"NUMBER, PLEASE?"

Who Is the Telephone Girl Whose Courteous Reply Greets the Subscribers' Infinite Variety of "Hello, Is This Central?"

IN THE REST ROOM.

DINING ROOM

OPERATORS AT WORK.

Telephone Operators Must:

Be superhuman at all times.

Always answer instantly.

Never make a mistake in numbers.

Never ring the wrong party on a trunk line.

Be courteous under the most severe rush of calls.

Know whether the party called is at home or at the seashore.

Never cut off a line while women are discussing neighborhood gossip.

Know more than the patron and fully as much as "the book."

Have sense enough to hold her head even after the patron has made a fool of himself.

Written for the Sunday Journal by A. H. Harris.

PEOPLE are never too busy to growl at the telephone service. Occasionally there is just cause, for no human institution can claim perfection, but many, many times there is not. It gets to be a habit, this fuming and fretting over the "phone;" no class is immune from it. The busy man at the office will rush to the telephone to finish up a "deal" at the very last moment; and when he fails to get his party the very minute he utters the number he swears. The tired, nervous mother will wait until 10 minutes before dinner time, and then will make frantic appeals to "central" to get "right away, please, the butcher, the baker, the candlestick maker," never for one second stopping to remember that probably every other woman on the block is trying to get the very same tradesmen, too.

In the popular mind the operator is pictured as sitting at the switchboard in luxurious ease, contentedly chewing gum or eating candy, and quickly reading one of the latest paper covered novels. When an occasional call comes she languidly and reluctantly drops book or paper and stops chewing just long enough to call "Number, please?" Then likely as not, from pure spite or malice aforethought, she will answer "Line busy" or "Party don't answer." This is really the way the big, irritable, impatient public looks upon the telephone operator.

The hurried patron of the telephone can never be made to believe that but one-half of one per cent of the errors in calls are the fault of the operator, yet statistics worked out by the large telephone exchanges show this to be the case. In other words, all that fuss made about "brainless operators" is but a "tempest in a teapot."

Who Is the "Telephone Girl."

Who is the "telephone girl," anyway, that anybody should be considerate of her? Isn't she paid to give patrons of the exchange instantaneous service? And the individual user is the only man in a hurry to be given a chance to speak with John Smith. Everybody knows that John Smith has but one or two men in the whole city whose business relations are such that they desire to speak with him over the telephone? Then why the needless, aggravating delay?

In tables made up on reports of thousands of errors charged up to scores of exchanges it is shown that the average operator at the switchboard makes six mistakes a day. And this in the face of the fact that she calls thousands of numbers, and during the rush hours is fairly deluged with work. It all goes to show that the operator knows what she is doing when the patron is thoughtless enough to "fly off the handle."

When a girl applies for a place as telephone operator she is first given a blueprint of the board to memorize. After she has a general idea of the construction and operation of the board she is "plugged up" with one of the older operators, where she listens to the conversation between the operator and the subscriber, learning the voice sounds and telephone terms and expressions. Then she is taken to a blank position and an operator calls numbers scattered all over the board, and from all exchanges, so that when she hears a number she knows where to locate it. Next she goes on a board with another girl, where there are comparatively few calls, and learns the actual work of the operator. Then she takes the board alone.

The length of time it takes a girl to learn is from two to four weeks, depending on ability. The average age of the girls is about 20. It takes the average girl at least a year to become a proficient operator. The steps in promotion are rather slow. The first step up the ladder is that of relief operator. Every girl is allowed several short rests during the day—the relief operator takes her place. Next she goes on regular time, usually in the evening, and soon she is made a regular day operator.

When you called for "information" and asked for John Smith's telephone number and received a reply without a moment's hesitation, it isn't likely that you stopped to think what it meant. And if you did stop to think about it you probably realized that it wasn't necessary to call "information" at all. It was possible for "information" to give you John Smith's number offhand because John Smith's number was one of the 2000 or more numbers that are in her head, right where she can find them on the instant.

Duties of Chief Operator.

Wonderful as this work of the information operator is, it is almost play when compared with the work of the chief operator, for she must have all the characteristics that mark a good information operator, combined with an executive ability rarely found in women.

First of all, the chief operator must be able to handle girls. This is the essential thing, and the requirement which makes first-class chief operators so scarce. Her duty is to see that things run smoothly. If she sees an operator too rushed to keep up with her calls she must send somebody to relieve her of part of the work. She must study the operators, watch their work, correct their mistakes and crush out dissension and favoritism. Beside this she must receive and investigate all complaints in regard to service, place the responsibility and determine the cause.

There is one girl to every nine operators called the supervising operator, or monitor. This girl walks behind the operators, keeping watch of the boards. She receives no calls unless the operator needs some special information. Her duty is to equalize the calls, promote team work and help out some girl who has more calls than she can handle. In the branch exchanges the chief, or assistant chief operator, does this monitor work. The monitor is the next position above the operator. From this position she is promoted either to information operator or to assistant chief operator—either night or day—and from that to chief operator in one of the branch exchanges, and finally to chief operator at the main exchange.

Only one girl out of 25 makes a good operator, only one in 35 makes a real good operator, and the girls capable of doing monitor and chief operator work are very few. The operator works under ironclad instructions that she must always answer promptly; she must never make a mistake in numbers; she must never fail to take the line down as soon as the parties are through talking; she must never ring by mistake; she must never put a subscriber on the wrong line, and above all must be courteous under all circumstances.

At the Central Exchange.

At Portland's central exchange you will find that a city telephone exchange is one of the busiest places in all the hustling world. In the main exchange there are about 150 operators seated at one great desk that extends around three sides of the room. Each girl is equipped with hearing and speaking apparatus fastened to head and chest, and in front of her, raised vertically from the desk, is a board full of mysterious holes. The horizontal top of the desk is fitted with various kinds of switches and lights, all quite bewildering and strange looking. As soon as a subscriber takes the receiver from the hook the operator is signaled by a light. These lights show in such rapid succession that it takes memory and skill on the part of the operator to answer in proper order. The ordinary operator from her position can connect any number in the city with any other number. This is her sole business—making connections. When a number is asked the operator taps the connection and talks by the sound produced, whether or not the wire is busy.

Some operators called "A" operators can only receive the request for the number, and transmit it to another operator called "B" operators, who connect the subscriber with the number desired. One set of operators take care of long distance calls alone. Each of these has in front of her an instrument for measuring exactly the time consumed by a message. This instrument is the calculograph. From the records made by this machine the charges for long distance calls are computed.

People who call up to ask the time whenever they have nothing else to do will understand why the exchange keeps one operator whose chief duty it is to keep the public informed as to the exact time of day or night.

Training School for Operators.

The Pacific Telephone company in Portland maintains a training school for would-be operators. Applicants are received at almost any time because the telephone business is growing, always growing. Certain physical qualifications are absolutely necessary. A girl must have good hearing and good sight and must be able to move about with ease and rapidity. Young women between the ages of 18 and 25 are preferred because results prove that they have a sense of responsibility and are easily taught.

The training school is in charge of a principal, four regular instructors, one long distance instructor, and a teacher of the voice. The main work of the student is to learn the rules of operating. These are compiled in books for the use of students. There is a regular time devoted to concrete practice with a practice switchboard. Telephoning, like most of the practical arts, resolves itself into a question of memory and common sense.

The company deems the training of the voice of such value that it employs an instructor solely for the purpose of training operators to use the speaking voice correctly.

In each exchange there is a rest room and a library fitted up in genuine girls' style, with pennants and pictures and cushions galore. Here the operators spend in rest or pleasant pastime the 15-minute rest periods allowed twice during the day. Some of the exchanges have lawns fitted up with croquet sets. In each exchange there is a restaurant, where good, plain, substantial meals are served at cost price. Indeed, the prices are so extremely low that it would make some of us who are complaining so loudly now of the high cost of living "sit up and take notice."

In the main exchange, behind the boards, is almost as interesting as the boards and the operators in front. There are hundreds of cables holding thousands of tiny wires of many colors. Color plays an important part in wire laying. From the five colors—blue, orange, green, brown, slate—countless combinations are made. A wire is the same color throughout its entire length. This helps to locate and repair trouble with facility. The wires connecting with subscribers in this room alone measure 553,000,000 feet, 105,712 miles or more than four times the circumference of the earth.

The word "hello" has been cast out in disgrace from respectable telephone circles. Subscribers may still cling to it as an opening signal, but the operators have dropped it from their vocabularies forever.

The telephone system in its relation to city life has been likened to the nervous system of the body, and it is a very good comparison. From any point of activity, either business or trouble, almost as quickly as the little nerves of the body carry the outside warnings to the brain, the little telephone wire bears its message to the central exchange. We might change the comparison a little and call the big exchange the pulse of the city's activities, for here we can measure exactly the rise and fall of the city's business. Between the hours of 10 and 11:30 a. m. and between the hours of 2 and 5 p. m. the city is rushing its messages over the line as fast as the wires will carry them. Then there is a lull. Later there is another rise, but for another reason. This time it is about 7 o'clock in the evening, and it indicates that the busy work-a-day world has washed its face, dined and put aside its "bread and butter" thoughts and is ready to begin the evening's diversion.

The telephone's work is never done. Like the steady old clock, it works 24 hours in the day. There is no time when the management can put up the shutters and leave a note on the door "Back in an hour." Like the proverbial brook, it goes on forever. Any hour of the night a fully equipped office is ready to take the hurried message for the doctor, carry a message to friends or tell the time as the hours slowly pass.

RAISING CHICKENS BY MACHINERY, COMMENCED BY EGYPTIANS, IS REVIVED IN MODERN TIMES

THERE is nothing essentially modern in the plan of hatching chickens without the aid of mother hen. The Egyptians were using incubators in the time of Cleopatra. They have the same kind now—great clay ovens, each of which holds several thousand eggs. One incubator serves a whole community; all the farmers for miles around bring their eggs to be hatched. The man in charge is an expert. He knows just how to regulate the heat, and how to test out the infertile eggs. Indeed, some of the incubator operators are said to be so skillful that at the end of a week they can tell merely by feeling an egg whether it contains a live chick or not.

Egyption methods are too cumbersome for Oregon poultrymen, however. Besides, the climatic conditions of this country make artificial incubation a much more complex matter. The incubator, as it is known in this country, represents years of investigation and experimenting. The perfect incubator has not yet been evolved; but many of the machines on the market are doing wonderfully efficient work. These machines have proved to be a great boon to thousands of poultry keepers, amateurs as well as professionals.

Indeed, the tremendous expansion of the poultry industry in this country in the last few years would not have been possible without the incubator. Chickens are now hatched by the thousands, where formerly they were hatched by the hundreds. There are single mammoth machines with a capacity of 15,000 eggs. One can well understand that the management of a machine of this kind is no child's play, especially when it is remembered that fluctuations in temperature must be reduced to the minimum, and that every egg must be turned every day. And think what it means to have thousands of wet, helpless little chicks simultaneously pecking their way out of their tiny prisons!

Amateur's Scope Smaller.

This wholesale hatching of chicks, however, is only one phase of the industry. The amateur is more interested in a machine that will accommodate from 50 to several hundred eggs. And, as a matter of course, there are hundreds of these smaller machines to one of mammoth proportions. All kinds of people are making money with the little machines. Farmers everywhere are using them. Professional men, living in suburban communities, are finding that amateur poultry keeping is greatly simplified by the use of an incubator. Even people living in the larger cities are learning that an incubator and a brooder make it possible for them to hatch and to raise chickens in a very limited area.

Hundreds of women are successfully operating incubators. Indeed, women seem especially adapted to this kind of work, because of their capacity for detail and their patience. Town women, as well as those living in the country, are making money raising chickens. An extensive plant is not needed, if an incubator is used. An ordinary cellar, or even a room in the dwelling house, may be used for the machine. It is necessary, though, to install a machine which conforms to the requirements of the insurance underwriters. An insurance man ought to be consulted before a machine is set up in a house, so that no mistake shall be made. Most incubators are heated by means of oil lamps; but there is a kind which can be connected up with an electric service in any house that is wired for electric lights.

Hatching chickens to be sold when a day old is a new industry that is growing rapidly, and one which offers no little profit to women who have become skilled in the operation of an incubator. There are many amateur poultry keepers who keep only a few hens, and would rather buy chickens than hatch them.

There is good profit in selling day old chicks at 10 and 15 cents each and at that age the "peeps," as country people call them, may safely be shipped for many miles. They do not require food until they are 48 hours old, as they are nourished by the yolk of the egg remaining in their bodies when they break out of their shells. Skill can be acquired only by experience, and success is not won in a day. Fortunately, the price required to purchase experience need not be large; for incubators are not expensive, and it is much better to begin in a small way than to make a large initial investment.

Cheap Machines Unworthy.

It is a mistake to buy anything but a first class machine. The matter of a few dollars difference in price means little, when a machine full of valuable eggs is at stake. There are two types—one operated with hot water, and the other with hot air. Comparatively little attention is required by either kind; but that little must be carefully given. The lamp must be kept clean and filled, and the wick properly trimmed. The eggs must be turned regularly, or the contents will adhere to the membrane of the shell; but in the best machines the trays are so arranged that this operation can be performed rapidly. The eggs must be examined several times during the period of incubation, in order to test out those which are not fertile. This testing is done by placing the egg between the eye and a strong light; after a little experience it becomes possible to tell at a glance whether the egg contains a live chick or a dead germ, or whether it is infertile. All except the first kind are, of course, removed.

Some poultry men become so expert that they can detect the presence of a decayed egg before a machine is opened. Others have special devices for testing out the unhatchable eggs; but the amateur usually obtains the most satisfactory results by using a tube like device, larger at one end than at the other, which cuts off all the light coming between the eyes and the egg, and leaves only that which shines through the egg itself. By using this device, it is possible to test 100 eggs in a short time.

Good Ventilation Necessary.

The machine should be placed where the ventilation is good, and should not stand in a draught. Draughts affect the temperature of the incubator, and cause the lamp to burn unevenly. The aim of the operator is to keep the temperature within the egg chamber close to 103 degrees, throughout the period of incubation. The temperature is shown on a little thermometer just above the eggs, and visible through the glass door of the egg chamber. Some machines are fitted with a tiny electric light bulb, so that the interior may be illumined at any time by touching a button. This makes it possible to read the thermometer clearly, even at night.

When chicks emerge from the shells they are weak and wet, and should not be removed from the machine until they have become thoroughly dry. It is seldom advisable to open a machine for the purpose of helping chicks that are having difficulty in pecking their way to freedom. A chicken which is not strong enough to obtain its liberty unaided, is, as a rule, not worth bothering with.

It is necessary that the eggs to be used in an incubator should be carefully selected. Brown and white eggs should not be placed in the same machine, for the former have thicker shells, which are not so quickly affected by heat and moisture. Abnormally large eggs, and those which are rough and ill-shaped, should be rejected, and an attempt made to have uniformity in size, as well as color.

The sooner the eggs are set after being laid, the better. That is where the incubator scores a point over the hen. The machine can be started at any time; but biddy will not sit until she gets good and ready. One may purchase a lot of valuable eggs and have them deteriorate greatly before enough "setting" hens to cover them can be rounded up. And then, one can never feel certain that a hen is going to stick to her task, even when she has finally settled down on a comfortable nestful of fine eggs. An incubator, on the other hand, is entirely at the command of the operator.

Heat Must Be Watched.

The heat should not be allowed to rise above 103 degrees, and 102 is better for the first week. Of course, it may occasionally run considerably higher for a short time, without causing ill results.

It is better to err on the side of too low, rather than too high, a temperature; and it is necessary to cool the eggs night and morning after the third day.

Many amateurs do not sufficiently cool their eggs. This process helps to produce robust chicks, but a few minutes are ample until the end of the first week, when more time may be given. A good plan is to place a thermometer on the eggs, and to return them to the machine when the mercury has dropped to 85.

Hatching chicks with an incubator is an operation that presents no difficulties that can not be overcome by intelligence and care. Many failures which are blamed on the machine are really due to poor eggs or carelessness. The incubator itself has proven its worth. It has made possible the tremendous development of the duck industry, 100,000 ducklings being hatched in one plant in a single season. There probably would be no ostrich farms in this country were it not for the incubator. Turkey and goose eggs are sometimes machine hatched. An incubator has been used even for hatching snake eggs—a practice which, although not common, shows the possibilities of artificial incubation.

A Nation Poisoned By the Ills of Poverty

(Continued from the First Page of this Section.)

is deficient in energy. The other is where there is an actual lack of tissue—where the child that is being stunted does not come up to the normal standard of its age and its race; for it must always be remembered that the heredity which is confirmed into racial characteristics constitutes a factor of prime importance in judging the development of the young.

"In England, where all school children must be observed and reported on, a method of classification is employed that will convey very clearly the five classes into which all children may be divided; and it is an evidence, too, of the careful study which has been given to the subject.

Grade 1—
Excellent.
Stature and growth—A healthy giant.
Nutrition—Excellent muscular development.
Circulation and complexion—Ruddy and bronzed.

Grade 2—
Good
Stature and growth—Well grown.
Nutrition—Well nourished, healthy.
Circulation and complexion—Healthy, pink.

Grade 3—
Fair or average.
Stature and growth—Average.
Nutrition—Medium.
Circulation and complexion—Average.

Grade 4—
Poor.
Stature and growth—Stunted.
Nutrition—Thin, or fat and flabby tissue.
Circulation and complexion—Anemic, sallow.

Grade 5—
Bad.
Stature and growth—Miserable, deformed.
Nutrition—Very thin.
Circulation and complexion—Pallid.

"Studies of malnutrition in the United States do not impress the average man as being a very important subject at the outset. It presents itself to the mind as a problem which might arise at some time in the future, but would not, for a long period, prove a real, vital factor to us, in the prosperous United States.

"But, once the investigation is begun, its immediate urgent necessity becomes obvious and its ramifications prove enormous. There are fully 1000 pages of solid material for reference in official documents from England alone. Reports come from 55 cities in Italy and from several thousand centers in France. It towers as a world problem, with the world so anxiously endeavoring to solve it that there is now national legislation on the subject in seven different countries.

"In the United States malnutrition proves decidedly a problem, an issue springing at once into leading importance. It appears in 10 per cent of our school children. Next to eyestrain and bad teeth, malnutrition is the physical defect which constitutes our children's most serious handicap. That percentage of one tenth of the total school population is no mere arbitrary figure. It comes as a result of studies conducted in 10 typical American cities, including New York.

"In Chicago the number is higher. The analysis of the condition of 10,000 children there, in the different grades and all typical of the general population, showed a total of 1178 individuals who were underfed, the bulk of them being of the commonest age of the school child, 5 to 10 years old, and in the grades ranging from the kindergarten up to the third. The cold, hard table which summarizes that analysis is brought into pitiful, living reality when we recall the pallid, deformed, thin creatures who are included in the significant numerals—the vast majority of that poor, hungry horde of helpless little things, starved or half starved during the very years when their bodies and their brains most desperately need the sustenance nature craves:

Grade—	Number Underfed.	Percentage Underfed.
Kindergarten	70	15.5
First grade	502	14
Second grade	235	11
Third grade	195	10
Fourth grade	91	9
Fifth grade and above	86	6
	1179	11

"In New York city, when two typical schools were analyzed during the investigation of 1909-1910, it was remarkable that, despite the radical racial differences, the percentages of malnutrition should be the same. One of these schools was attended almost exclusively by children of Italian and Jewish parentage; the other school's attendance was as pronouncedly Irish-American. The children examined numbered 2150, of whom 283 were marked cases of malnutrition, cases in which malnutrition stood out above all other physical shortcomings. The poor little wretches averaged a weight of nine pounds less than the normals for their ages."

There may be something in the theory that the angels are back of the stars—especially in the theatrical business.