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Brief history of telephone accounting: a lecture delivered to the students of the Amos Tuck school of administration and finance, associated with Dartmouth college, Hanover, N.H.

Charles Gilbert Du Bois

A BRIEF HISTORY
OF
TELEPHONE ACCOUNTING

A LECTURE DELIVERED TO THE STUDENTS OF THE AMOS TUCK SCHOOL OF ADMINISTRATION AND FINANCE, ASSOCIATED WITH DARTMOUTH COLLEGE, HANOVER, N. H.

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A BRIEF HISTORY OF TELEPHONE ACCOUNTING

I. INTRODUCTION.

We can only get a proper perspective of the various phases of the telephone business by first grasping the thought that the invention itself was made only thirty-six years ago, that for the first twenty years its history was one of experiment and development and that only for ten or fifteen years has the telephone been a big public service equipped to fulfill its natural functions in the great industrial and social reorganization which has been and still is going on throughout this nation and elsewhere.

The story of the legal and financial struggles to establish the telephone in its present position as the premier public convenience has been well told many times and in many places. The technical development of the telephone instruments, of the apparatus for making connections through central offices and of the wire construction necessary to connect telephones and switchboards—in a word, the engineering —has a considerable literature of its own.

The statistical position of the telephone has also naturally received much attention. For the United States it has been stated in fairly definite and uniform terms from the beginning, not only in the annual reports of the American Telephone and Telegraph Company and its predecessor, The American Bell Telephone Company, but also in special census reports of 1902 and 1907 (with another for 1912 now in preparation); and for the entire world the statistical position for the ten years 1902-1912 has been set forth in the booklet entitled "Telephone Statistics of the World" prepared and distributed by the Statistician of the American Telephone and Telegraph Company. To get the present statistical position in our minds it may here be said that starting from nothing in 1876 there are to-day in the United States nearly 9,000,000 telephones connected together by about 18,000,000 miles of wire and representing an investment of more than a billion dollars.

Other civilized countries have followed the lead of the United States and though nowhere else is there such a common and universal use of this public convenience there are about 5,000,000 telephones in all other countries combined. The grand total for the world of about 14,000,000 telephones and 30,000,000 miles of wire representing an investment of about $1,800,000,000 shows to what proportions the industry has come in only thirty-six years.

While so much has been written about the legal, technical, commercial and statistical features of this rapid and tremendous expansion, no general survey of the rise and development of the accounting methods followed in this industry has been attempted heretofore. In the following pages my attempt to do this has no pretension as a formal historical study and while it brings together in some chronological order the main points in the development of telephone accounting its emphasis is more particularly on the character and growth of the relations of the accounts to the industry itself and to the public it serves.

II. EARLY DEVELOPMENT OF TELEPHONE ACCOUNTS.

1) Prior to 1883.

From the organization of the American Bell Company in May, 1880, its accounts were kept with the scrupulous care and fidelity characteristic of the old time Boston merchant. The printed annual report of the company for its first year contained evidence of conservatism—unusual in newly organized corporations—in the following statement of the President:

"Much of the electrical and legal work of these "first years of the company, and indeed some of our "expenses incurred in studying and classifying the "business, are substantially for the establishment of "the property, and might be charged to construction "and capitalized, but the directors have preferred the "more conservative policy of charging everything to "operating which could reasonably be put there, "although the result upon the books appears less "favorable, in consequence, than the business pros-"pects might warrant us in exhibiting."

A complete earnings statement and a cash statement were shown in this first report attested by the certificate of a public auditor and in the following year a proper balance sheet was given.

The American Bell Company as the owner of the Bell patents at first licensed telephone instruments mostly to individuals for use on private lines. As exchanges came to be established a new class of licensees appeared, generally firms or small corporations, who undertook to build and operate an exchange for a small territory like a county or a city. In these small companies the American Bell Company usually took a part ownership, but prior to 1883 gave little, if any, consideration or supervision to their accounting practices except that they were as licensees, required to keep strict record of and make reports and payments for the instruments licensed to them.

In 1883 the American Bell Telephone Company appointed an Auditor*, who took up the study of accounting methods in these operating companies and the examination of their accounting results.

At this time the number of telephone subscribers or stations numbered about 100,000 and with the construction of connecting lines between the different licensees, which was then in progress, the toll and extra-territorial business was becoming a more important feature of the business. The execution of permanent, in place of temporary contracts, between the American Bell and most of the licensed companies had tended to bring those companies into closer relations and to promote interests in common. While, to some extent, uniform methods of construction and standard types of apparatus were already

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*General Thomas Sherwin, who continued in that position until July 1907.

in use, and were becoming more generally adopted, it seemed important that, with the growth of the business, a system of accounting as nearly uniform as conditions warranted should, alike in the interest of the operating companies and the American Company, be agreed upon and put in practice.

2) First Work on Accounting System.

In the early part of 1883 the companies were requested to send in monthly Trial Balances showing the balances of their ledger accounts at the close of each month. A form was printed on which the information requested included also a "General Statement of Business for the Month." These forms with many changes and amplifications conforming to the developments and refinements in the accounting as subsequently improved were continued up to December 31, 1907. The compilation by the companies and the later receipt of these forms at Boston was very slow and, as a rule, they were not available until nearly two months after the close of the month which they represented.

A study of the accounts of most of the companies during the year 1883 showed great diversity in the methods employed and in the care given to the work so that while some of the reports were made by competent bookkeepers, others were almost worthless.

As a result of this study the first circular on telephone accounts was sent out by the American Bell Company on April 25, 1884.

Although accounting in the business and industrial concerns of America had generally received but scant attention at this time some of the points made in this circular of 1884 are well worth noting. For instance, Reconstruction is specified to be an expense and defined as "that portion of the cost of rebuilding or replacing property not properly chargeable to Construction." "Unearned rental" is recognized as a liability. "Construction" it is stated, "should represent the value of the plant and may properly be subdivided according to the service to which the property is applied." Depreciation is clearly recognized and 10% is suggested as the usual estimated annual rate, while a reserve fund is recommended to be set up to which should be added "the estimated amount of yearly depreciation not covered by the expenditure for Repairs and Reconstruction."

3) Circulars of 1887, 1891 and 1904.

Further circulars were issued, one on December 30, 1887, dealing with the sub-divisions of Expense recommended, and another on January 1, 1891, amplifying and bringing up to date the entire scheme of accounts.

In this circular a change was made which in the light of subsequent history I can only regard as a step backward, in that the separation as between Current Maintenance and Reconstruction was abandoned. It is probable that this was done because the field work was not at that early date systematized to the point of making the distinction carefully. Nevertheless the circular of 1891 as a whole marks a distinct advance because it presented a complete accounting system with definitions and numbers for accounts, advice as to the books to be kept, and a plan of apportionment of general expenses.

In that early day it was quite commonly believed that all expenses should be distributed or apportioned to the separate exchanges. This idea is maintained by many small companies to this day, though the larger companies of the Bell System have either abandoned it entirely or changed its character by applying it to districts or divisions comprising several exchanges. The evolution of administrative organization and the ideal of universal service have both worked in this direction.

During 1902 and 1903 there was considerable agitation and experimentation relative to the separation of Exchange and Toll Expenses, but after much study, correspondence and conference on the subject, this separation was eventually abandoned because the nature of the business and the use of the plant involved made any attempt at a segregation of the expenses too much of a guess to be of any practical value. Subsequent experience has confirmed the wisdom of this decision.

By 1903 the telephone business of the country had developed to a point where it became evident that a further revision and amplification of the accounting system was necessary. It was difficult, in some cases impossible, to obtain from the books of the operating companies any trustworthy data to determine the average life of the several classes of plant, and consequently it was almost impossible to find two engineers or accountants who agreed upon the percentages which should be allowed for deterioration or obsolescence.

After many consultations with engineers and with public as well as telephone accountants, the circular of January 1, 1904, was issued by the American Bell Telephone Company. Besides the additional subdivisions of plant accounts provided for by this circular the separation of Current Maintenance and Reconstruction was again established, but owing chiefly to the lack of uniform or adequate clerical methods in the field, the figures reported by many of the companies varied so greatly that the plan was not completely successful.

III. THE PERIOD 1907-1912.

1) Characteristic Features of the Business and Their Effect on the Accounting.

I distinguish the period beginning with 1907 because in that year and continuing in the five years following certain important developments occurred in the telephone business which greatly influenced the accounting procedure.

a) A National System.

In the first place the conception of a national telephone system which had been in the minds of some Bell officials from the beginning took a firm hold on the imagination of the public as a desirable plan if it could be brought about under suitable public regulations as to service and rates. Obviously the Bell System had then the framework for such a national system and the Bell management promptly rose to the occasion. In working on the problem from this point of view it was necessary to have accounts and statistics of the system **as a whole,** for no one could get a clear and comprehensive view of the situation from the figures of the thirty-five separate companies which made up the rather loosely-joined Bell organization of six years ago.

Uniformity of accounting thus became not merely desirable but necessary.

Consolidated reports became possible as soon as uniformity of accounting was attained and by eliminating the inter-company items—that is, the items which were liabilities of one company and assets of another or earnings of one company received from another within the system—a picture of the condition of the Bell System as a whole in its relation to its stockholders and to the public was obtained.

b) Reorganization Into Fewer and Larger Units.

Another step toward knitting the System together more firmly was the exchange of the parent company's stock for the stocks in several subsidiary companies, so that the thirty-five companies could be more effectively organized for the commercial necessities of the service and without disturbing the rights of previous stockholders in those companies.

These rearrangements of territory resulted in the eight large territorial divisions of the Bell System operated to-day and called from their geographical location, New England, Eastern, Southern, Central, Southwestern, Northwestern, Mountain and Pacific. In general, each division has one set of officers, although a division may comprise several companies.

The principal effect of this reorganization on the accounts was that they gradually became centralized at the eight division headquarters, thereby increasing the accuracy and decreasing the number of reports. It also tended to simplify the consolidation of reports at the parent company's headquarters.

c) Change in Type of Operating Organizations.

Coincident with the reorganization into fewer and larger units a general type of operating organization called "functional" or departmental, very rapidly came to be predominant, where previously the "territorial" type of organization had existed in large areas of the country. The difference between the two must be briefly mentioned and in very general terms.*

The "territorial" plan as applied to the telephone business means that each locality has its telephone manager who has authority and responsibility for all the company's operations for that locality, including the maintenance of plant, the giving of service, getting new subscribers, rendering bills, receiving money, etc. These local managers in turn may report to a division manager and he to a general manager who would, in theory, know all about all parts of the business. In practice, the general manager of a large company under this organization must have various assistants whose relations to the division managers are mostly advisory and who from the nature and complexity of the business tend to become particularly qualified on some one function, one specializing on the construction of the plant, another familiarizing himself with traffic methods, and perhaps a third dealing with the public and with public authorities.

The so-called "functional" organization is the natural evolution from a large territorial organization, but it is distinctive in that it gives these specialized assistants full authority all the way down the line. Thus the Plant, Traffic and Commercial Departments work co-ordinately all through the territory. The Accounting, Treasury and Legal Departments, whose work is mostly at headquarters, have

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*For a discussion of these two types of organization as applied to Railways see Railroad Administration by Ray Morris, p. 76.

See also Applications of Some General Principles of Organization, A. T. & T. Co., 1909.

nevertheless full authority as to what must be done in the territory to meet their respective needs.

The spreading of the functional organization plan has greatly increased the **effective use** of the accounts, and I think this is because specialists generally tend to base their judgments on exact data so far as possible rather than to rely on intuition or guess work.

The **form** of accounts is also affected by the form of organization. This is particularly true as to sub-divisions of expense accounts, for in the functional organization the expenditures of each department are a direct responsibility of that department. The efficiency of each department head being gauged by weighing the service rendered by his department against the expense incurred, he in turn gauges the efficiency of his divisional and local subordinates in the same way.

Thus the accounting records of expenditures go further down the line and become one of the useful tools of the operating man.

An interesting development of this was the tendency to perform the subsidiary accounting work in the principal departments concerned so that the form and arrangement of data would be more flexible and the figures be more quickly obtained. The results of this subsidiary accounting go forward, of course, to the chief accounting officer of a company and subject to his concurrence, or after such audit as he may think necessary, is by him entered on the company's books.

2) Administrative Accounting and Its Importance.

I count the **growing use** of accounts by administrative officers as the most important development in telephone accounting during the past six years. I believe that the old criticism of accounts as a sacred mystery revealed only to a few higher officials has in the telephone service forever passed away and that the possibilities in accounts as **working tools** are at last coming to be realized.

The practical use of accounts and accounting data by administrative officers exerts a continued pressure to keep the accounting methods in a process of development as the business develops. Without such practical use the tendency is for accounts to become rigid, formal and perfunctory. But wherever the demand for practical use is strong enough the accounting officers are bound to receive almost continuously constructive criticism and suggestion from the administrative officers. This is the breath of life to an accounting system.

3) Publicity of Accounts.

An event almost equal in importance to the development of administrative accounting in this period was the publicity of telephone accounts.

The American Telephone and Telegraph Company (and its predecessor, The American Bell Telephone Company) and some of the operating Bell Companies had from the beginning published annual figures of their own results, but not until 1908 was a statement published showing the earnings of the Bell System as a whole. In the following year combined and comparative Balance Sheets were published. A little later the publication of quarterly figures both of the parent company and of the Bell System was started, which practice is still followed and is likely to continue.

a) Publicity from the Standpoint of the Public Generally.

Publicity of accounts and knowledge as to the plans and policy of public utility corporations is rightfully demanded by public sentiment. Public opinion really determines the methods and practices under which business is to be conducted. No business comes into such close personal relations with the public generally as the telephone service and it was appropriate that the telephone should be one of the first great utilities to take the public into its confidence as to its accounting results and its general policy.

Without general public confidence any public utility is in a precarious situation. One is apt to think of the public simply as an electorate having periodical opportunity to express itself by a majority vote for or against a man or a measure. This is not the whole case. The public, as I see it in its relations to the public utility, is peculiarly individualistic. There is a dim sentiment pervading most men's minds that the utility can take care of itself and that therefore its various actions are to be viewed critically or even suspiciously. There is also a general sentiment that the utility should be allowed to earn a fair return on its bona fide investment provided it gives good service. Beyond some such general sentiments each individual seems to shape his attitude toward each public utility with which he comes in contact from his own occasional experience. It is then the problem of the public utility through all its employees to meet the needs or wishes of each individual and at the same time conform to certain definite policies, methods and practices without which the utility can not remain a coherent organization.

Of course, considering the multitude and variety of transactions and of individuals, complete satisfaction to both parties in every instance is not to be expected. With the best of efforts and intentions complaints must arise. The utility should be quick to explain the matter intelligently if it is not at fault and equally quick to admit and make reparation if possible when it is at fault. This practice will turn many a belligerent into a friend.

But the complaints that are presented to the utility or to a Commission having regulatory powers over it are of minor importance as compared with the unspoken attitude of mind of that vast majority of the public which says nothing and does nothing till a test comes.

When the test comes it is found that each utility has its own distinctive reputation, and all the facts in a specific case are seen in the light of that reputation, precisely as they are in the case of an individual.

Good reputation is as essential then to a public utility as to an individual. It can be obtained, too, like the individual's good reputation, only by years of honest and efficient labor.

Moreover, honesty and efficiency are not of themselves sufficient to secure public confidence. People must be kept informed and the information must be presented so attractively and so interestingly that they will absorb it. There are many ways of doing this, but in the last analysis nothing takes the place of that "deadly logic of the balance-sheet." What is the value of this utility's property? How much does it charge for its services? Do the stockholders get as much as or more than they are entitled to? The answers to such questions are vital in forming public opinion and the right answers can come only through well-kept and properly expressed accounts.

b) Publicity and Investment.

Another phase of publicity is its effect on present and possible future investors.

During the past few years the security markets have been changing their character of business. Speculation is decreasing, at least relatively, and I think quantitatively. Careful investment is increasing and intelligent investment depends on knowledge. The growth in numbers of small individual investors in the securities of our principal corporations has become very rapid.

The following quotation from the financial columns of the New York Evening Sun (February 3, 1913) illustrates the Wall Street view of this:

> "The investing public throughout the country * * * is well aware that for a period of about five years there has been a constant multiplication of the facilities for small investors, that commission houses which formerly discouraged anything but 100 share units of operation cheer-

fully accept orders for ten and twenty share lots; that the number of houses catering particularly to the small investor and making no difficulty about getting him ten or twenty or fifty shares at as good a price as 100 shares could be bought for some one else has greatly increased, and that practically everywhere in Wall Street the small investor is welcomed with open arms."

The American Telephone and Telegraph Company, which had 18,000 shareholders five years ago, to-day has over 50,000, of whom about 44,000 hold less than 100 shares each. A similar comparison can be made of other important corporations. Nothing but the growing confidence of small investors can have caused this spreading out of ownership and that confidence is *primarily dependent on the* accounting results which are furnished them.

Capital is traditionally timid. It will not flow into anything hazardous without an expectation of large returns. The business of public utilities is not naturally hazardous and even the hazards of their present public status can be largely removed by a settled public policy toward them and a just and efficient regulation.

The appeal for capital for public utilities should be chiefly to small but permanent investors, and should be on the ground that the property is a safe and well-protected investment. Permanent investors pay little attention to rumors about the business or to market fluctuations, but they follow closely the regular reports of earnings, property and capitalization.

4) Commission Regulation of Accounts.

We come now to the part that accounting has in the increasing control by the people, through governmental agencies, of the large corporations and particularly those classed as public utilities.

There are some advocates for all possible methods of conducting these public utilities. Competition, co-operation, combination, monopoly, public regulation, public ownership, even state socialism, are discussed as theories.

So far as my personal views are concerned, this seems to me not a matter of theory at all, but wholly a matter of the most efficient plan **now** for a particular service. What will work best here and now is the real question, and, in fact, that is the basis on which the question has to get its practical answer.

Though no one solution of the whole problem could be generally accepted, yet as to the telephone service existing to-day some general conclusions seem to have been reached.

In the first place, the telephone business might likely not have developed at all had it not enjoyed at the start its patent monopoly, but it has long since definitely passed out of the monopoly period and is now under a regime of public control and regulation.

In the next place, it seems clear that the duplication of telephone service, incorrectly called competition, which still exists in a few parts of the country is doomed, for the simple reason that people will not bother with nor pay for two telephones to do the work of one; their perfectly reasonable demand being that they should be able to reach everybody from the one telephone.

It does not seem to me that general monopoly of ownership is necessarily the only way for meeting this public need. The principal of co-operation can be and is followed in a high degree in the telephone service. There are, for instance, about 5,000 exchanges owned by the Bell System and there are 12,000 small exchanges not owned nor operated by the Bell System but connecting to it for exchanging toll service.

This works admirably so long as the whole forms one general comprehensive system and is sufficiently under one policy so as to give an efficient and universal service.

The Bell Telephone management long ago realized that the Bell System should be national in its scope and facilities, and that the corollary of this proposition was that it should not merely submit to but should welcome public regulation of its business on any reasonable lines,— meaning by "reasonable lines" those that would foster and develop the service and attract capital for that purpose.

In his report for 1910 the President of American Telephone and Telegraph Company said: "Public control or regulation of Public Service Corporations by permanent commissions, has come and come to stay."

We find that in the working out of details by these commissions great stress is laid on the methods of accounting to be followed.

The commissions of several states, notably Wisconsin and New York, have in the past few years adopted and prescribed complete accounting methods for telephone companies.

With these exceptions, however, the accounting methods prescribed by states have been simple and rather inconclusive, the general idea being to let the Interstate Commerce Commission develop a complete accounting system and then for the states to follow that or at least to use it as the basis for making up their own systems.

5) Development of Accounting Practice 1907-1912.

Before passing to the plan of accounts prescribed by the Interstate Commerce Commission and under which the Bell Companies have just begun to keep their accounts, it is appropriate to consider some of the practical accounting that has taken shape in the Bell System during the past six years under the stress of the various forces that have been referred to. These forces may be again enumerated as:

1) The ideal of a nation-wide service with its consequent demand for comprehensive and uniform accounting on a nation-wide basis.
2) The demand of administrative officers that the accounts provide them with working tools, in-

stead of being limited to historical summaries.

3) The recognition of publicity of accounts as a means to public confidence and the enlistment of new capital.
4) The regulation of the telephone business by state and federal governments.

a) Procedure to Develop Uniform Accounts and Standard Reports.

Uniform accounting is not accomplished by merely issuing orders to that effect, even though such orders have the force of law. Not only must the titles of the accounts be established, but careful detailed definitions of the items to go under each account must be stated. Moreover, since the telephone service consists literally of millions of small transactions, complete uniformity can only be attained by systematizing the whole clerical procedure throughout the country and particularly among the field forces, which handle the detailed transactions.

It cannot be said that this latter work has been entirely completed throughout the Bell System, but it has reached a stage where substantial uniformity is obtained while still allowing for fast-disappearing differences in organization and methods, as well as for the actual and necessary differences due to geographical conditions.

The methods of clerical procedure as standardized for the Bell System are set forth in some thirty-three printed bulletins on standard routines accompanied by about two hundred standard forms.

These bulletins cover the clerical procedure for estimates for construction, vouchers, tool records, supplies, time records and payrolls, service bills and ledgers, telegrams telephoned, employees' benefits, and other subjects.

Uniform accounting having been attained to a substantial degree, uniform reports can be made up and such reports can be combined and comparisons set up.

The forms of reports underwent some radical changes in this period. For years previous to 1908 each company had made up one report (known as 305) in size 19"x24" and giving balance sheet and income report, various statistics and unit costs to the extent of earnings and expenses per station.

No comparisons with other periods were shown. These reports could not be filled out on typewriters, as they were on heavy paper and were so large they had to be folded several times for filing purposes. In revising the scheme of reports the following principles were followed:

a) Ordinary business letter size 8½"x11" was adopted as the standard for reports, and binding and indexing were arranged for.

b) Paper thin enough for manifolding five or six copies, yet heavy enough so print would not show through, was adopted.

c) Separate reports were provided for Balance Sheet, Earnings, Plant Values, Plant Statistics, etc.

d) Comparisons by periods were shown. Thus assets and liabilities were compared with the month before and also with the beginning of the year, while earnings were stated for the month compared with the previous month and also for the elapsed period of the year compared with the same period of the previous year.

e) Unit costs and comparative percentages were developed and formulas for their calculation were shown on the reports.

Each report being named and numbered, the whole set of reports (nine in number in 1912) formed a complete statement of any company.

These reports were not only used by the officers of the reporting company, but were also combined on identical forms for groups of companies and for the

Bell System as a whole. Various comparisons of results by companies were also set up on sheets of the same size so that the whole series, numbered and indexed, forms a complete monthly report of the operations of the Bell System. By stipulating a date at which each report must be issued and by systematizing the work of compilation it is customary to have the whole completed within thirty days after the period covered.

b) Plant and Maintenance Accounting.

The subdivisions of Plant or Construction account in the Bell System on a uniform basis date back to about 1891 and the changes since have come as a natural evolution rather than through the application of new principles. Besides Real Estate there were and are four natural main classes of Telephone Plant, viz: Central Office Equipment, Subscribers' Station Equipment, Exchange Lines and Toll Lines. The several subdivisions of each need not here be described further than to say that both Exchange Lines and Toll Lines are subdivided intc Pole Lines, Aerial Cable, Aerial Wire, Underground Conduit, Underground Cable, Submarine Cable and Right of Way, the title describing concisely the character of each account. The importance of these distinctions rests chiefly on the relative cost and permanence of the different types of construction indicated and the determination of depreciation charges. They are mentioned here as essential to an understanding of the accounting problems of maintenance which we will now consider.

Maintenance as an accounting term signifies the expense of upkeep of the plant and in telephone accounting practice has three main divisions, viz: Current Repairs. Station Removals and Depreciation.

Current Repairs represent roughly the expense incurred in keeping the plant in condition for service but not including replacement or reconstruction.

About the subdivisions of Current Repairs a controversy raged for several years, but the pressure of administrative officers finally—in 1908—overthrew the old classification of salaries and wages, traveling, rent, and material, and new subdivisions were established corresponding to the classifications of plant. This was a distinct advance in accounting for administrative purposes because it made possible unit costs and hence made comparisons of maintenance efficiency possible.

Station Removals is a maintenance expense peculiar to the telephone business, and necessary for the reason that, from the beginning, it has been the common practice for telephone companies to bear the cost of installing telephones and removing them. These removals involve not only the direct expense of disconnecting and taking out the telephone instrument, but also a loss caused by abandonment of interior wiring and frequently of some outside wires. This process of taking out telephones goes on all the time. For every three telephones installed about two are taken out, resulting in the Bell System in an annual expense of $6,000,000 to $7,000,000.

Depreciation is the part of maintenance which for obvious reasons has been the most difficult to treat properly, and it is perhaps the most difficult problem in accounting generally. Our main difficulties fall under these heads:

a) Educating administrative officials and the public generally to the idea of accounting for depreciation as a standard and regular practice.

b) Determining what depreciation represents with sufficient precision for definitions to be used in accounting practice. This involves the entire accounting treatment of depreciation, reconstruction, replacements, plant removed, cost of removal and salvage.

c) Determining what rates of depreciation should be used and the formulas or methods of calculation.

A recent writer has said truly that the depreciation charge has had three successive phases, 1) improper, 2) legitimate and 3) necessary. There are but few persons now who contend that the depreciation charge is improper. Of late years it has been generally regarded by administrative officers as legitimate if it left sufficient earnings to pay reasonable or satisfactory dividends. Now we are in an era where the depreciation charge is generally regarded as necessary and it is fast coming under the most enlightened public regulation to be compulsory. Before it was regarded as necessary and before it was made compulsory by any commission the Bell System had not only accepted the idea, but had also successfully applied it in its accounting practice.

In an early stage of this development a round sum was arbitrarily assumed as sufficient for the whole of maintenance and any unexpended balance of this sum was carried to Reserve. This plan, besides having no basis of fact, was frequently in an awkward situation through the excess of expenditure over appropriation.

An improvement on this was the assumption of an arbitrary amount per station, but this was open though in less degree to similar criticisms.

The next stage was the separation of maintenance into Current Repairs, Station Removals and Depreciation with the latter still assumed on a rather arbitrary basis.

The last stage was the attempt to determine by engineering methods what the depreciation charge ought to be, and this led to what I think may be fairly claimed as a logical, accurate and practical method of accounting for depreciation.

Briefly, the method is this:

Depreciation was defined as "the estimated loss in value of the plant which, in spite of repairs, is constantly accruing by reason of inadequacy, obsolescence, decay, or gradual deterioration from natural and usual causes. Inadequacy may be caused by advances in the art or by more rapid growth than was foreseen, or by public regulation."*

This charge being made to expenses, was credited Reserve for Depreciation. Then as old plant was removed or abandoned for any of the causes defined as depreciation it was taken off or credited the asset account Plant at the sum at which it stood charged therein. At the same time the same amount was charged to the Reserve for Depreciation—which had been created for that purpose—the salvage of material less the cost of removal being credited the same Reserve.

What happened then with respect to renewals, reconstruction and replacements? From the standpoint of our accounts, no such terms described any transactions, and for this reason:

Any new plant, whether it replaced old plant or was an addition to the existing structure, was charged the Plant account and any plant taken out of the existing structure was taken off the Plant account. The physical circumstance and the accounting record of it exactly corresponded.

Following this method, the only difficulty remaining was to determine the amount of the depreciation charge. The attempt was and is to base this on the life in use. There is available some data as to the average life of certain classes of telephone plant which have a comparatively short life, such as switchboards, poles and iron wire. On underground conduit and copper wire there is not much to go by, and we have to trust to engineering opinion. But as the years pass, the experience is being tabulated from the accounts and in time we shall know very closely

*See page 43 American Telephone & Telegraph Company Accounting Circular No. 6 First Revision.

what average life can be expected for such classes of plant.

The life, the cost of removal and the salvage of each class of plant having been determined by experience or estimate, the resultant percentages to be applied annually to the plant accounts can be easily worked out. As now commonly estimated they run from 1.5% on hard drawn copper wire in toll lines to 12.5% on iron wire in exchange lines, the composite percentages for complete plants varying from 5% to 7% per annum, on the so-called "straight-line" method. This method, which is at present followed by the Bell System, means that the same percentage applied every year will, without interest, provide at the estimated time of retirement an amount equal to the original cost of plant plus cost of removal less salvage value.

Another method of calculation known as the Sinking Fund method is occasionally discussed, but has not at present come into any general use. (See Note.)

c) Segregation of Exchange and Toll Systems.

Reference has already been made to the early attempts to segregate the property, earnings and expenses of each exchange and similarly to keep the property and net earnings for a toll system separate. The question is one on which telephone accountants generally differ from commissions and their accountants. A few commissions have ruled that telephone companies **must** so separate the expenses, leaving it to the companies to find out **how** to do it.

As to separating the expenses among exchanges it is obvious that this can be done strictly only for the local expenses, such as wages of operators and

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Note.—*In a recent English case, the sale of the property of the* National Telephone Company to the British Post Office, the Sinking Fund method of calculating the present value of plant was rejected and the straight-line method was followed. See The Accountant Editorial, Jan. 25, 1913.

certain repairs. But the greater part of the expenses, in the larger companies particularly, cover the work done by district, division and general forces, all of which must be arbitrarily apportioned if figures by exchanges are to be made up.

The genesis of the idea that such figures were necessary seems to be that the exchange was the original unit, a) of ownership, b) of administration, and c) of rate-making. No one of these conditions prevails to-day in the Bell System, except in so far as local authorities have jurisdiction of rates, and as State Commissions take jurisdiction they naturally and properly tend to consider all rates from the state-wide standpoint.

To the manager of a small company operating from one to a dozen exchanges, the idea of segregating figures according to exchanges seems natural and reasonable, and so far his views have been generally accepted by Commissions, but the tendency is away from this idea, as is illustrated by the final decision of the Interstate Commerce Commission to require plant and expenses to be segregated into the three classes:

a) Pertaining solely to any exchange system.
b) Pertaining solely to any toll system.
c) Common to two or more exchange or toll systems.*

When it becomes apparent, as it surely will, that nearly all plant and expenses are common to both exchange and toll service the requirement as a regular routine accounting method will probably die a natural death.

d) Departmental Expenditures.

The influence of administrative needs in the accounts was particularly marked in the subdivision of

*Sec. 2 General Instructions Interstate Commerce Commission Order of December 10, 1912.

expenses along the lines of functional organization, to the end that every department head might know the expenditures for which he was held responsible. This has already been described, and it is only mentioned here because it is another point on which the companies and the commissions have found it hard to reconcile their respective viewpoints. The compromise effected recognizes to a considerable extent the functional organization commonly followed by the companies, and permits such further subdivisions of the main accounts as are desired. By making these subdivisions along departmental lines the Bell Companies can get, though rather awkwardly, what the departmental administrative officers need.

e) Form of Accounts for General Publication.

In preparing accounting data for general publication the great object to be sought is to so present it that people will read it, and, reading, will really understand its significance.

Simplicity, then, is the first consideration, and to tell the whole truth in a simple form about a vast and complicated industry is no easy task.

There are many technical distinctions made by accountants which are more or less advantageous in a thorough analysis, but which tend to confuse the meaning of the information to the average reader. I will refer to but one and that briefly, viz., the distinction between the Statement of Income and the Report of Operating Revenues. It is true that the latter is but a part of the former, but to answer the two most natural questions about a company's results, "How much was earned for dividends?" and "How much was charged for Depreciation?" one would have to refer to both statements.

For general use the two should be combined and experience shows that the simple form, comprising only eleven lines, in which the Bell System's earnings are reported, usually gives all the information wanted.

These various needs and forces were what shaped the accounting of the Bell Telephone System up to the end of the year 1912, as it was set forth in Accounting Circular No. 6 with various interpretations in a series of fifty-one questions and answers assembled together as Circular No. 7.

IV. THE PERIOD OF ACCOUNTING UNDER FEDERAL REGULATION.

We come at last to the period of telephone accounting that is under the regulation of the Federal Government, and specifically that branch of the Federal Government known as the Interstate Commerce Commission.

1) Authority of the Commission.

The successive steps by which the Interstate Commerce Commission has this authority are these:

First, the Constitution provides that "Congress shall have power * * * to regulate commerce with foreign nations and among the several states."

Second, the "Act to Regulate Commerce" approved February 4, 1887, constituted the Commission and gave it jurisdiction over common "carriers engaged in the transportation of passengers or property wholly by railroad, or partly by railroad and partly by water" from one state to another. The original act gave the Commission limited authority as to accounts, but this was extended by amendment in 1906, and beginning with 1907 uniform accounting for railroads has by successive stages gone into effect.

Third, by the amendment of June 18, 1910, "telegraph, telephone and cable companies (whether wire or wireless) engaged in sending messages from one state * * * to any other state * * * or to any foreign country" were brought under the act and thereby the Interstate Commerce Commission was given the same authority with respect to accounts of telephone companies as it had previously with respect to railroads. The Commission has authority to require periodical reports and to prescribe the manner in which they shall be made, although the statute prescribes certain details in annual reports (see Section 20). The Commission may also "prescribe the forms of any and all accounts, records and memoranda" and "at all times have access" thereto. Further, "any person who shall willfully make any false entry * * * or willfully destroy, mutilate or alter * * * or willfully neglect or fail to make full, true and correct entries * * * shall be deemed guilty of a misdemeanor" with a punishment of fine or imprisonment or both.

It hardly need be added that all this makes the control of the Commission absolute over the accounts of the companies concerned.

2) What the Commission Has Done.

Soon after the passage of this amendment of June 18, 1910, by which telephone companies were brought under the Act to Regulate Commerce, the accountants of the Interstate Commerce Commission began work on a system of uniform accounts for telephone companies. At about the same time the Public Service Commission, Second District, of New York, undertook a similar task for the telephone companies in the State of New York, and there was an effective co-operation between the representatives of these two Commissions.

Numerous conferences were held between these representatives of the Commissions and the representatives of telephone companies, as a result of which the Interstate Commerce Commission issued a Tentative System for Uniform Accounting under date of November 15, 1911, Accounting Series Circular No. 30, while the New York

Public Service Commission issued an order prescribing accounts to go into effect January 1, 1912.

The tentative system proposed by the Interstate Commerce Commission was not received by telephone companies until late in the year 1911, and there was so much protest against its becoming effective January 1, 1912, that another year was given for consideration of the entire subject. During this year more conferences were held and briefs were filed by various parties in interest. Finally the Uniform System of Accounts for Telephone Companies having annual operating revenues exceeding $50,000 was issued as an order of the Interstate Commerce Commission on December 10, 1912, effective January 1, 1913. This is now the official system of accounts which all but the smaller companies are henceforth required to follow.

The accounts prescribed may be most conveniently considered under six groupings:

a) Balance Sheet Statement.
b) Income Statement.
c) Corporate Surplus or Deficit Account.
d) Operating Revenue Accounts.
e) Operating Expense Accounts.
f) Clearing Accounts.

a) Balance Sheet Statement.

The Balance Sheet Statement comprises, of course, the assets and liabilities, and of the assets Fixed Capital is the first and most important. "By the Fixed Capital of a company (frequently termed the Construction account) is meant the property, both tangible and intangible, which is devoted to the accomplishment of the principal purposes of its business." (Page 32.)

As to the Fixed Capital prior to January 1, 1913, the Commission requires only those subdivisions which each company had on its books at December 31, 1912, the intent being that no company shall be required to subdivide its property held at that time to accord with the subdivisions of Fixed Capital prescribed for the future.

As to Fixed Capital installed since December 31, 1912, certain sub-accounts are required. Besides Intangible Capital (which is, in turn, divided into Organization, Franchises, Patent Rights and Other Intangible Capital) the sub-accounts representing Physical Plant are in the main similar to those already in effect in the Bell Telephone System, which have already been mentioned.

In not attempting any subdivisions of Fixed Capital prior to January 1, 1913, the Commission has doubtless acted wisely from the standpoint of its jurisdiction and considering the previous diversity in property accounts of the numerous small companies throughout the country not following the Bell System accounting.

From the accounting standpoint, however, we have the anomaly that the Balance Sheet will not show a distinction between the intangible property as a whole and the physical plant as a whole.

In the comments of the Bell System filed April 13, 1912, this condition is criticised in the following terms:

> "The accounts under the general term Fixed "Capital do not distinguish prior to January 1. "1912,* between physical and intangible prop-"erty. We think this distinction so important "that a Balance Sheet not making it is practically "valueless. We think too that the term Fixed "Capital is ill-chosen, and we recommend that "the accounts 'Fixed Capital Installed Prior to "January 1, 1912'* and 'Fixed Capital Installed "Since December 31, 1911'* be eliminated, and "accounts entitled 'Physical Plant' and 'Intangi-"ble Property' with appropriate definitions be "substituted."

*See page 8 of Comments of Comptroller of American Telephone & Telegraph Company on Tentative Accounting Series Circular No. 30. The dates were, in the final order, set a year later but the principles criticized were not changed.

The Commission states that Fixed Capital consists of Original Capital, Additions, Betterments and Replacements, and the cost thereof should be charged in accordance with definitions given of these terms.

On this again the Bell accountants differed from the Commission accountants and set forth the reasons why such distinctions could not be made in practice co-ordinately with the other procedure prescribed for additions to and withdrawals from plant. It is probable that the intent of this provision can be met by general estimates outside the regular accounting procedure.

In other respects the Commission follows in the main the plan of Plant and Maintenance accounting previously used by the Bell System and hereinbefore described.

The Commission has attempted to see that for the future all charges to Fixed Capital are to be at actual money costs. This is, generally speaking, a proper rule, but occasions will arise where it may fairly be questioned. In the first place, Section 20 of the Act to Regulate Commerce says that the annual reports of the companies shall show, among other things, "the cost and value of the carrier's property, franchises and equipments." Now **cost** and **value** may be synonymous at the moment property is acquired, but value usually begins to change immediately, while cost remains fixed. Yet what carrier does or could keep a continuous or even an annual **value** of its property? Again the decisions of the courts in rate cases generally take "present value" as a basis for the amount on which a public utility is entitled to earn a fair return. This, too, is commonly the rule followed by Commissions, and as a result it has frequently happened that a careful inventory or physical valuation of the property at a given time has had to be made, as, for instance, in the consideration of Massachusetts telephone rates a few years ago, at which time under the direction of the Massachusetts Commission the inventory value was placed on the books of the company.

Another difference of opinion arises in connection with going or completed plant purchased. The natural rule would seem to be that the cost of reproduction should be appraised at the time of purchase and added to the Fixed Capital Accounts and the accrued depreciation thereon, likewise appraised, should be added to the account Reserve for Accrued Depreciation. But the Commission, after carefully considering the points involved, determined that the net of these two values (but not exceeding the actual cost in any case) should be charged the Fixed Capital accounts as being the cost to the purchaser. The Report of the Committee on Telephone and Telegraph Rates and Service of the National Association of Railway Commissioners submitted in November, 1912, gives a view of several State Commissioners as differing from the Interstate Commissioners as follows:

> "Would it not be well for us to consider "some of the modifications which suggest them- "selves, such as * * * the setting up of "plant values in such form that uniform bases of "values shall become the basis of the accounts, "not leaving part of the values entered in ac- "counts as cost or replacement value new, and "part as depreciated value at the various points "of acquisition."*

Doubtless some solution will be found of these various views with respect to what values the books should show under Fixed Capital, but at the present time the prospect of representative plant values on a common basis for all alike is very faint.

The other assets and liabilities are carefully defined, and, being along the lines commonly accepted by accountants as sound accounting practice, need not be described here.

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*p. 798 Public Service Regulation, December, 1912.

b) **Income Account.**

The Income Account brings together the Operating Revenues, the Operating Expenses, the Non-operating Revenues and the Non-operating Revenue Deductions, the net balance of which is called the Gross Income for the period. From this Gross Income so determined are deducted Rent,* Interest, Amortization of Landed Capital, and various miscellaneous items, resulting in a balance called Net Income. The disposition of this Net Income for Sinking or other Reserve Funds, for Dividends and for any other appropriations is then shown and the balance is transferred to the Corporate Surplus or Deficit Account.

c) **Corporate Surplus or Deficit Account.**

The Corporate Surplus or Deficit Account is the connecting link between the Income Account and the Balance Sheet. It summarizes the changes in the Corporate Surplus or Deficit during a given fiscal period and also the accounting adjustments and miscellaneous losses or gains not attributable to the period or not provided for elsewhere, and for these purposes debit and credit sub-accounts under Surplus are provided.

Among these debit sub-accounts of Surplus is "Realized Depreciation not covered by Reserves," which account would not be necessary, of course, if all companies now had adequate depreciation reserves. It is the intention that Surplus shall be charged the original cost less salvage of any tangible fixed capital which is retired whenever the depreciation therefor has not been provided through a depreciation reserve.

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*Rentals paid for offices and other quarters have heretofore been considered an operating expense. The change by which they become a deduction from gross income is an important innovation which the companies generally believed was unwise.

d) **Operating Revenue Accounts.**

The two main classes of revenue, Exchange and Toll, are continued as they have come down through many years.

Exchange service revenue may be said to include the revenue from messages transmitted from one telephone station to another, when both stations are within what is commonly known as an exchange area.

Toll service revenue, on the other hand, is that derived from messages between telephone stations in different exchange areas. If such a message is transmitted over the lines of more than one company the revenue is by arrangement between such companies divided among them and each reports as toll revenue only that part of the tolls to which it is entitled.

e) **Operating Expense Accounts.**

Four main divisions of operating expense accounts are provided:

First: Maintenance expense, which continues the classification previously prevailing in the Bell companies of Repairs (subdivided according to classes of plant), Station Removals, and Depreciation.

Second: Traffic expense, which represents the cost of operating the central offices and public pay stations.

Third: Commercial expense, which is principally the cost of soliciting business, of directories, and of accounting for and collecting the revenue.

Fourth: General and miscellaneous expenses include the cost of general administration, legal expenses, insurance, compensation for accidents and damages, relief to employees and pensions, and the amortization of franchises.

f) **Clearing Accounts.**

The so-called clearing accounts are provided for those expenses which usually affect several classes of operations but have to be brought together in one account in order that the total expenses under each may be known and may be properly distributed. One of these clearing accounts may be taken as typical of the whole, namely, Plant Supervision Expense. The Plant Department of a telephone company has the two-fold responsibility of maintaining the plant already in service and of constructing new plant. The construction of new telephone plant is a continuous process, both by reason of the rapid growth of the telephone service and also because of the reconstruction of existing plant. The employees of the Plant Department are best organized under one general supervision and the expense of this supervision cannot as it is incurred be charged directly to the proper plant asset or maintenance accounts. It is therefore grouped together in this clearing account called Plant Supervision Expense and at the end of each month the account is cleared by charging to the proper plant and maintenance accounts such expenses as can be allocated to particular pieces of work, the balance being distributed on the basis of labor employed in all construction and maintenance work in progress.

V. CONCLUSION.

The establishment of this accounting system by the Interstate Commerce Commission involves a vital change in the attitude of the chief accounting officer in every telephone company toward the accounts of his company. While he should continue to keep the accounts by such methods as will express for the administrative officers of his company and for the investing public the results of the business in the form most significant for their uses, yet he can do this only so far as it will not conflict with the official accounting prescribed. His main responsibility is now to **follow the law** laid down for him by the Interstate Commerce Commission. This has no less difficulties, but they are the difficulties of interpretation rather than of creation.

In the great public utilities of to-day certainty, completeness and safety are the prime essentials, or, in other words, the efficiency of the service comes first. The help that good accounting can give toward efficiency in this complex, constantly developing and nation-wide telephone service is very great. Likewise the harm and hindrance of poor accounting is very serious.

We have seen that, in its main features, telephone accounting has been an evolutionary process proceeding more rapidly at some times than at others, but following closely the rapid development of the industry itself. Yet, while the main features have not been suddenly or radically changed, there has been much variety and flexibility in the secondary accounting, and this has contributed greatly to the progress of the whole.

Now the rigidity of law has taken the place of this flexibility, and, while we may reasonably expect that the Commission and its representatives will be liberal and constructive in their interpretation of their accounting instructions, nevertheless we must not blink at the fact that those instructions have the force, the exactitude and the rigidity of law. Not only must their intent or spirit be followed, but their literal meaning must be complied with, and whenever that literal meaning is ambiguous or doubtful its interpretation and its application in specific cases must be sought from the Commission.

There are obvious dangers in this exactitude and rigidity, chiefly because the slow and cumbersome processes through which interpretations must be sought or changes in accounts authorized will tend to discourage progress. Such dangers can be overcome, or at least greatly minimized, by active and effective co-operation between the companies and the Commission. For instance an organization of telephone accounting officers could through discussion and recommendations do much toward keeping the accounting prescribed by the Commission abreast with the country's developing telephone service.

Whatever misgivings we may have about some of the accounting methods now prescribed or the possible check to accounting progress through the rigidity of a prescribed system, yet after all these are minor points in the working out of a great public policy—the regulation of public utilities—and I for one believe that in carrying out this policy the American people not only intend to adjust fairly all the natural rights of investors, employees and patrons, but what is more will find a practical way to do it.

VI. APPENDICES.

As most of the early circulars on accounts and forms for statements are out of print and no longer available, the following appendices are added as likely to be of interest and value to future students of the subject:

Appendix A—Form for Statement of Business used by Bell Companies in 1883.

Appendix B—Circular on Accounts April 25, 1884.

Appendix C—Circular on Accounts December 30, 1887.

Appendix D—Forms recommended by Mr. Edward J. Hall, about 1890.

Appendix E—Circular on Accounts January 1, 1891.

Appendix F—Form for Condensed Trial Balance and Statement of Business—substantially as used from about 1891 to 1908.

The only subsequent circular on accounts issued by The American Bell Telephone Company was that dated January 1, 1904. This together with the following circulars issued by American Telephone and Telegraph Company are still available:

Accounting Circular No. 1—Dec. 20, 1907. Complete Accounting System.
" " No. 2—Jan. 20, 1908. Damage and Compensation Accounts.
" " No. 3—Nov. 21, 1908. Real Estate and Private Line Revenue.
" " No. 4—Nov. 23, 1908. Maintenance Accounts.
" " No. 5—Jan. 11, 1909. Questions and Answers.
" " No. 5A—May 6, 1909. Questions and Answers.
" " No. 5B—July 26, 1909. Questions and Answers.

Accounting	Circular	No. 6—Nov. 15, 1909. Complete Accounting System. (Cancels all previous circulars.)
"	"	No. 6A—Dec. 1, 1910. Minor Changes.
"	"	No. 6B—Jan. 28, 1911. Minor Changes.
"	"	No. 6B-1—June 10, 1911. Minor Changes.
"	"	No. 6C—Dec. 20, 1911. Minor Changes.
"	"	No. 6C-1—Dec. 28, 1911. Minor Changes.
"	"	No. 6—First Revision Jan. 1, 1912. Complete Accounting System. (Cancels all previous circulars.)
"	"	No. 6A—June 1, 1912. Minor Changes.
"	"	No. 7—Feb. 3, 1910. Questions and Answers.
"	"	No. 7A—May 9, 1910. Questions and Answers.
"	"	No. 7B—Sept. 15, 1910. Questions and Answers.
"	"	No. 7C—March 15, 1911. Questions and Answers.
"	"	No. 7D—June 8, 1912. Questions and Answers.
"	"	No. 8—Dec. 28, 1912. Complete Accounting System based on Interstate Commerce Commission order of December 10, 1912.
"	"	No. 9—Dec. 28, 1912. List of Circular No. 6 accounts and corresponding Circular No. 8 accounts.

APPENDIX A

FORM FOR STATEMENT OF BUSINESS USED BY BELL COMPANIES IN 1883.

.... *Company.*

TRIAL BALANCE, 188

	DR.			CR.		
CAPITAL STOCK,						
SURPLUS,						
RESERVE,						
For Unearned Rentals,						
For						
ACCOUNTS PAYABLE,						
Pay Roll,						
Sundry Creditors,						
OUTSTANDING TOLL TICKETS AND TOLL DEPOSIT ACCOUNT,						
LICENSES AND RIGHTS OF WAY,						
CONSTRUCTION,						
BELLS,						
MERCHANDISE,						
PERSONAL PROPERTY,						
ACCOUNTS RECEIVABLE,						
STOCKS AND BONDS,						
CASH,						
EARNINGS,						
Exchange,						
Extra Territorial,						
Private Line,						
Telegraph Commissions,						
Messenger,						
Miscellaneous,						
EXPENSES,						
General Office,						
Operating,						
Messenger.						
Pole Rent,						
Miscellaneous,						
Repairs and Maintenance,						
Reconstruction,						
Damage and Compensation,						
Commission, Am. Bell Tele. Co., on Ex. Ter. and Teleg. Business,						
Rental, American Bell Telephone Co.,						
DIVIDEND ACCOUNT,						

ASSETS.				LIABILITIES.			
LICENSES & RIGHTS OF WAY				CAPITAL STOCK,			
CONSTRUCTION,				BONDS,			
MERCHANDISE,				SURPLUS,			
PERSONAL PROPERTY,				RESERVE,			
ACCOUNTS RECEIVABLE,				ACCOUNTS PAYABLE,			
STOCKS AND BONDS,				PROFIT AND LOSS,			
CASH,							

General Statement of Business for the Quarter Ending 188

Gross Earnings,	
Expenses,	
Net Earnings,	
Increase of Earnings over those of previous quarter,	
" Expenses, " " "	
" Net Earnings " " "	
Per Cent. of Expenses to Earnings,	
Per Cent. of Net Earnings to Capital,	
Dividends paid during the quarter,	
Number of Exchanges,	
Monthly rate for Residences,	
" " " Offices,	
Gross Receipts from Extra Territorial Business,	
Per cent. of Extra Territorial to Gross Earnings,	
Capital Stock issued,	
Par value per share,	
Number of Telephones in use,	
Net Income per Telephone in use,	

Form 319.

SUBJECT.—ACCOUNTS.

W. H. FORBES, President.
C. P. BOWDITCH, Vice President.

THEO. N. VAIL, General Manager.
WM. R. DRIVER, Treasurer.

THE AMERICAN BELL TELEPHONE COMPANY

No. 95 Milk Street.

P. O. DRAWER 2.

BOSTON, APRIL 25, 1884.

GENTLEMEN:—

We have frequently been asked for advice regarding the best method of keeping the accounts of telephone companies, and now beg to offer the following suggestions, the general adoption of which will, we believe, be found of advantage, in effecting such uniformity in the accounts of the several companies as will afford better opportunities for the comparison of results.

It is desirable that not only the record of instruments and leases, but the inventories of property of different classes,—Exchange Apparatus, Bells, Mileage of Wire, Poles, etc.,—should be kept with accuracy; and that the system of accounts, while not too complicated, should be capable of showing, at the end of each month, the true condition of the company's affairs, and the actual earnings and expenses pertaining to the several departments of the business.

The following list includes the accounts which have been found in most common use upon the books of the principal telephone companies:—

- Licenses.
- Rights of Way.
- Investment.
- Construction Accounts.
- Bells.
- Merchandise.
- Personal Property Accounts.
  - Office Furniture and Fixtures.
  - Tools.
  - Horses and Wagons.
- Accounts Receivable.
- Stocks and Bonds.
- Cash.
- Expense Accounts.
  - General Office.
  - Rents.
  - Insurance.
  - Taxes.
  - Stationery and Printing.
  - Operating.
  - Extra-Territorial.
  - Private Line.
  - Messenger.
  - Pole Rent.
  - Repairs and Maintenance.
  - Reconstruction.
  - Proportion A. B. T. Co. Ex-Ter. Receipts.
  - Proportion A. B. T. Co. Telegraph "
  - Rental Am. Bell Tel, Co.
  - Miscellaneous.
- Dividend Account

- Capital Stock.
- Surplus.
- Reserve for Unearned Rentals.
- " " Depreciation.
- " " Doubtful Accounts.
- Outstanding Toll Tickets.
- Accounts Payable.
  - Pay Roll.
  - Sundry Creditors.

- Earnings Accounts.
  - Exchange.
  - Tolls (Exchange.)
  - Extra-Territorial.
  - Private Line.
  - Telegraph Commissions.
  - Messenger.
  - Miscellaneous.

In addition to the numerous personal accounts, most companies find it necessary to make use of others than those named above, to represent transactions of a special nature. In the printed form of trial balance which we have provided, spaces have been left for such accounts.

In the foregoing list, "Merchandise" is the account showing the value of material not yet applied to construction or repair.

"Accounts Receivable" includes uncollected dues, as shown by the subscribers' ledger, and total of debtor personal accounts on the general ledger.

In the Expense accounts, "General Office" includes salaries and expenses pertaining to the general management of the business; "Operating," the salaries and ordinary expenses of operating exchanges; "Reconstruction," that portion of the cost of rebuilding or replacing property not properly chargeable to Construction.

When bills are sent out for quarterly or semi-annual rentals, "Accounts Receivable" should be charged with the amount of the bills, and Earnings credited with one month's proportion of the amount, the "Unearned Rental" account being credited with the remainder; at the beginning of each successive month, the latter account to be charged, and Earnings credited, with that month's proportion. As the bills are paid, of course "Cash" is debited and "Accounts Receivable" credited.

"Outstanding Toll Tickets." When tickets are sold, this account should be credited with the proceeds of sale. At the end of the month, Earnings, "Toll," "Extra-Territorial" etc., should be credited with the amount of the tickets redeemed, this account then being charged with like amount.

As regards the closing of the books, the practice varies with different companies. A few close quarterly, the greater number at the end of the financial year, which has some advantages over the other plan.

"Construction" should represent the value of the plant, and may properly be subdivided, according to the service to which the property is applied, into "Exchange," "Toll Line," "Extra-Territorial Line," and "Private Line." It is recommended that the accounts for the several classes of new construction be kept distinct, and at the close of each financial year, carried to the general construction accounts.

This account should be charged with the value of exchanges, lines, etc., purchased or built. In the case of new construction, the cost of material and labor, and expense incident to the new work, constitute a part of its value, as well as the salaries of officers employed expressly for the purpose of directing the work.

In case of the rebuilding of an exchange or line, of change from housetop to pole lines, the substitution of cables for separate wires, or in general such change of plant or apparatus as replaces an inferior system with one affording better facilities, "Construction" should be charged with the cost of the new plant, and credited with the cost of the old, less the value of such portion of the old material as has been used in the reconstruction. If any part of the old material has been placed in stock for future use, the "Merchandise" account should be charged with the value of such material. The balance of cost of the first plant should be charged to Expense, under the head of "Reconstruction," upon the principle that the material not fit for use, and the cost of the labor, are an absolute loss.

As regards the accounts to which certain salaries, for instance those of the General Manager, superintendents and canvassing agents, should be charged, the weight of opinion, among those who have been long engaged in the management of the telephone business, is against making such expenditures a charge upon the Construction account.

In a company whose business is well established, it is difficult to see why any part of the general office expenses, or the salaries of general officers, other than those who are distinctively employed upon new construction, should be charged to the Construction account, these being expenses necessary to the maintenance of the business, and which, it is fair to assume, would be continued, even upon the cessation of new construction, while the volume of business remained substantially the same.

It seems equally clear that the salaries of officers of an established exchange, whose principal duties are the care of property and the management of the regular business of the exchange, though a part of their time may be employed in enlarging the business and taking charge of new construction incident thereto, should be charged under the head of Expense.

The cost of advertising, or the pay of canvassers for new business, cannot properly be regarded as part of the cost of new construction, although by such means the business may be extended and new construction be necessitated.

The telephone business has not been sufficiently long established to afford trustworthy statistics from which the average depreciation of plant and equipment can be determined. The usual estimate of such depreciation is ten per cent. yearly, taking all classes of property together Assuming that the greater portion of the lines and exchanges now in use have been either constructed or rebuilt during the past three years, and that upon the books of most of the companies the Construction account stands charged with the larger part of the cost of rebuilding, as well as the cost of new work, it is certain that the present expense for Repairs and Reconstruction is not proportionate to the actual deterioration of property, and that in future years the revenue of most companies will be subjected to much heavier charges on this account. It is suggested that a reserve fund be set apart, to which shall be carried such part of the annual profits as represents the estimated amount of yearly depreciation not covered by the expenditure on account of Repairs and Reconstruction.

It is worth considering also whether the Construction account should not be credited with the cost of such property as falls into disuse and is abandoned, by reason of discontinuance of subscribers.

Yours very respectfully,

Thomas Sherwin

Auditor.

Form 890.

SUBJECT: DISTRIBUTION OF EXPENSES.

HOWARD STOCKTON,
President.
JOHN E. HUDSON,
Vice-Pres. and Gen. Man'gr.
WM. R. DRIVER, Treasurer.

THE AMERICAN BELL TELEPHONE CO.

No. 95 MILK STREET.
P. O. DRAWER 2.

BOSTON, December 30, 1887.

GENTLEMEN:

In our Circular of April 25th, 1884, we presented an outline for a system of accounts, which, in its essential features, is now employed by most of the companies throughout the country. Its general adoption has proved of unquestioned value, by facilitating the comparison of results in different localities. We believe the principles stated in that Circular have been recognized by those having the management of telephone companies, without exception, as correct.

In naming the several subdivisions of Expense, it seemed advisable to avoid the multiplication of accounts, which might involve a considerable addition to the work and cost of the accounting departments. Otherwise the list might have been extended. By several of the companies, a further subdivision has been made.

The practice is not yet quite uniform, as regards the apportionment of Expense under its several heads, and to secure greater uniformity, which is certainly desirable, we offer the following suggestions, having first consulted many of those having charge of company accounts:—

DISTRIBUTION OF EXPENSES.

1.	General Office,	Should include Salaries of Executive and Financial Officers, Clerks, and other General-Office Employees; their Travelling Expenses while engaged upon the general business of the Company; the Repair of Furniture, Light, Heat, and incidental expenses of the General Offices.
2.	Rents.	All Rents.
3.	Insurance.	All Premiums.
4.	Taxes.	All Taxes.
5.	Stationery and Printing.	All Books, Stationery, Printing, Postage.

6. Operating. Salaries and Wages of Exchange Managers, Operators, Collectors and others engaged upon the Current Exchange Work (other than the Construction and Repair force); their Travelling and incidental expenses; Battery Supplies, Fuel, Light and other local charges. The Salary and incidental expenses of the Division Superintendent may properly be apportioned to the several exchanges constituting his division.

7. Extra-Territorial. This account should be subdivided into "Operating" and "Repair." When it is practicable to separate the cost of working the extra-territorial system from that of the exchanges, the former subdivision includes items of similar nature to those named in 6; the latter, such as are named in 11. The extra-territorial work is of necessity so closely interwoven with that of the exchanges, that most of the Companies have been, thus far, unable to make a satisfactory division of the accounts.

8. Private Line. Actual Expense of the Private Line and Agency System, excepting Instrument Rental.

9. Messenger.

10. Pole Rent.

11. Repairs and Maintenance. Salaries and Wages of Foremen, Linemen, Inspectors, and Laborers engaged in keeping the plant and property in serviceable condition; cost of Repair Material, and the Freight thereon; Travelling and other expense incident to the work.

12. **Reconstruction.** Items of similar character to those above named, which pertain to the work of Reconstruction as defined in Circular of April 25th, 1884.

13. Damage and Compensation. Cost of injury to persons or property caused by the Poles, Fixtures, Wires, etc., of the Company.

14. Rebate. Allowance to Subscribers for interrupted or defective service; also charges from Accounts Receivable for uncollectible dues.

15. Proportion to Am. Bell Tel. Co. of Extra-Terr'l Rec'ts. This should correspond with amount stated in monthly returns, form 304.

16. Proportion to Am. Bell Tel. Co. of Telegraph Rec'ts.

17. Rental, Am. Bell Tel. Co. Amount of Rental, after credits made on account of Rental Concessions:

(*a*) Exchange Instruments.
(*b*) Extra-Territorial Instruments.
(*c*) Private Line Agency, etc., Instruments.

18. Miscellaneous. Items which cannot readily be classified under the above headings.

With the aid of proper monthly returns and vouchers, showing classification of Expense, from the Exchange Managers, it becomes practicable to exhibit the Earnings and Expenses of the several exchanges, distributed under the various headings, including the actual rental of instruments.

To make such statements complete it is necessary to apportion General Expense, State Taxes, and some other items which cannot be localized, upon an arbitrary basis. It seems the best practice to apportion these expenses upon the basis of Gross Earnings of the Exchanges; charging to the Extra-Territorial and Private Line branches of the service their due proportion, when the accounts of these branches are kept distinct from those for the Exchange Systems.

Local tolls, that is, charges for messages within exchange limits, are essentially a part of the exchange revenue. It is desirable to have a separate account for the earnings from this source, ("Exchange" earnings in our forms being intended only for subscribers' rentals); but we do not suggest carrying the expenses for this service to a distinct account.

Very respectfully,
Thomas Sherwin
Auditor.

APPENDIX D

FORMS RECOMMENDED BY MR. EDWARD J. HALL ABOUT 1890.

APPENDIX D

DR. TRIAL

- ASSETS
  - **Intangible**
    - Franchise
    - Good Will
    - Patents
  - **Plant**
    - Exchanges — Consolidated from several accounts or *Auxilliary books*
    - Underground Conduits — do
    - Underground Cables — do
    - Equipment — do
    - Toll Lines — do
  - Investment
    - Real Estate
    - Stocks and **Bonds**
  - **Quick**
    - Merchandise — do
    - Accounts Receivable — do
    - Cash
- **EXPENSES**
  - Operating — do
  - Maintenance — do
  - General Expense — do
  - Royalty — do
  - Taxes — do
  - do
- PROFIT AND LOSS CHARGES
  - Dividends Paid
  - Interest
  - Profit and Loss

BALANCE

CR.

- LIABILITIES
  - **Stockholders**
    - Capital Stock
    - Surplus
  - Reserve Accounts
    - **Unearned Rentals** < Consolidated from several accounts or Auxilliary books
    - Toll Tickets < do
    - Depreciation < do
  - **Funded**
    - Bonds
  - **Quick**
    - Bills Payable < do
    - Accounts Payable < do
- EARNINGS
  - **Telephone**
    - Exchange Service < do
    - Toll Line Service < do
    - Private Lines < do
  - **Other Sources**
    - Real Estate
    - **Dividends and Interest**
    - Miscellaneous

CONDENSED INCOME ACCOUNT

TELEPHONE EXPENSES		TELEPHONE EARNINGS	
Operating		Exchange Service	
Maintenance		Toll Messages	
General Expense		Private Lines	
Royalty			
Taxes			
Balance			
Total			
Miscellaneous Expenses		Telephone Income Balance	
Interest		Real Estate	
P. and L. Charges		Dividends and Interest	
Balance		Miscellaneous	

CONDENSED INVENTORY & STATISTICS

Annual Budget

1891	JANUARY				FEBRUARY, etc.
NUMBER OF SUBSCRIBERS	MONTH		PER STATION		
EARNINGS					
Exchange Service					
Toll Messages					
Private Lines					
TOTAL EARNINGS					
EXPENSES					
Operating					
Managers and Operators					
Office Rent					
Pay Stations					
Light and Fuel					
Printing and Stationery					
Miscellaneous					
TOTAL OPERATING					
Maintenance					
Labor					
Materials					
Traveling Expenses					
Damages					
Pole Rental					
Conduit Rental					
Rent					
Printing and Stationery					
Light and Fuel					
Miscellaneous					
TOTAL MAINTENANCE					
General Expense					
Salaries					
Traveling Expenses					
Legal					
Rent					
Light and Fuel					
Printing and Stationery					
Canvassing and Advertising					
Miscellaneous					
TOTAL GENERAL EXPENSE					
Royalty					
Rentals to A. B. T. Co.					
Extra Territorial Commission					
Telegraph Commission					
Switchboard					
TOTAL ROYALTY					
Taxes					
Franchise and License					
Gross Receipts					
Plant					
Personal Property					
TOTAL TAXES					
Total Earnings					
do Expenses					
Income Balance					
Stations Added					
do Removed					
Total Changes					
Net Gain					
Expended for Construction					
Exchange					
Underground Conduit					
do Cables					
Toll Lines					
Private do					
Total for Construction					

Form 319B.

JOHN E. HUDSON, President.
WM. R. DRIVER, Treasurer.

SUBJECT—ACCOUNTS.

THE AMERICAN BELL TELEPHONE COMPANY,

NO. 95 MILK STREET.

P. O. DRAWER 2.

BOSTON, January 1, 1891.

....Company,

GENTLEMEN,— We present herewith the outline for a system of accounts, containing such modifications of the plan proposed in our circulars of April 25, 1884, and December 30, 1887, as seem advisable, in view of changes which have been made both in methods of construction and of operating the telephone business, and the greater or less prominence which the experience of past years has shown to attach to certain branches of the service.

In framing this system of accounts, the objects which have been kept in view are: —

FIRST. That the books may be made to contain in themselves a complete and clear record of all the financial transactions of a company, in such form that any competent accountant can readily trace each item from its first entry upon the books to its final place in the proper ledger account, or reverse the process; and that the books shall afford the means of verifying easily, and with the utmost certainty attainable, the accuracy both of the accounting and the money departments.

SECOND. That from the book accounts, statements can be made up without difficulty, showing, at the close of any month, the property of the Company, its liabilities, and the results of the business, either in condensed form or with such analysis and detail as may be desired. With a proper classification, the monthly trial balances will present the accounts in such form that a comparison of successive sheets will afford a reasonably accurate history of the business, month by month, show the increase or decrease of different kinds of property or obligations, and draw attention to unusual amounts in any of the principal classes of earnings or expenses.

THIRD. That the method should be simple and direct, requiring no unnecessary expenditure of time and labor, adapted to the needs of all the companies operating the various branches of the telephone business, whether employing a large and thoroughly organized force of accountants or otherwise; and that its adoption may be productive of such uniformity in the accounts of the several companies as will afford the best facilities for the comparison of results.

We have aimed to make the classification of accounts such as best to express, under the respective titles, the actual character of the properties, liabilities, or operations which they are designed to represent.

All the accounts may be grouped under four heads:

1. ASSETS,
2. LIABILITIES — direct and contingent,
3. EXPENSES,
4. EARNINGS. (Working Accounts),

or finally under the two classes first named, the difference between all expenses and earnings, after deducting dividends, falling into the surplus or revenue balance account. If the balance stands on the credit side, it is to be regarded as a liability to the stockholders; if on the debit side, as a claim against them, to be met by assessment, contribution, or future earnings.

We believe the following list of ledger accounts, with the few additional ones which certain companies find necessary to represent special classes of property or transactions, will meet the requirements of the business: —

ASSETS.

I. Franchise.
II. Construction —
  (1) Exchange Aerial.
  (2) Underground Conduits.
  (3) Underground Cables.
  (4) Equipment.
  (5) Toll Lines.
III. Supply Department.
IV. Real Estate.
V. Stocks and Bonds.
VI. Accounts Receivable.
VII. Cash.

LIABILITIES.

I. Capital Stock.
II. Surplus.
III. Bonded Debt.
IV. Real Estate Mortgage Notes.
V. Reserve—
  (1) For Unearned Rentals.
  (2) For Outstanding Toll Tickets.
  (3) For Maintenance.
  (4) For Taxes.
  (5) For Accrued Interest.
VI. Bills and Accounts Payable.

EXPENSE ACCOUNTS.

I. General —
  (1) Salaries and Wages.
  (2) Rent, Light, and Heat.
  (3) Travelling.
  (4) Postage, Printing, and Stationery.
  (5) Taxes.
  (6) Legal.
  (7) Incidental.
II. Operating —
  (1) Salaries and Wages.
  (2) Rent, Light, and Heat.
  (3) Incidental.
III. Maintenance —
  (1) Salaries and Wages.
  (2) Rent, Light, and Heat.
  (3) Material.
  (4) Travelling.
  (5) Conduit, Pole, and Roof Rent.

REVENUE ACCOUNTS.

I. Exchange Service.
II. Toll Service.
III. Private Line.
IV. Messenger.
V. Real Estate Revenue.
VI. Dividends and Interest.
VII. Miscellaneous.

(6) Insurance.
(7) Damage and Compensation.
(8) Incidental.

IV. Rental and Royalty—
(1) Instrument Rental, A. B. T. Co., Exchange.
(2) " " " ", Private Line.
(3) Proportion to A. B. T. Co. of Extra-territorial Receipts.
(4) " " " " Telegraph Commissions.
(5) Switch-Board Royalty.

V. Private Line Expense.

VI. Messenger Expense.

VII. Real Estate Expense.

VIII. Interest.

IX. Miscellaneous Expense.

DIVIDEND ACCOUNT.

The above grouping of the accounts is intended to be such that the earnings and expenses which pertain to the actual operation of the telephone service may be readily separated from other revenues and expenditures of the Company, and that analysis of the accounts can conveniently be made to determine with a close approach to accuracy, the revenue, and the cost in detail of operating, by stations.

THE LIABILITY ACCOUNTS.

I. The Capital Stock Account should represent the actual issued capital.

II. Surplus should show the undivided net revenue of previous years. We advise that the Surplus account be not credited or charged direct with items of Earnings and Expense, or so-called Profit and Loss, but that all such items be passed through the Revenue and Expense accounts of the current year, even though there be some of them which pertain to business of an earlier date, but which could not, with due care, be ascertained and carried into the accounts of said date. The Earnings, Expense, and Dividend accounts will thus furnish the key to all changes in the Surplus account, the only exception being in case of action of the Directors, which would be of record, authorizing, for some special reason, a charge-off from the Surplus.

III. Bonded Debt, the indebtedness of the Company, the evidences of which, held by creditors, are in the form commonly known as Mortgage Bonds or Debenture Bonds.

IV. Real Estate Mortgage Notes.

V. Reserves. *First*, — For **Unearned Rentals.** When bills are sent out for quarterly, semi-annual, or annual rentals or exchange service, **Accounts Receivable** should be charged with the amount of the bills, and Earnings credited with one month's proportion of the amount, the **Reserve for Unearned Rentals** being credited with the remainder; at the beginning of each successive month the latter account should be charged, and Earnings credited, with that month's proportion. As the bills are paid, **Cash** is debited and **Account Receivable** credited.

Second,— For **Outstanding Toll Tickets.** When tickets are sold, this account should be credited with the amount which such tickets represent in service to be rendered. At the end of each month, the account should be charged with the amount of tickets redeemed within the month, which amount constitutes part of the credit to Earnings.

Third,— For **Maintenance.** A fixed amount having been appropriated for **Maintenance** of the property during the financial year, it is recommended, for the purpose of equalizing the monthly expenses, that one twelfth of the amount should be charged up each month as **Maintenance** expense. The **Reserve for Maintenance** account should represent the amount which, at the close of any month, remains unexpended, under the classified Maintenance accounts, of the amount so charged up for the months which have elapsed.

Fourth,— For **Taxes.** The balance of Taxes unpaid at the end of any month, of the proportion of estimated yearly taxes charged up in the same manner as above.

Fifth,— For **Accrued Interest.** The amount of interest which, at the end of any month, has actually accrued upon the indebtedness of the Company, but which has not then become payable.

VI. Bills and Accounts Payable. Dues of the Company upon open accounts, or for which ordinary notes of hand have been given.

THE ASSET ACCOUNTS.

I. Franchise.

II. Construction should represent the cost of the plant, whether purchased or built by the Company's force.

Of the several sub-divisions,—

First,— **Exchange Aerial** should include the cost of poles, house-top fixtures, aerial cables and wires, with the usual outside connections, employed in conducting the Exchange work.

Second,— **Underground Conduits.**

Third,— **Underground Cables.**

Fourth,— **Equipment** should include cost of switchboards, with the necessary appliances, within the operating rooms, connected therewith, bells and batteries in use, and furniture.

Fifth,— **Toll Lines,** the cost of lines used in operating the Toll and Extra-Territorial service.

The salaries of officers employed expressly to superintend the work of making extensions of the plant; the wages of foremen and laborers engaged upon such work; the travelling and incidental expenses of these employees while so engaged; the rent, light, and heat of rooms assigned to the construction force; and the cost of material, with the storage, freight, and teaming thereon, used upon the work, constitute the items properly chargeable to **Construction.** If the work is done under contract, the contract price should be charged upon the books.

In case of the rebuilding of an exchange or line, of change from house-top to pole lines, or from overhead to underground construction, the substitution of cables for separate wires, or, in general, such change of plant or apparatus as replaces an inferior system with one affording better facilities, it is evident that the addition to the **Construction** accounts should be only the amount by which the cost of the new work exceeds that of the old. If the new work is of the same class of Construction as the old, as, for example, in case of the rebuilding of an aerial line, a due proportion of the several items of cost, sufficient in the aggregate to cover the cost of the old work, less the value of the old material used upon the new work or turned in to the Supply Department, should be charged direct to the several **Maintenance** accounts.

If, however, the new work would come under a different class of Construction from the old, as in the case of replacing a part of the overhead system by underground conduits and cables, Construction of the proper class should be charged with the entire cost of the new work, and credit made to the old Construction account through the **Reserve for Maintenance** account.

It is recommended that the several classes of new construction, as above indicated, be carried upon the books during the course of each financial year, and at the close of the year be carried into the general **Construction** account. It is also recommended that a supplementary book be kept, in which shall be entered in detail the cost of each piece of Construction work under the proper classification as to its character and location.

III. SUPPLY DEPARTMENT ACCOUNT. In this account should be carried the cost of Tools, and Teams, as well as Supplies not issued for construction or maintenance, with freight and teaming thereon.

IV. REAL ESTATE. The cost of investments in land and buildings.

V. STOCKS AND BONDS. Securities of other companies owned by the Company.

VI. ACCOUNTS RECEIVABLE. Uncollected dues as shown by the Subscribers' ledger, and total of debtor personal accounts on the general ledger.

VII. CASH. Money on deposit in banks and cash in the hands of the Treasurer.

THE REVENUE ACCOUNTS.

I. EXCHANGE SERVICE should include Subscribers' Rentals, Pay Station Local Tolls, Telegraph Commissions, and Terminal Charges (upon Extra-Territorial business).

II. TOLL SERVICE. Charges for service over all Toll and Extra-Territorial lines.

III. PRIVATE LINE. Rentals upon leased instruments for Private Line, Club Line, and Speaking Tube use, also charges for use and care of lines, bells, and batteries connected therewith.

IV. MESSENGER. Revenue from District Messenger department or other Messenger service.

V. REAL ESTATE REVENUE. All revenue from Real Estate owned by the Company, including computed rent for the portions of such real estate occupied for the business of the Company

VI. DIVIDENDS AND INTEREST.

VII. MISCELLANEOUS. Profit on Sales or Job Work, and such other items of revenue, of small amount, as cannot properly be credited to one of the above classes of revenue.

THE EXPENSE ACCOUNTS.

This classification is designed to avoid, so far as it can reasonably be done, the apportionment of any single item of salary, wages, or expenses among two or more classes of expense ; and to provide for charging to construction and other property accounts, only such items as can be distinctly shown to represent expenditures for extension of the property.

I. GENERAL EXPENSE. *First,*— **Salaries and Wages.** This account should include the salaries of the President, Vice-President, General Manager, and their office force; Treasurer and office force; Secretary, Auditor, and their office force; Attorney regularly employed; Engineer and Electrician regularly employed; Division Superintendents and their clerks.

Second,— **Rent, Light, and Heat.** The Rent, Light, Heat, and Care of the offices occupied by the above named officers and employees.

Third,— **Travelling.** Travelling expenses of these officers and employees while engaged upon the general business of the Company.

Fourth,— **Postage, Printing, and Stationery.** Cost of books, blanks, printing, stationery and postage for the use of all departments of the Company.

Fifth,— **Taxes.** All Taxes except those on Real Estate.

Sixth,— **Legal Expenses.** Charges of Attorneys employed for special work, and compensation paid upon claims for personal injury, either upon judgments or by compromise.

Seventh,— **Incidental.** Items of small amount pertaining to the general offices, which cannot otherwise be properly classified. Under this head may be classed premiums upon officers' bonds.

II. OPERATING. *First,*— **Salaries and Wages** should include the salaries and wages of Exchange Managers, Operators, Collectors, Canvassers, Exchange Clerks, and others employed under direction of the Exchange Manager, except those expressly assigned to Construction work, and those named in III., V., VI., and VII. of this expense classification. If a separate Private Line force is employed, salaries and expenses of that force are to be charged to **Private Line Expense.**

Second,— **Rent, Light, and Heat.** The Rent, Light, Heat, and Care of space occupied by the officers and employees above named.

Third,— **Incidental.**

III. MAINTENANCE. *First,*— **Salaries and Wages.** The Salaries of the Superintendent of Construction and his assistants, and the Assistant Engineers, when employed upon other than new work; the Assistant Electricians; the Supply Agent and his assistants; and the pay of Foremen, Linemen, Inspectors, and Laborers engaged upon the maintenance and reconstruction of the lines and other operating property.

If a separate Private Line force is employed, the salaries and expenses of that force, as well as cost of Private Line Maintenance Material, should be charged to **Private Line Expense.**

Second,— **Rent, Light, and Heat.** The Rent, Light, Heat, and Care of space assigned to the use of the Maintenance force, or for storage of Maintenance material and tools.

Third,— **Material.** Material used upon Maintenance, including battery supplies, and the freight, teaming, and express upon the same.

Fourth,— **Travelling.** The Travelling expense of officers and employees, when engaged upon the maintenance and rebuilding of the lines or other operating property.

Fifth,— **Conduit, Pole, and Roof Rent.**

Sixth,— **Insurance.** Premiums paid for insurance upon all property, except real estate.

Seventh,— **Damage and Compensation.** Compensation for injury to property of others caused by its occupancy for the support of fixtures, or for other uses of the Company, or by accident due to the employees or property of the Company.

Eighth,— **Incidental.**

The experience of past years will enable the Directors of most of the Companies to estimate, with approximate accuracy, the amount which should be expended during the year which is to follow, in maintaining the construction in effective condition, including the cost of the property which should be replaced, in the process of improvement and reconstruction.

We recommend that, at the beginning of each financial year, an amount sufficient to cover all such expense be appropriated for Maintenance during the year, and that each month one twelfth of the amount be charged up in the expenses, under the head of **Maintenance,** for the purpose of equalizing the monthly expenses.

If the amount shown upon the Maintenance vouchers, together with cost of Material charged from the Supply Department account against Maintenance should not, at the close of any month, equal the proportionate part of the annual appropriation corresponding to the portion of the year which has elapsed, an entry should be made through the journal charging Maintenance, and crediting Reserve for Maintenance, with the unexpended balance of the amount chargeable to that time. Thus, if twelve thousand dollars be fixed as the yearly appropriation for Maintenance for the year beginning January 1st, and at the end of June five thousand dollars has been expended for that account, six thousand dollars would stand charged up as Maintenance Expense, one thousand standing to the credit of Maintenance Reserve.

For the same purpose of equalizing monthly expenses, we recommend that State Taxes be apportioned in the same way equally to the several months, and the difference between the amount apportioned and paid, at the close of any month, be carried in reserve, the necessary adjustment to be made when the accounts are closed at the end of the year.

Interest upon the indebtedness of the Company should be charged up in the **Interest** expense account, as it accrues, and the balance charged up, but not payable, at the close of any month, carried in Reserve.

IV. Rental and Royalty. *First,*— **Instrument Rental, American Bell Telephone Co., Exchange.** Amount of Rental on Exchange Instruments, after credits made on account of Rental Concessions.

Second,— **Instrument Rental, A. B. T. Co., Private Line.** This should include the Rental on Private Line, Club Line, and Speaking Tube instruments.

Third,— **Proportion to A. B. T. Co. of Extra-territorial Receipts.**

Fourth,— **Proportion to A. B. T. Co. of Telegraph Commissions.**

Fifth,— **Switch-Board Royalty.**

V. Private Line Expense. Salaries, Wages, and incidental expenses of officers and others employed in the care of Private Lines, or the conduct of the Private Line branch of the business, and cost of material used in maintenance of those lines.

VI. Messenger Expense. Expenses of District Messenger Department, or other messenger service.

VII. Real Estate Expense. All expense for care of Real Estate, Repairs, Insurance premiums and Taxes thereon.

VIII. Interest. Interest on Bonded Debt, Real Estate Mortgage Notes, or other indebtedness.

IX. Miscellaneous Expense. Other items of expense of small amount, which cannot readily be charged in any of the above classes.

We advise that Rebates of uncollectible accounts be charged up through the Journal against **General Incidental** expense; and that Rebates allowed for any other reason be, as a convenient disposition of the same, charged up as **Maintenance Incidental** expense.

In addition to the Construction Record Book, to which we have referred, a Subscribers' Ledger, Expenditure Distribution Book, and several other auxiliary books, can be used to advantage and with a saving of much unnecessary work upon the Journal and Ledger.

We are having a supply of the Expenditure Distribution books made, which will provide for the classification of charges which we have suggested. On January 15 we expect to forward you one of these books, and shall esteem it a favor if you will put it in use.

It is a recognized fact that the conditions which obtain in the large cities are such as to render the cost of operating the telephone exchange service, in those places, materially larger than the cost of giving the same class of service in the smaller places.

In undertaking, therefore, to make an analysis of the average earnings and expenses by stations, and to ascertain the returns upon the Company's investment at different points, the importance of sub-dividing the accounts, so as to show the results of the business in the exchanges severally, distributed under the various headings, is obvious.

With the aid of proper returns and vouchers from the exchange managers, the accounts may be made to show these results, without any considerable addition to the work of the accounting department.

To make such statements complete, it is necessary to apportion the General Expenses, and some other items which cannot be localized, upon an arbitrary basis. We regard it as the correct practice to apportion these expenses upon the basis of Gross Telephone Earnings of the respective exchanges, and we recommend that this practice be adopted.

We shall esteem it a favor if you will make such changes in your system of accounts for the present year, as will bring them into conformity with the plan which we have outlined herein.

If there are any features of the plan which have not been clearly presented, please advise us at your early convenience, and we shall be glad to furnish the desired explanation.

Yours very respectfully,

Thomas Sherwin

Auditor.

APPENDIX F

FORM FOR CONDENSED TRIAL BALANCE AND STATEMENT OF BUSINESS—SUBSTANTIALLY AS USED FROM ABOUT 1891 to 1908.

Form 305F 4m 5-7-'06 ______________ *Company.*

Condensed Trial Balance, ______________, 190 .

	DR.	CR.
CAPITAL STOCK,	$	$
SURPLUS,		
BONDED DEBT,		
REAL ESTATE MORTGAGE NOTES,		
RESERVE,—		
For Maintenance,		
For Unearned Rentals,		
For Outstanding Toll Tickets,		
For Discount on Toll Tickets,		
For Other Line Service,		
For Insurance,		
For Directory,		
For Taxes,		
For Accrued Interest,		
For Uncollectible Accounts,		
BILLS AND ACCOUNTS PAYABLE,		
CONTRACTS AND LICENSES,		
CONSTRUCTION, JANUARY 1, 190 .		
Construction—Exchange—Pole Lines,		
" " Right of Way,		
" " Aerial Cable,		
" " Aerial Wire,		
" " Underground Conduit,		
" " Underground Cable,		
" " Submarine Cable,		
" Equipment—Central Office,		
" " Subscribers' Station,		
" Toll —Pole Lines,		
" " Right of Way,		
" " Aerial Wire,		
" " Aerial Cable,		
" " Underground Conduit,		
" " Underground Cable,		
" " Submarine Cable,		
" Sub-Licensee,		
OFFICE FURNITURE AND FIXTURES.		
SUPPLY DEPARTMENT,		
TOOLS AND TEAMS,		
REPAIR SHOP,		
REAL ESTATE,		
STOCKS AND BONDS,		
BILLS AND ACCOUNTS RECEIVABLE,		
CASH,		
REVENUE,		
Exchange Service,		
Toll Service,		
Private Line Service,		
Sub-Licensee,		
Messenger,		
Real Estate Revenue,		
Dividends and Interest,		
Miscellaneous,		
EXPENSES,		
General,		
Operating,		
Maintenance,—Current Repair,		
" —Reconstruction,		
Instrument Rental,		
Private Line Expense,		
Sub-Licensee Expense,		
Messenger Expense,		
Real Estate Expense,		
Interest,		
Miscellaneous,		
DIVIDEND ACCOUNT,		

CONDENSED INCOME ACCOUNT.

EXPENSES.		REVENUE.	
GENERAL,	$	EXCHANGE SERVICE,	$
OPERATING,		TOLL SERVICE,	
MAINTENANCE.		PRIVATE LINE,	
INSTRUMENT RENTAL,		SUB-LICENSEE,	
PRIVATE LINE,			
SUB-LICENSEE,			
BALANCE,			
MESSENGER,		MESSENGER,	
REAL ESTATE,		REAL ESTATE,	
INTEREST,		DIVIDENDS AND INTEREST,	
MISCELLANEOUS,		MISCELLANEOUS,	
BALANCE,			
TOTAL EXPENSES,		TOTAL REVENUE,	
REVENUE BALANCE,			

ASSETS.		LIABILITIES.	
CONTRACTS AND LICENSES,	$	CAPITAL STOCK,	$
CONSTRUCTION,		SURPLUS,	
OFFICE FURNITURE AND FIXTURES,		DEBT,	
SUPPLY DEPARTMENT,		RESERVE,	
TOOLS AND TEAMS,			
REPAIR SHOP,			
REAL ESTATE,			
STOCKS AND BONDS,			
BILLS AND ACCOUNTS RECEIVABLE.			
CASH.		REVENUE BALANCE,	

______________ *Company.* APPENDIX F

General Statement of Business for the Month of ______________, 190 .

No.		Current Repair.	Reconstruction.		Average per Station, including Subscribers', Toll and Pay Stations.
1.	Number of Exchanges,				
2.	Number of City Branches,				
3.	Number of Exchange Stations (Subscribers', Toll and Pay) added during the Month,				
4.	" " " " " " " " discontinued during the Month,				
5.	Net Gain of " " " " " " during the Month,				
6.	Number of " " " " " " at close of Month (not including number reported below, line 12),				
7.	Number of Public Toll Stations included in the above,				
8.	Number of Exchange Stations connected by Metallic Circuit,				
9.	Number of Private Line and Speaking Tube Stations,				
10.	Miles of Toll Pole Lines,				
11.	" " Toll Wire,				
12.	Number of Stations under Toll Line and Exchange Sub-License Contracts,				
13.	Number of places in which Switchboards are operated under Exchange Sub-License Contracts,				
14.	Amount added to Construction during the Month—For Exchange—Pole Lines,			$	
15.	" " Right of Way				
16.	" " Aerial Cable,				
17.	" " " Wire,				
18.	" " Underground Conduit,				
19.	" " " Cable,				
20.	" " Submarine Cable,				
21.	" Equipment—Central Office,				
22.	" " Subscribers' Station,				
23.	" Toll Pole Lines,				
24.	" " Right of Way,				
25.	" " Aerial Wire,				
26.	" " " Cable,				
27.	" " Underground Conduit,				
28.	" " " Cable,				
29.	" " Submarine Cable,				
30.	" Sub-Licensee,				
31.	Total added to Construction during the Month,				
32.	Amount added to Real Estate account during the Month,				
33.	Amount added to Stocks and Bonds account during the Month,				
34.	Increase of Capital Stock, if any, during the Month,				
35.	Capital Stock issued at close of the Month,				
36.	Dividend declared during the Month,—Amount,				
37.	" " " " " When payable,				
38.	EARNINGS from Exchange Stations, —Exchange Service,			$	$
39.	Toll Service,				
40.	TOTAL,				
41.					
42.	EXPENSES:—General,—Salaries and Wages,				
43.	Rent, Light and Heat,				
44.	Travelling,				
45.	Postage, Printing and Stationery,				
46.	Directory,				
47.	Taxes,				
48.	Legal,				
49.					
50.	Incidental,				
51.	Total General Expense,				
52.	Operating,—Salaries and Wages,				
53.	Rent, Light and Heat,				
54.	Advertising and Canvassing,				
55.	Incidental,				
56.	Total Operating,				
57.		Current Repair.	Reconstruction.		
58.	Maintenance,—Salaries and Wages,	$	$		
59.	Rent, Light and Heat,				
60.	Material,				
61.	Travelling,				
62.	Conduit, Pole and Roof Rent,				
63.	Insurance,				
64.	Damage and Compensation,				
65.	Incidental,				
66.					
67.	Maintenance—Reserve,				
68.	Total Maintenance,				
69.	Instrument Rental,—Exchange and Toll,				
70.					
71.					
72.	Total Inst. Rented (not including Private Line and Sub-Licensee),				
73.	Total of foregoing EXPENSES,				
74.	Balance of foregoing EARNINGS and EXPENSES,				
75.					
76.	Earnings as shown on line 40,			$	
77.	Private Line Revenue,				
78.	Sub-Licensee Revenue,				
79.	Messenger Revenue,				
80.	Real Estate Revenue,				
81.	Dividends and Interest,				
82.					
83.					
84.	Miscellaneous Revenue,				
85.	GROSS REVENUE,				
86.	Expenses as shown on line 73,				
87.	Private Line,—Instrument Rental,				
88.	" " Other Expenses,				
89.	Sub-Licensee,—Instrument Rental,				
90.	" " Other Expenses,				
91.	Messenger Expense,				
92.	Real Estate Expense,				
93.	Interest,				
94.					
95.					
96.	Miscellaneous Expense,				
97.	GROSS EXPENSES,				
98.	BALANCE OF REVENUE for the Month.				
99.	Increase of Gross Revenue over that for preceding Month (if Decrease in Red).				
100.	" " " Expenses " " " " " " " " "				
101.	" " Net Revenue " " " " " " " " "				
102.	Per cent. of Gross Telephone Expense (lines 73, 87 to 90 inc.) to Gross Telephone Revenue (lines 40, 77 and 78).				
103.	Per cent. of Net Revenue to Capital Stock,				
104.	Number of Instruments (Telephones and Transmitters) in use,				
105.	Number of Instruments " " " in stock,				
106.	Total Instruments " " "				