Stochastic Service Systems, by John Riordan. Wiley and Sons Inc., New York, 1962. x + 139 pages. $6.75.

The mathematical theory presented here arose from problems in telephony, which is still its main customer, but it also applies to many situations in physics (e.g. particle counters), biology (birth and death processes, evolution, handling of information by the nervous system), economics (inventory theory, efficiency arrangements) etc. Roughly, in a stochastic service system there are one or more servers (possibly infinitely many), and a traffic imput: customers arriving at random times $t_1$, $t_2$, ... demanding service. The probabilistic description of the system consists, in the first place, of the distribution functions of $t_{i+1}-t_i$ (these differences are assumed to be identically distributed random variables), and of the length of time it takes to service a customer. When all servers are busy the new demands may be dismissed (loss system) or allowed to wait (delay system). In the latter case we may have the first-come-first-served rule, the last-come-first-served rule, or next service to a waiting customer selected at random. It may also happen that waiting customers defect according to some rule, before being serviced, and that there is some system of priorities. The assignment of free servers may be instantaneous or it may involve a time for orientation and identification. Of interest are probabilistic descriptions of: the number of lost customers (in a loss system), the waiting time (in a delay system), the number of busy servers, stationary state (in which the various probabilities are time-invariant) etc. Thus there is a very wide variety of problems; these are handled in six chapters: 1) Introduction, 2) Traffic Input and Service Distributions, 3) The Simplest Traffic System (infinitely many servers), 4) Single-Server Systems, 5) Many-Servers Systems, 6) Traffic Measurements. The mathematical tools are classical: difference, differential and integral equations, Laplace Transforms, generating functions. The book, although technical, is clearly and attractively written, and may be read profitably by anyone acquainted with the elements of probability (although some knowledge of stochastic processes and gueing theory would be an advantage). There is an index and a five-page bibliography.

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Management and the Computer of the Future, M. Greenberger (editor). M. I. T. Press and Wiley, Boston, 1962. xxvi + 340 pages. $6.00.

In celebration of M. I. T.'s centennial, a series of evening lectures took place, bearing the title of this volume. These lectures together with panel and general discussions are here reproduced. The speakers and discussants came from many different fields: