

long life make it suitable for application to submarine cable, compact military electronic equipment, computers and other devices for which the vacuum tube is not as well suited. In telephony very wide applications of the transistor are in prospect to increase the speed, accuracy and economy of switching equipment.

Telephone circuits to carry the growing volume of intercity traffic and to perform special communications functions are being provided on a scale to equal the development of switching systems. Canada's first microwave radio relay system, capable of carrying many simultaneous telephone conversations as well as television programs, was opened to service early in 1953, reaching from Toronto through Ottawa to Montreal. Extensions of this system are already being engineered and constructed further to improve long-distance telephone service and to extend the scope of television network broadcasting in Canada.

Telephone Systems.—The 2,904 telephone systems operating in 1951 included the three large provincial systems in Manitoba, Saskatchewan and Alberta, and smaller governmental systems in Ontario, Quebec and New Brunswick, together with the system operated by the Federal Department of Transport and the National Parks of Canada, Department of Resources and Development. Also included were 22 municipal systems, the largest being operated by the Cities of Edmonton, Fort William and Port Arthur. Of the 2,255 co-operative telephone companies, 1,003 were in Saskatchewan, 816 were in Alberta and 207 in Nova Scotia. The largest among the 448 stock companies operating telephone systems in 1951 were the Bell Telephone Company and the British Columbia Telephone Company. Over 63 p.c. of the total telephone investment in Canada belongs to the Bell Telephone Company, and their telephones in Quebec and Ontario constitute 59 p.c. of the total number for Canada.

Telephone Equipment.—During the period 1942-51, there was an increase of 1,485,991 in the number of telephones in use, representing an advance of 58 p.c. in telephones per 100 population.

Of the 3,113,766 telephones in Canada in 1951, 2,004,665 or 64 p.c. were operated from automatic switchboards and the remainder from manual switchboards. Automatic switchboards have completely displaced manual switchboards in the principal cities of the Prairie Provinces and are rapidly displacing them in the other provinces.

3.—Mileages of Pole Line and Wire and Telephones in Use, 1942-51

NOTE.—Figures from 1911 are given in the corresponding table of previous Year Books beginning with the 1938 edition.

Year	Systems	Pole-Line Mileage	Mileage of Wire	Telephones in Use					Per 100 Population
				Business	Resi- dential	Rural ¹	Public Pay	Total	
				No.	No.	No.	No.	No.	
1942....	3,192	217,958	6,014,596	463,827	867,307	266,176	30,465	1,627,775	14.0
1943....	3,187	218,702	6,057,880	484,429	901,228	275,202	31,303	1,692,162	14.3
1944....	3,174	220,161	6,108,070	504,791	928,061	286,521	32,550	1,751,923	14.6
1945....	3,151	222,435	6,333,761	531,697	983,074	300,757	33,266	1,848,794	15.3
1946....	3,114	228,983	6,770,137	585,982	1,079,769	326,405	33,962	2,026,118	16.5
1947....	3,056	232,054	7,285,681	645,154	1,194,840	354,779	35,824	2,230,597	17.7
1948....	2,992	235,379	7,913,068	701,869	1,328,373	383,227	38,399	2,451,868	19.0
1949....	2,971	242,147	8,725,760	762,294	1,481,876	414,061	41,381	2,699,612	19.9
1950....	2,912	245,443	9,488,467	813,352	1,611,759	447,691	44,290	2,917,092	21.1
1951....	2,904	249,638	10,330,751	864,015	1,735,355	467,171	47,225	3,113,766	22.2

¹ Includes telephones on rural exchange lines and urban exchange lines that have more than four parties.