heads.

Companies retain the right to change numbers. In the United States it is generally considered that the public cares more for speed of service than for a lower scale of charges. Acting on this the American Telephone and Telegraph Company and their associated companies provide metallic circuits on a liberal scale, and for long-distance calls effect connections as far as possible within six or seven minutes, with a maximum delay of fifteen minutes. For shorter-distance calls most are effected within two minutes, with a maximum delay of about five minutes. Conversations are usually chargeable for a minimum period of three minutes ; around the locality of New York it is five minutes. A "no-delay" basis is used for conversations over short routes—for example, between New York and Philadelphia (90 miles)—and it is proposed to extend it to all toll lines around New York. The A operators, when dealing with calls on a "no-delay" basis, find the toll-line jacks specially coloured, and this reminds them that a ticket has to be made out. The subscriber waits at the telephone for completion of calls on this method.

"Particular" person calls may be made over long-distance lines, and no charge is made unless the particular person required attends.

Some idea of the charges for long-distance calls may be got from the following table :---

From			То			Mileage (radial).	Fee.	New Zealand Fee.
New York		Columbus	•••			480	£ s. d. 0 16 0	£ s. d. 0 5 0
,,	••	Chicago	••	••	• •	922	1 0 10	0 9 6
,,	••	Boston	••	••	• •	189	0 5 0	0 2 0
,,	••	Rochester	••	••		307	$0 \ 8 \ 4$	0 3 6
,,		Philadelphia			• •	83	0 3 0	0 1 0
,,		Washington,	D.C.	••		264	$0\ 5\ 2$	0 3 0
,,	••	Pittsburg				316	0 10 0	0 3 6
,,	••	Bridgeport	• •	••		64	$0 \ 1 \ 8$	0 1 0
· ,,		Albany	••		• •	134	$0 \ 4 \ 0$	0 1 6
>>	• •	Poughkeepsie	е	••	• •	90	$0 \ 2 \ 1$	0 1 0

The New Zealand fee is, however, not for radial distances. The American charges are on a basis of 0.6 cent a mile, but other considerations also apply in fixing rates, such as cost of construction and maintenance.

When tickets are passed between the distributing-point and the operator a lamp lights at the despatching-point and remains alight until the ticket is removed. A lamp also lights at the operator's position on the arrival of the ticket. Great care is taken that tickets are properly dry and of a proper thickness. When asked for, information is given to subscribers about charges by an operator to whom the tickets are returned when the call has been completed. Tickets are passed through tubes at a speed of between 20 ft. and 30 ft. a second.

In New York there are about thirty direct-recording operators handling about nine hundred calls in the busy hour. In Chicago there are about eighteen operators handling about the same number of calls. The number of calls per operator varies somewhat in different places according to the method adopted of getting particulars of calls from the subscribers.

When a subscriber puts in a long-distance call his line is kept "engaged" for a time to avoid any other subscriber getting him and his being engaged when the long-distance call has matured. The line is held for, say, five minutes, but if the subscriber wants it it is released to him. He is rung when the call is ready for him to take up. In England they do not keep a subscriber engaged, but on a call maturing, if the calling subscriber has become "busy" or if a called subscriber is "busy," they break in and announce a toll call and ask him if he will take it at once.

Calls at night are charged at-the same rate as day calls. It was not so a few years ago, but it was found that reduced rates attracted day calls to the night-time, and the reduction was withdrawn.

As little work of a clerical nature as possible is done in exchanges. The charges are inserted in tickets, and particulars of delays are also obtained. Matters pertaining to accounts are dealt with in the office to which the tickets are daily despatched.

Operators report lines out of order to a monitor, who checks and informs the supervisor, through whom it reaches the wire-chief, and when all is right again the wire-chief advises back. Tickets are used between the wire-chief and the supervisor.

Canvassing is freely done in the States. New York City has about two hundred canvassers. No attempt is made to get subscribers until the plant, switchboard, &c., are available, and these are not installed until the commercial branch has completed its development study and passed it on to the plant engineer. Canvassers are carefully trained in rates and operating methods, and they are better paid than the average run of clerks. They use cards, and record such particulars as are necessary. They revisit twice. If no success attends a third visit the case is abandoned. They are forbidden to oversell, and cases where people take service and then soon give it up are noted against the canvasser. Precaution is taken against reconnecting subscribers who may be indebted to the company.

Advertising is largely used. Outside the exchanges in the large cities it is announced daily what has been the increase of subscribers in the last twenty-four hours. Circulars are freely distributed. There are many uses to which exchanges are put that make them of service to the people apart from their legitimate talking purposes.