other data, “we incline towards the use of magnetic wire (soundtrack) as input (and output) medium. We expect to use it at pulse rates of about 25,000 pulses (i.e., binary digits) per second.”

R. W. Hamming