

operating organizations of the Associated Companies, to formulate the requirements, present and future, of the Bell System. Out of these requirements come the problems of the Department of Development and Research and the Bell Telephone Laboratories. Broadly speaking, the work of these departments may be grouped under one or the other of two classifications depending upon whether it has been initiated in response to some operating problem which is pressing for solution or initiated as a step in the American Company's broad fundamental programs of development. Work of the former character is necessarily carried on in much closer contact with the engineers in the operating field than work of the latter character. It follows that while some of the telephone research is specific, there is also another portion which is of the most fundamental character as regards the sciences upon which the telephone art is based.

After any research program has been satisfactorily concluded the proper standards in regard to systems, equipment and apparatus are established by the Department of Development and Research and these are then specified for their proper uses in the Associated Companies by the Department of Operation and Engineering.

Previous to 1907, three laboratories or departments of development and research were maintained in the Bell System, one by the American Company at Boston, one by the Western Electric Company at Chicago, and one by the Western Electric Company at New York. In 1907, in the interest of economy and efficiency these were consolidated so far as laboratory and experimental work was concerned into one unit in New York. It is this unit which has recently been given a corporate form and designated the Bell Telephone Laboratories, Incorporated. The Laboratories are owned jointly by the American Company and the Western Electric Company, the expense of operation being divided according to the nature of the work done.