This Report, the twelfth in a series of quarterly progress reports issued by the Research Laboratory of Electronics, contains a review of the research activities of the Laboratory during the three-month period ending December 31, 1948. Since this is a preliminary report only, no results should be considered final. Several projects which are in the formative or constructional stage have submitted no comprehensive reports at this time; others have been temporarily inactivated in favor of other Laboratory assignments. As noted elsewhere, technical reports are forthcoming from several projects whose research has been completed.