## Contributors to this Issue

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- J. J. Gilbert, A.B., University of Pennsylvania, 1909; Harvard, 1910–11; University of Chicago, 1911–12; E.E., Armour Institute, 1915; Instructor of Electrical Engineering, Armour, 1912–17. Captain, Signal Corps, 1917–19. Bell Telephone Laboratories, 1919–. Mr. Gilbert's work with the Laboratories has been concerned with submarine cable problems.
- WILLIAM M. GOODALL, B.S., California Institute of Technology, 1928. Bell Telephone Laboratories, 1928–. Mr. Goodall has worked on research problems in connection with the ionosphere, radio transmission and early radio relay studies, radar modulators, microwave radio relay systems, and Pulse Code Modulation.
- J. L. MERRILL, Jr., Pennsylvania State College, B.S. in Electrochemistry, 1928; Elliot Research Fellow, 1928–30; M.S., 1930. American Telephone and Telegraph Company, Department of Development and Research, 1930–34; Bell Telephone Laboratories, 1934–. With the American Telephone and Telegraph Company Mr. Merrill worked on transmission problems related to the exchange area. After coming to the Laboratories he continued to work on exchange area transmission projects such as the transmission features of the Time and Weather Announcement Systems, Service Observing, Operator Training and like systems. During the war he was engaged with a group planning system operation of air raid warning and of tactical wire and radio networks. Since the war his efforts have been directed toward the design and application of repeaters for the exchange area plant.

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Thomas Shaw, S.B., Massachusetts Institute of Technology, 1905. American Telephone and Telegraph Company, Engineering Department, 1905–19; Department of Development and Research, 1919–33. Bell Telephone Laboratories, 1933–48. Mr. Shaw's active telephone career was mainly concerned with loading problems in telephone circuits, including the transmission and economic features of the loading apparatus. The article now being published was started shortly before his retirement in 1948.