



# The Pacific Electric MAGAZINE



ISSUED MONTHLY BY THE EMPLOYEES OF THE PACIFIC ELECTRIC RAILWAY

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No. 12

## FROM THE RAIN-DROP TO THE BONDED RAIL

**T**HE Magazine this month is devoted to the Electrical Department with description of various elements entering into its composition and our little story portrays "Power" and its utilization from the rain drop and the snow flake in the High Sierras to the bonded rail conducting the negative current back to the sub-station.

If a person 100 years ago had predicted or proposed the conversion of rain drops or snow flakes into power transmitted over a small wire sufficient to move millions of people in conveyances to and fro throughout the country, that person would have been immediately confined in a strong walled asylum as being demented. Yet today, people of scientific minds, predicting wonders to come within a few years are greeted rather frequently by the wagging of heads and a smirk that indicates incredulity.

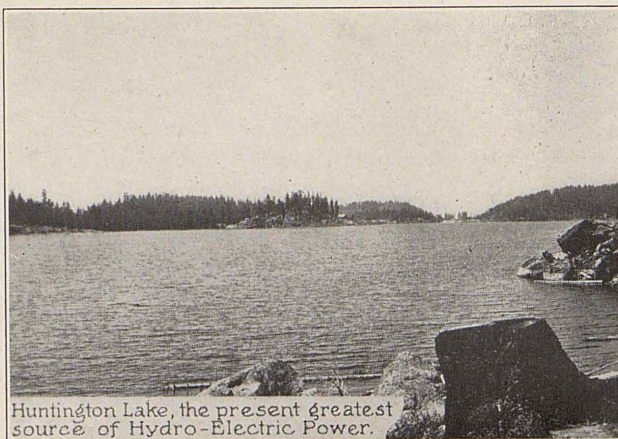
The production of hydro-electric energy is probably greater in California than in any other state in the Union, and on the Pacific Coast more than all the other states combined, and nowhere has greater progress been made in efficiency of production, transmission, distribution and utilization than here.

The articles that follow in this number recite in detail the various phases of electrical power and its uses, together with methods and mechanism, and will undoubtedly be of historical value, as well as of interest to our employes in every department.





Power Plant No. 1, Huntington Lake, the development point of the 150,000 volt current.



Huntington Lake, the present greatest source of Hydro-Electric Power.

## ELECTRICITY

THE PROPELLING FORCE OF THIS GREAT RAILWAY  
DESCRIPTION BY THE ELECTRICAL DEPARTMENT STAFF

### IN RETROSPECT S. H. Anderson

With the completion and placing in operation of the electric line connecting Los Angeles and Pasadena by the Pasadena and Los Angeles Electric Railway, in 1894, marked the beginning of the electric interurban in Southern California and the nucleus of what afterwards was to become the Pacific Electric Railway system. From this time on the expansion of the interurban electric railway in this locality made substantial headway, simultaneously with the development and progress being made throughout the United States during this period. It was obvious from the first that the electric motor car fulfilled the conditions of the traveling public better than any existing methods, and lines were rapidly built.

Closely following the inauguration of service on the Pasadena-Los Angeles line, the Los Angeles and Pacific Railroad Co. placed their line between Santa Monica and Los Angeles in operation. In 1902 the Pacific Electric Railway built their line between Los Angeles and Long Beach. And in rapid succession followed the construction of the other lines which has placed the Pacific Electric in first place in the interurban field.

In the early days, electric motors, generators, and in fact, all electrical

equipment and phenomenon were unknown quantities and in connection with the construction of the trolley, feeder and transmission lines, substations and power houses, pioneer development work had to be done. There were no precedents or experiences of others to guide the engineers, but how well they succeeded is evident.

The problem of furnishing an adequate supply of electrical energy was a serious one in connection with the earlier lines. When the first lines were constructed the substation obtaining its electrical energy from alternating current, high voltage transmission lines for conversion to direct current at trolley voltage, had not been developed.

Before the development of high voltage transmission of electrical energy from a central steam power or hydro-electric plant, the electrical energy for the operation of the system was generated with direct current generators, belt connected to high speed steam engines, the energy being generated at 500 volts, the operating voltage at the time.

With the introduction of high voltage alternating current transmission of electrical energy, came the substation with its motor generator sets and other apparatus for the transforming and conversion of the alternating current to direct current, and

the elimination of the necessity of having to maintain a number of small steam power plants to furnish the trolley current.

The Los Angeles-Long Beach line, placed in operation in 1902, was the first to be furnished its electrical energy from substations and marked the introduction of alternating current apparatus on the Pacific Electric lines.

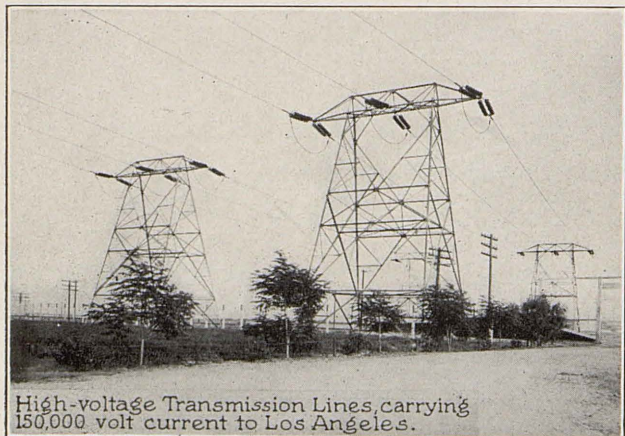
It is of interest to reflect that the early railway generators were rated at about 60 kilowatts and when 200 kilowatt generators were ordered for the system, it was thought that enough capacity was available for some time to come. Now, equipment of less than 1000 kilowatt rating is not considered and equipment of even higher rating is now required to take care of the increasing loads.

The following pages will tell the story of the Pacific Electric—"Electrically."

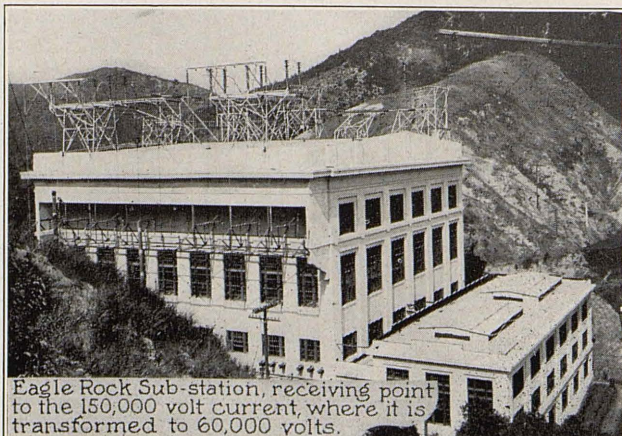
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### THE ELECTRICAL ENERGY SUPPLY

Probably few realize the important part that Southern California has played in electrical development, but it was here in 1893 that the Redlands Electric Light and Power Company placed in operation the first polyphase power transmission plant in the world, carrying 400 kilowatts, 7½ miles at 2500 volts. And it was here that in 1913

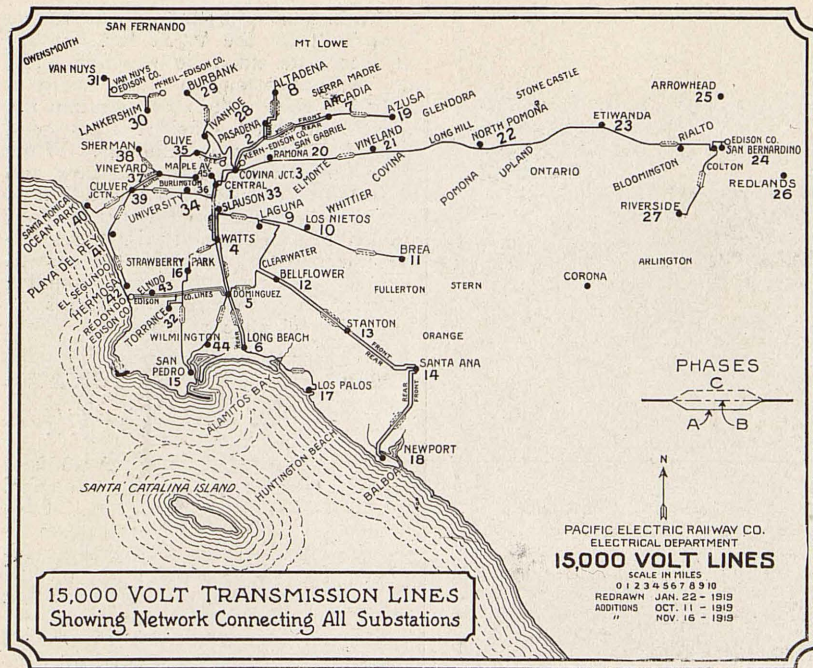


High-voltage Transmission Lines, carrying 150,000 volt current to Los Angeles.



Eagle Rock Sub-station, receiving point to the 150,000 volt current, where it is transformed to 60,000 volts.





the Southern California Edison Co. placed the world's highest voltage transmission line in operation, transmitting the electrical energy 241 miles at 150,000 volts.

The Pacific Electric Railway is furnished its electrical energy requirements by the Southern California Edison Co. from its several hydro-electric and steam power plants, the most important being the famous Big Creek and Kern River hydro-electric plants and the Long Beach and Redondo steam plants, respectively.

The system of the Southern California Edison Company has grown from small proportions to one of the largest power systems in the world, and is progressing rapidly with a program of development that calls for an ultimate installed capacity of 643,000 kilowatts. This figure may be more or less inconceivable to one not familiar with electrical quantities, but suffice to say for purposes of comparison that it would enable the Southern California Edison Co. to furnish electrical energy to twenty systems the size of the Pacific Electric Ry. Co. during the period of the railway's peak load.

The greater part of the electrical energy utilized on the lines of the Pacific Electric is generated by the hydro-electric plants, the steam plants under normal conditions being used as auxiliary reserve plants for furnishing energy during emergencies, peak periods, or periods of low water supply as during the present season.

Universal interest is attracted by the magnitude of the Big Creek development, present and proposed, which will materially aid in the future development of Southern California. At Big Creek the electrical energy is generated at 6600 volts, stepped up by transformers to 150,000 volts and transmitted 241 miles to the Edison Eagle Rock substation in Los Angeles, where the energy is stepped

down for distribution to the Edison substations.

The accompanying pictures show a view of Huntington Lake, Power House No. 1 at Big Creek, which generates the electrical energy under a static head of 2100 feet, a type of the towers used for supporting the 150,000 volt transmission lines, the Eagle Rock Substation, where the energy is received at 150,000 volts and transformed to 60,000 volts, and the Kern Substation where the energy is received at 60,000 volts and transformed to 15,000 volts. Kern substation is one of the main delivery points to this company. These views were very kindly furnished by the Southern California Edison Company.

PE

### DEVELOPMENT AND PROGRESS OF THE SUBSTATION

Julian Adams

The Pacific Electric Railway Company has a total of fifty-two substations varying in size from 100 kilowatts at 3200 kilowatts, of which forty-three are stationary manually operated stations and five are stationary automatic stations. The total in-

stalled substation capacity is 57,055 kilowatts.

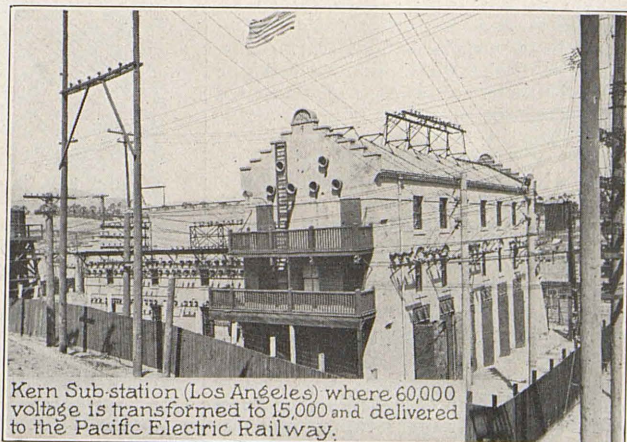
The general absorption which has taken place of many electric railway properties in Southern California by the Pacific Electric Railway has resulted in bringing into the system numerous different type of substations and substation equipment, so that while the advantage of standardizing on a uniform type of substation early became apparent and has been held continuously in mind, and while many important details of design have been standardized and rigidly adhered to, nevertheless, we have many diverse types of stations. Originally here, as on many other electric railroads, the electrical power was first furnished directly to the trolley wire from the power house and no substations were used. These were days of long feeders and low voltage and days when "weak power" was considered quite normal and proper.

With the increase in length of lines and increase of traffic, it became necessary to furnish direct current power to the trolley at more frequent intervals and for this purpose substations were used. These substations on the Pacific Electric Railway system are fed from 15,000 volt alternating current transmission lines, connecting first to the main power generating stations and now connecting to the Southern California Edison Company's system, since the power is now all purchased from them.

In the older substations transformers and motor generators are used, transformers for transforming 15,000 volt alternating current to 2200 volt alternating current and the motor generators for transforming 2200 volt alternating current power to 600 volt direct current power. The smallest motor generator in regular use on the system is of 100 kilowatt capacity and is located on the Arrowhead line where there is infrequent service with a single car. The largest motor generator sets on the system are all 1000 kilowatt capacity and the heavy passenger and freight trains on the main lines make it ordinarily inadvisable to install new units of less than 1000 kilowatt capacity.

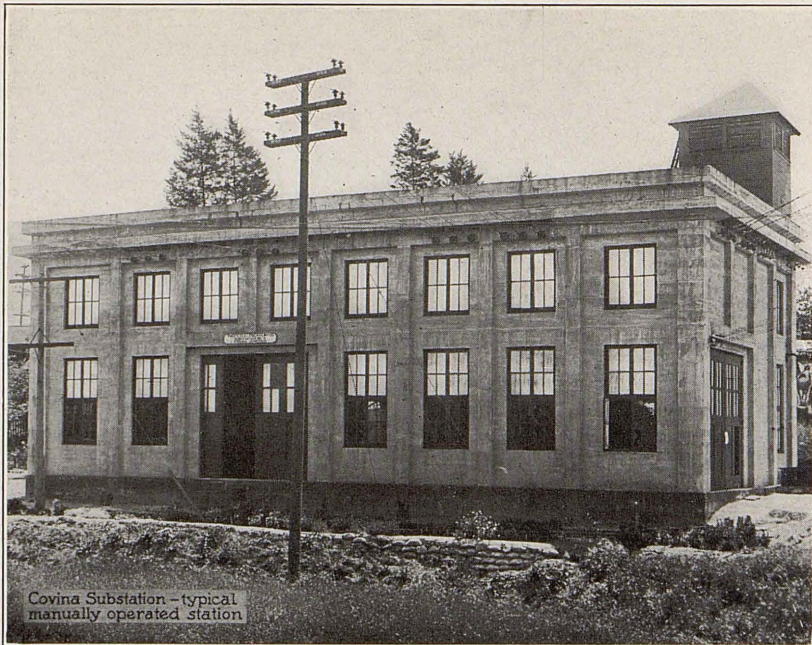
In 1913 motor generators became available and reliable for transforming 15,000 volt alternating current power directly to 600 volt D. C. power

From this initial point of power reception distribution begins to the 53 substations of the Pacific Electric where it is further converted to 1200 or 600 volts as required. The high type of provisions made for safety of all concerned in handling these high voltages may well be imagined.



Kern Substation (Los Angeles) where 60,000 voltage is transformed to 15,000 and delivered to the Pacific Electric Railway.





Covina Substation—typical manually operated station

er, thus eliminating the 15,000 volt to 2200 transformer in new substations at that time, and this made it possible to reduce substation losses as well as first cost. More recently, however, improvements in the A. C. voltage regulation on our system and improvements in the design of 50 cycle synchronous converters have made it feasible to use them in our newer substations, and these machines, together with their transformers, are considerably more efficient and less expensive than motor generators. The efficiency of a 1000 kilowatt 15,000 volt, 3-phase, 50 cycle, A. C. to 600 volt D. C. motor generator at full load is about 90 per cent and the combined efficiency of a synchronous converter and transformer capable of performing the same work is 94 per cent at full load. At  $\frac{1}{2}$  and full load these efficiencies are 85 per cent and 92 $\frac{1}{2}$  per cent, respectively. The power losses in the motor generator are therefore from 66 per cent to 100 per cent more than in the synchronous converter and transformer. The cost of the motor generator is also about 25 per cent higher than the cost of the synchronous converted with its transformer.

One of the early substation developments was a portable substation built in a standard box car. The portable substation which can be moved about over the system and connected up in a few hours' time is invaluable in taking care of unusual loads, such for instance as the New Year's load to Pasadena, and for helping out when stationary substation equipment is shut down for repairs. The Pacific Electric Railway Co. now has three 600 kilowatt and one 1000 kilowatt portable substations, all in cars similar in appearance to express cars. These portable substations are seldom idle.

On the 1200 volt line between Los Angeles and San Bernardino we have five 1000 kilowatt substations which de-

liver 1200 volts to the trolley. The use of 1200 volts on this line made it economical to space the substations substantially twice as far apart as would have been desirable with a 600 volt line. Distance between substations on this line average about 13 miles. So far as substations are concerned the use of 1200 volts on the trolley makes a considerable saving in power loss in the substation, due to uniform loads as well as saving in first cost and operating cost due to the reduced number of stations. All of the switches and circuit breakers in these stations, both alternating current and direct current, are pneumatically operated and most of them, together with the complete switchboard and control equipment, were designed and built by the P. E. Ry. Co. Their operation has been very satisfactory.

The last five substations which have been built by the P. E. Ry. Co. are all automatic substations which operate without attention other than a daily inspection, and they contain the latest and most efficient equipment, housed in fireproof buildings. While the automatic substation is new and is suitable for use only at a limited number of places on the system, our total installed capacity in the present five substations is 5500 kilowatts, which is greater than the installed capacity in automatic substations on any other electric railroad.

PE

## MAPLE AVENUE AUTOMATIC SUBSTATION

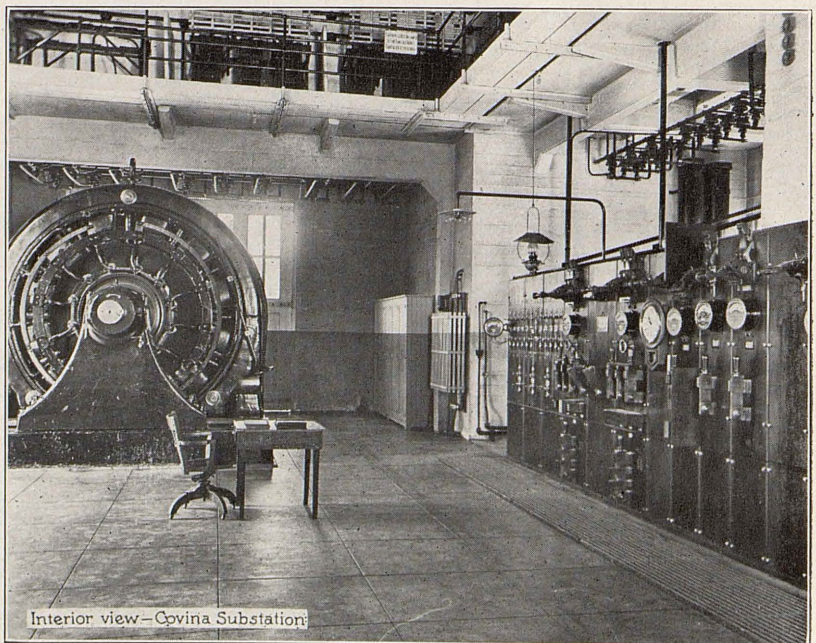
W. F. Smith

When Maple Avenue Automatic Substation was placed in operation on April 15, 1920, two very distinctive departures were made from the standard installations of lines and equipment which have been made on the P. E. system in past years, beside that of being automatically operated.

One, the operation of a 15,000 volt power line underground and the other, that of using a rotary converter of 1500 K. W. capacity, the largest machine ever installed here as a matter of K. W.'s but not in size and weight.

This rotary converter has a normal rating of 2500 amperes D. C. with a two hour rating of 3750 amperes, and will readily take swings of 5000 to 6000 amperes. It operates at a speed of 600 R. P. M. and its total weight is only 33,000 pounds, or about 22 pounds per K. W. capacity. The 1000 K. W. motor generator sets at Covina Junction weigh 168,000 pounds, or about 168 pounds per K. W. capacity; a very noticeable saving in use of materials in last 12 years in machine design.

It is a six-phase converter of 10 poles, having six collector rings on one end of armature and a very lib-



Interior view—Covina Substation





Slauson Automatic Substation

eral commutation on other end, with D. C. brush holders.

The rotary is supplied with A. C. power to collector rings at about 420 volts and generates D. C. power at 575 volts between positive and negative brushes, on commutator side. This can be varied by changing the A. C. voltage supplied to collector rings.

The 15,000 volt underground power line is approximately 5000 feet long and is run in conduit under Sixth street from Central Avenue Station. It is made up of three conductors, No. 2 stranded, paper insulated, lead sheath copper cable, and is continuous from pothead at Central Station to pothead at Maple Avenue Station, the line being switched only at Central Avenue Station. The line is connected to both front and rear busses at Central Avenue Station through oil circuit breakers and air break disconnecting switches. The oil circuit breakers are full automatic overload protected, and air operated remote control from main A. C. line benchboard at operator's booth.

Current transformers with a poly-phase indicating ammeter on switchboard completes equipment on this line at Central Avenue Station. Calibrated directly in load amperes the operator at Central Avenue station can at all times tell what Maple Avenue Station is doing, as well as having it directly under his control by opening or closing his A. C. line oil circuit breaker.

The substation building at Maple Avenue is located on west side of street between Sixth and Seventh Streets and is of the latest type of construction for automatic operation, being built of brick, concrete and steel with terra cotta plastered partitions. The doors and windows are all metal with wire glass and is considered as fire-proof as can be built.

Ventilation is provided by metal louvers on all sides down at sub-base

near ground, while three large rotating turret ventilators are placed in roof of building, giving a natural draft to carry generated heat out at roof ventilators.

The transformer is in a separate room from rest of equipment and is shut off by a large fire door. It is 1575 K. V. A. capacity, 3-phase to 6-phase oil insulated, self-cooled of circular coil core type design, and tank is of corrugated wrought iron with six large radiators attached.

It holds 1375 gallons of oil when filled and weighs 31,000 pounds, is 5½ feet wide by 8½ feet long and stands 12 feet high and is the largest transformer on the system.

The switchboard is made of slate and mounted on iron pipe framework. On the several panels are mounted the many relays and contactors which do the work of directing the operation of the station and taking care of its emergencies in case of trouble. The several meters and indicating instruments are also mounted on this same board.

The master operator of the station is the drum controller which is located near the machine. It is operated by a small A. C. single phase motor which is controlled by a contactor on switchboard.

It is similar to the ordinary type K platform controller on street cars and carries a number of segments and contact fingers which control different circuits to automatic equipment. It is also directly connected to a 250 volt D. C. exciter which energizes shunt field of rotary to correct polarity.

Two other important features in connection with the automatic control is the A. C. motor driven brush raising device and the speed limit governor switch on shaft of rotary. These two devices work in unison with the drum control motor and their circuits are interlocked through

each other, it being necessary that the D. C. brushes be raised off of commutator before starting interpole rotaries from A. C. power, the brushes being lowered just before connecting machine to D. C. trolley.

The speed limit governor prevents the rotary from being closed on A. C. running voltage until it is up to synchronous speed as its contacts on underspeed are open and this stops drum control motor until proper speed is reached.

The interlock on brush raising and lowering device stops drum control motor until brushes are lowered to proper position before connecting to D. C. line when it starts up and continues to full operating position.

The load limiting resistors are made of common cast iron grids, built up in stacks, mounted in angle iron frames, and installed up high for better ventilation.

Under each stack of grids is its shunting contactor and over each stack is a thermostat for protecting grids from overheating.

Opening of thermostat contacts shuts station down. Contacts will close automatically when cooled off in about ten minutes and station will start up if D. C. voltage is low.

Thermostats are also placed in bearings of machine, which shut machine down if bearings get dangerously hot. These are different from grid thermostats in that they are only reset by hand and are not automatically reset.

The 420 volt A. C. starting and running contactors are mounted on slate panel switchboards with iron pipe framework, and located in separate room with power transformer.

They are air brake switches and are electrically and mechanically interlocked on each to prevent accidental closing of both at the same time.

The 15,000 volt underground power line enters a separate booth where it is connected through air brake line disconnecting switches and A. C. motor operated oil switch to power transformer.

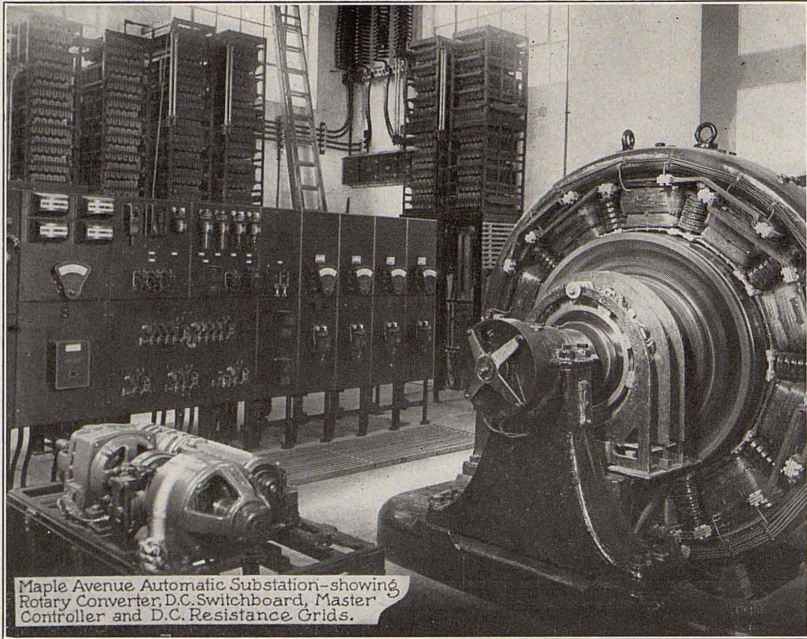
In a small gallery over the oil switch booth is located the 15,000 volt 10 K. W. transformer on incoming line. This furnishes A. C. power at 220 volts for control bus and A. C. station lights.

Also the 15,000 volt potential and current transformers for the meters and instruments are located in this gallery. Electrolytic lightning arresters are installed on each D. C. feeder where they enter building. At this point is also air brake feeder disconnecting switches and choke coils.

From the way the station handles the load on these feeders so centrally located, we have good reason for our satisfaction in the station filling a long felt want.

The entire work of installing, testing out and placing in service was done by the regular working forces of the Electrical Department of the P. E. Ry. Co.





Maple Avenue Automatic Substation—showing Rotary Converter, D.C. Switchboard, Master Controller and D.C. Resistance Grids.

## SUBSTATION OPERATORS

A. H. Ballard

Substation Operators on the P. E. system are largely home-made; that is, we take men without previous experience in this line and break them in, provided they have learned a few of the rudiments of electrical theory, and can pass a physical examination showing a good healthy condition, have good eyesight, hearing and are not color blind.

At first they are placed in a substation with an experienced operator where they can see all of the substation apparatus in actual operation. The routine is about as follows: Under normal conditions the experienced operator teaches them how to report on duty to Central Station by telephone and to sign on duty in the log book; how to make thorough inspection of the station and see that everything is being turned over to them in good condition when taking a shift; how to use the rule book; how to use the log book and what records to keep in it; how to O. K. by telephone each hour to Central Station operator; what reports to make to Central Station operator by telephone, and what to report to Chief Operator in writing; how to get each particular piece of apparatus out of service to clean up and how to clean it well and expeditiously; how to safeguard himself against danger, especially from electric shock and burns; how and when to start and stop the various apparatus; its behaviour under normal conditions and in time of stress; how to care for the buildings and yards; how to get lines out for line repair men in such a way as not to injure equipment or endanger lives of repair men; how to close in lines after repair work is complete; how to start and stop the generators; how to watch the load and anticipate loads and troubles, and especially what to do in case trouble of any nature does occur.

While the new man is getting the

above general information from actual experience, the experienced operator is teaching him the theory and reason for each operation so that if he takes an interest in the work, in a few days he is competent to take a shift in a small station. When the experienced man thinks he is competent to handle a shift, he sends the Chief Operator a written statement to that effect and the new man is then given a night shift in a small station. When by himself on a shift the traveling instructor spends a shift with him now and then to supplement any needed instructions and assist him in his study of the theory of the work and prepare him for a larger station. After a reasonable time he is given a written examination by the Chief Operator, and if he shows that he has the requisite knowledge for advanced

work, he is placed on the list for advancement. Each operator advances in the order of his seniority if he shows that he has the requisite knowledge for the position, unless by carelessness he acquires enough demerits to bar him temporarily from advancement.

For a man who takes an interest in the work it is light pleasant work and highly educational, and if he follows the set rules and methods it is no more dangerous than most other lines of work.

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## THE CENTRAL STATION OPERATOR

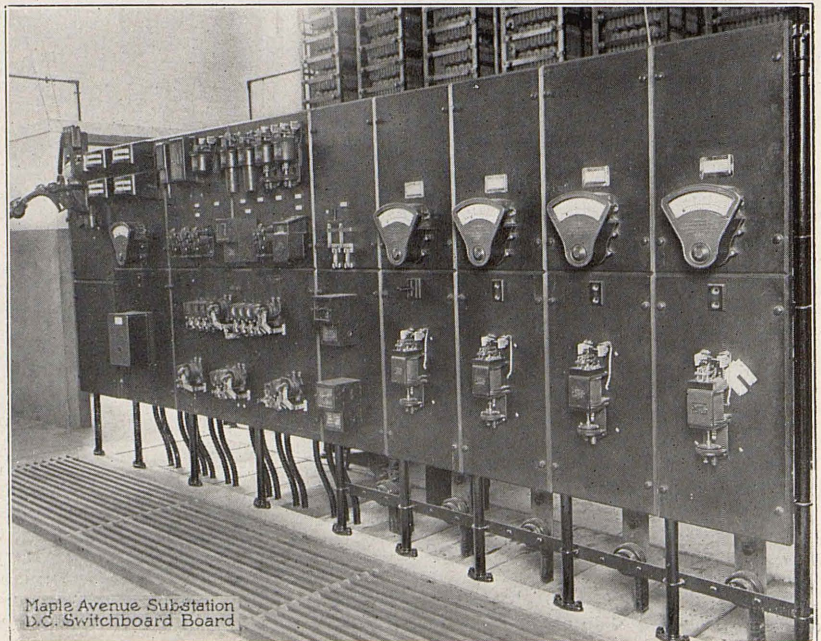
T. H. Ewers

On an electric system of the magnitude of the Pacific Electric, centralized control of all substations and transmission lines is essential. Continuity of service is of prime importance, and this must be accomplished with the greatest possible degree of safety, economy, and efficiency. These things cannot be secured, with any degree of certainty, without some directing head, who is thoroughly familiar with operating conditions and service requirements.

This is the function of the Central Station Operator or Electrical Load Dispatcher.

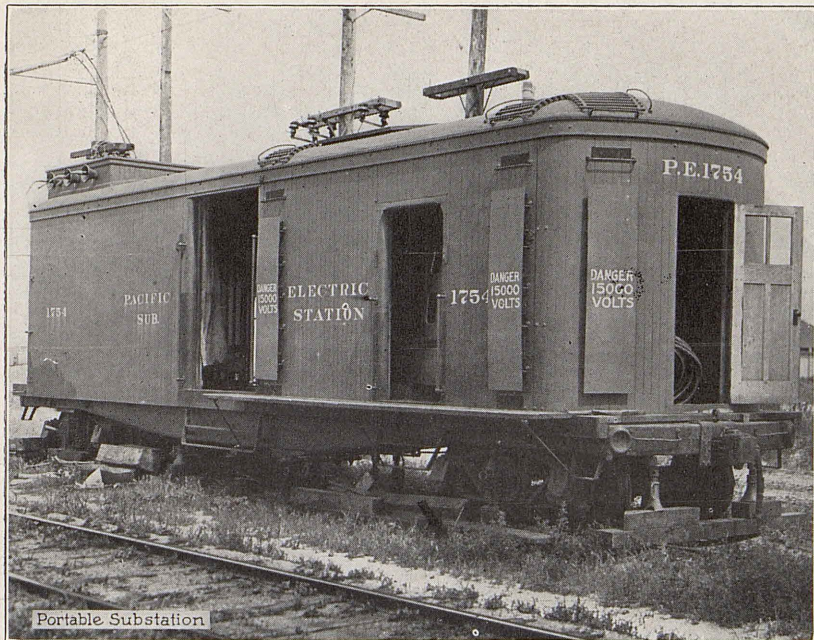
The duties of the Central operator are of such a complex nature that no attempt to enumerate them all will be made, and only a few of the more important will be dealt with here.

The Central Operator, under the direction of the Chief Operator, has direct supervision over the operation of all substations and transmission lines, and is held responsible for all power delays and the safe and efficient operation of the entire power system. His responsibilities are similar in many respects to those of the Train Dispatcher. There should be, and undoubtedly is, a firm bond of sympathy and understanding between them, as each is continually exerting his best efforts toward maintaining



Maple Avenue Substation D.C. Switchboard Board





Portable Substation

safe and uninterrupted service. Each is essential to the other's business, as without power the train dispatcher is helpless, and without trains the electrical dispatcher is useless.

The Central Operator has direct telephonic communication with each substation, thus enabling him to keep in close touch with them regarding load conditions, and all details pertaining to the safe and efficient operation of the station.

He must be thoroughly familiar with the equipment in each station, as, in case of trouble developing to any of the substation apparatus, he must be prepared to instruct the substation operator regarding emergency repairs, or cutting out the damaged apparatus and getting the station back in operation with the least possible delay, after which he must get a substation repair crew on the job, as the operators are usually not required to make any repairs, except of a minor nature, or in case of emergency.

The Central Operator has supervision over all high-tension line switching on the entire Pacific Electric System, consisting of about 400 miles of three-phase lines, or 1,200 miles of single line. No switching is done without his direction, except that carried out according to standardized instructions to restore service in case of emergency.

All electric power utilized in the movement of trains on the Pacific Electric System is purchased from the Southern California Edison Co., whose generating plants are located in various parts of Southern California.

Due to their numerous and widely separated generating plants, and to their vast range of distribution, the Edison Company is enabled to deliver power to the Pacific Electric Co. at eleven widely separated points. This is a great advantage to the Pacific Electric Co., as it not only reduces the transmission losses to a minimum, but makes it possible for

nearly all substations to operate, even though one, or more, sources of supply should be taken out of service for repairs, or accidentally cut off due to trouble on transmission lines, or in generating station.

Since the operating of all substations is entirely dependent on the A. C. supply, any interruption to this supply results in a complete shut-down to the substations.

The Southern and Western Divisions of the Pacific Electric transmission system are normally operated in parallel, so that any trouble that affects the lines of either of these divisions usually affects both.

The same conditions prevail on the Northern and Eastern Divisions which are normally operated in parallel.

If a failure of the A. C. supply is due to trouble on the Edison Company's transmission lines, or in their generating stations, it may affect only two divisions, or it may cause a complete shut-down of the entire Pacific Electric system until they can locate the trouble and clear it up.

While all of the high-tension lines on each division are normally operated in parallel, in case of failure of the A. C. supply, they are quickly separated, and in case any section shows trouble, it is quickly taken out of service and normal operation resumed on the rest of the lines.

General delays to service are usually of short duration, ranging from a few seconds to two or three minutes, but it should be understood that a delay of a couple of minutes to the A. C. means a much longer delay to the cars, as it takes from two to five minutes to get the machines all on again and the D. C. voltage up to normal.

Among other things, the Central Operator attends to an average of more than 100 telephone calls per hour during normal times, and there are times during trouble due to lightning storms etc. when the number of

calls may easily reach 200 calls in an hour. These calls range from a few seconds to several minutes duration, and are of every conceivable nature. Each substation operator must call in at least once each hour to "O. K." himself and station, and many of them call in several times in an hour. Then there are substation repair crews calling in from different points on the system, linemen calling for high-tension lines to be gotten out for repairs, which necessitates all the way from four to twelve separate switching orders, and this means double that many telephone conversations, as the substation operators must report back after executing each order; quite frequently trainmen call up to be connected with dispatcher, many calls from the train dispatchers, then there are numerous calls from various offices seeking information, and, etc., besides many calls on the outside phone.

From the foregoing, it is evident that the office of the Central Station Operator is a very busy place, and he has few idle moments.

PE

### THREE-WIRE SYSTEM OF POWER DISTRIBUTION TO TROLLEYS

E. W. Cook

The electrolysis problem in certain parts of the system became very acute about 1914 and some way had to be found to reduce the amount of stray electric current escaping from the track rails and being collected by the piping systems and other underground structures.

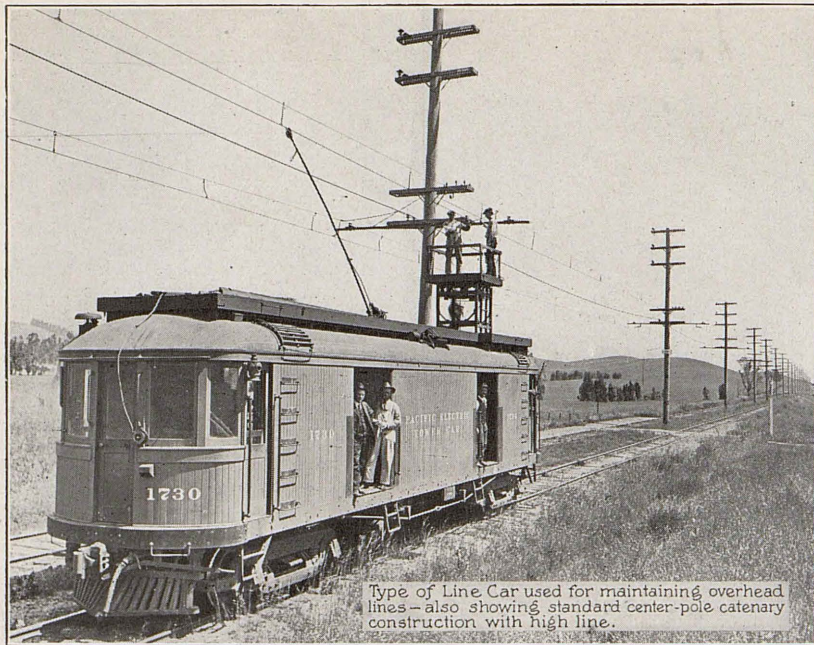
Although the 3-wire system of power distribution had been in use almost from the beginning of the electrical lighting industry no attempt had been made in this country to apply the principle to railway trolleys to reduce the stray current leakage from the rails.

Following the more or less experimental installation on Olive Substation on Sunset Blvd. in 1915 the area was extended to include the Sherman district and later Pasadena, Altadena, Ocean Park and Alhambra were changed over making a total of about 120 miles of single track equivalent now under 3-wire operation.

Previous to the installation of the 3-wire systems all trolleys were positive to the rails and the path of the current was from the machines in the substations to the trolley feeders, trolleys, car motors and then to the track rails which were assumed to carry it back to the substation machines.

All materials have the natural characteristic of opposing the passage of electricity along or through them and this opposition to the flow of electricity, or resistance, of the track rails is sufficient to cause a considerable part of the current to leave them at points distant from the power houses or substations and find its way through the earth and piping systems to points near the substations where it is collected by the rails or other metallic structures directly connected to the machines.





Type of Line Car used for maintaining overhead lines—also showing standard center-pole catenary construction with high line.

This stray current has been held responsible for causing considerable damage to the piping systems at all places where it is forced to flow from them to the earth.

This action of an electrical current is made use of in electroplating and other electrochemical works and need not be further explained here.

It is apparent that any method for reducing the amount of stray current flowing in the earth must either substitute a better path for its return to the substation or so change the entire trolley feeding system so that the rails will not have to carry the entire current over any great distance.

Under the 3-wire plan the trolley feeding system is changed by making a part of the trolley positive to the rails and about an equal amount negative to the rails. Considering the two sections of trolley as separate individual feeding systems; the current goes out or away from the substations on the positive feeders and trolleys and returns by the rails to the substations while the current to the negative trolley flows in the opposite direction or away from the substation in the rails and returns by the negative trolley and feeders.

What actually takes place, however, is that the current goes out over the positive feeders to a car on the positive trolley, through its motors to the rails, along the rails to a car on the negative trolley, up through its motors to the negative trolley then through the negative feeders to the substation.

This reduces the total amount of current flow in the rails to such an extent that the amount flowing from them to the earth is too small to cause any appreciable damage to the piping systems. Like many other beautifully simple schemes for getting around a very obstinate difficulty the 3-wire system has its operating difficulties.

The substation machinery must be

divided into positive and negative sets and run almost as if they were two separate substations; keeping at least two sets running although one might be sufficient to carry all the load.

This interferes with the general maintenance of the machines due to the almost constant use of them and also adds to the power lost at the substations.

There are other minor disadvantages incident to the operation of a 3-wire substation due to the greater complication of the machinery and wiring.

There must be a complete positive and negative set of feeders which in some cases has necessitated the installation of additional copper but in most instances it was found that the existing feeders could be rearranged and worked at about as good efficiency as under the normal all positive arrangement. Since the positive feeders are about 600 volts positive to the rails while the negative feeders are about the same amount negative to the rails, there is about 1200 volts difference of potential between them.

This increases the hazard of working with or near them but it has not yet been the cause of any accidents and should not be because the feeders, although not actually belonging in that classification, are treated as high voltage cables.

The change from positive to negative trolley, or vice-versa, has absolutely no effect on the car motors and if it could be made without having to throw off the power no one would notice the change.

The "dead" short length of trolley between the positive and negative sections is necessary to prevent short-circuits between them.

In a few cases cars have been run under these dead sections with both trolley poles up and the resulting pyrotechnics, in one case at least,

were sufficient to hasten the departure of the car crew.

In all other cases the trouble has been cleared by the automatic opening of the substation circuit breakers and the car crews may not even have realized that they had caused power trouble.

Arc headlights having but one positive or impregnated carbon do not operate satisfactorily when the normal direction of current flow through them is reversed as is the case when the car is on a negative section of trolley.

The storage batteries for operating the control equipment on some of the cars are charged by passing all or part of the current taken by the air compressor motor through them and as there is but one direction of current flow that will charge them they are discharged by the current taken from the negative trolley. The present amount of negative trolley is not proportionately great enough to seriously affect the charging of the batteries.

All of the above mentioned undesirable characteristics are fully compensated by the lower overall costs when comparison is made with any other equally effective means of reducing the electrolysis damage caused by stray railway currents on pipe systems.

— PE —

#### TYPES OF OVERHEAD CONSTRUCTION IN USE ON PACIFIC ELECTRIC RY. SYSTEM

R. M. Cobb

There are two distinct types of overhead construction in use on the lines of this company; namely: direct suspension and catenary suspension.

In direct suspension the trolley wire is suspended from a cross span or pipe arm bracket by means of an insulated hanger and a screw clip, which holds the wire rigidly in place, allowing very little flexibility. This type of construction is standard where conditions call for energy to be collected at a moderate speed and at 575 volts.

Poles are set at intervals of about 100 feet on tangent and at more frequent intervals on curves, the distance depending upon the degree of curvature. The common practice on interurban lines built with direct suspension is to use center poles on straight track and span poles around curves in order to provide better vision in operating trains and to prevent the wires from pulling poles out of line and thus impair the clearance.

Cross span wires and anchor guys are of 3-8 inch galvanized iron strand with a breaking weight of 4400 pounds. Insulators are placed in cross span wires at a distance of three feet on each side of trolley wires. These insulators have a general rating of 1500 volts so that ample protection is provided in case span falls from pole to street. In anchor and dead end guys another type of insulator is used which has a general rating of 3300 volts and a very high breaking strength.

Direct suspension of trolley wire has been in use many years and is



unquestionably the cheapest type of construction. It has performed a very useful service in keeping down the initial investments on the early trolley roads, but with the increasing requirements for energy to be collected at high speed, it has become necessary to develop a more flexible type of construction.

This demand has in part been answered by the development of catenary suspension, whereby great flexibility is secured as well as a flat, smooth alignment of the trolley wire.

When the trolley passes beneath the wire a wave is produced extending from 100 to 200 feet in either direction. The crest of this wave is just over the trolley wheel, and the height of the wave at any point depends, to a great extent, upon the elasticity of the wire at that point. It is plain that the impact of this wave against any weights or obstructions, such as clips, splices, frogs, crossings or circuit breakers, will produce "hard spots" and consequent crystallization proportional to their weight. Crystallization ultimately means a broken trolley wire and resultant delay to traffic.

In catenary construction the poles are spaced about 150 feet apart with either cross span wires or angle iron brackets to support the catenary messenger which runs directly over the trolley wire. Trolley hangers are spaced at intervals of 15 feet and hung to the supporting messenger above. This prevents trolley wire from falling to the ground or interfering with traffic. The dreaded "hard spots" are thus reduced in number to such an extent that the only places liable to crystallization are at breakers, frogs, and an occasional splice. If the wire does break, the close spacing of hangers prevents it from going to ground and annealing a large amount of wire. As the wire is carried at a constant level there is very small chance of trolley leaving the wire.

At present the greater part of our lines carrying 1200 volts are constructed on the catenary principle, the principle example of which is the San Bernardino line. The majority of the entire system is 575 volts, direct suspension type of construction, there being but 150 miles of line built with catenary suspension out of our total mileage of 1096 single track miles.

By referring to accompanying views you will notice that our pole lines not only carry trolley wires but also the high tension lines, feeder and telephone wires, and at many points signal wires.

PE

## MAINTAINING THE OVERHEAD LINES

W. H. Brown

The work of maintaining the overhead system of the Pacific Electric Railway involves the emergency care and general maintenance of approximately 80,000 poles, 400 miles of three phase transmission lines, 1096 miles of trolley wire and approximately the same length of feeder, including a vast amount of curve and other overhead special work.



Type of Auto Tower used for city service showing span type of catenary construction.

The system is divided into five divisions; i. e., the City, Northern, Southern, Eastern and Western, and each division maintains all of the overhead within its respective jurisdiction under the direct supervision of division foreman, with the necessary crew and tower equipment, this depending upon the mileage, class of service and other inherent conditions existing upon the division. The line and emergency headquarters are centrally located on each division so as to enable the emergency crews to reach any section of the division with the least possible delay. The division line crews are subject to emergency duty at all times and a crew is on duty on each division at all times.

Each division has its own special problems to contend with, along with their ordinary duties. As for example, the City Division, with its 128 miles of overhead has a vast amount of overhead switches, frogs and curve work to maintain, which requires constant attention. In addition it has the overhead on the viaduct to maintain which involves a problem in overhead switches for which no manufactured switch proved anywhere near satisfactory, on account of the conditions imposed upon it. The Electrical Department has designed a combination switch and crossing which has satisfactorily solved the dilemma. In numerous other locations on the City Division, as well as on the other divisions, it has been necessary to design and build the overhead special switches and other devices to meet the extreme requirements of the P. E. service.

The Southern and Western Divisions have obstacles to overcome on the Coast lines which the interior lines do not have to contend with; that is, corrosion of the trolley and strand wire, caused by the heavy salt water fogs, and the spray from the ocean. This settles at all points of contact, causing the wires to deteri-

orate very fast. These places are gone over as often as possible and painted with black metal elastic paint to preserve them.

The overhead on the Pacific Electric system must be built to meet extreme requirements; that is, all classes of service must be provided for, from city service to fast inter-urban and in a large number of instances all over sections of the same line.

In addition to this, the problem of accurately setting switches, curves, and the overhead work is further complicated, due to the large variety of equipment or classes of cars operated on the system.

The Northern division with headquarters at Pasadena, has 167 miles of overhead to maintain and includes all lines north from Covina Jct., including the Macy Yards. This division has an unusually large number of high speed curves to maintain.

The Eastern division, with headquarters at San Bernardino, includes all of the lines east of Covina Jct., totalling 209 miles. All of the 1200 volt lines of the system which extend from Covina Jct. to San Bernardino are on this division.

The Southern division, headquarters at Long Beach, includes all lines south and east of Slauson Jct., excepting the Whittier line, totalling approximately 253 miles. On the Southern division we have the heavy traffic of the San Pedro line and the Long Beach line to contend with, which necessitates a great portion of the overhead work to be maintained from ladders, in order to avoid delay of traffic.

The Western Division with headquarters at Sherman is the largest of all the divisions, amounting to 339 miles, and includes all of the West beach lines, Hollywood and the San Fernando lines.

On account of the fast and frequent service on a number of lines on all of the divisions, a large per-





Four-track construction—direct suspension.

centage of the maintenance work, on the system has to be accomplished at night after traffic has ceased.

Each division foreman is required to make an inspection of a number of his lines each month and to make a report concerning same. The object of our inspection is to locate sources of troubles or defects and remedy them before they find us. It is no uncommon thing to find the trolley wire partly broken due to crystallization at the point of support, which by giving it immediate attention avoids a break and the resultant delay to traffic. The inspection includes everything connected with the division line work, ranging from the transmission system, poles, feeders, trolleys, foreign wire crossings and clearances, and plays an important part in keeping the lines fit.

— PE —

### THE KILOWATT-HOUR L. H. Appel

The circuitous course of the electrical energy from the hydroelectric power plants in the mountains to the car, as has been described, involves many problems in connection with its transmission and distribution, and unceasing vigilance on account of the intricacies of the electrical system, in order that continuity of service may be provided.

The unit of electrical energy is the watt-hour and is the amount of energy developed by an ampere of current at a pressure of one volt for one hour but for practical purposes in expressing large amounts the kilowatt-hour (abbreviated kw-hr.) is used; the prefix "kilo" being the Greek word for one thousand. The kilowatt-hour is equivalent to the work done by 1000 watts expended continuously for one hour. Hence if 3 kilowatts are expended in an electrical circuit for 2 hours, then 6 kilowatt-hours of work have been done. A kilowatt-hour is equivalent to 1.3405 horsepower-hours or to reverse the expression, one horsepower

hour is equal to 0.746 kilowatt-hours. Probably a better appreciation of the significance of the above will be had when it is stated that the work that a kilowatt-hour will do is equivalent to the energy expended in raising a 10-ton weight approximately 130 feet. A kilowatt-hour of electrical energy will move a 20-ton flat car one mile.

It is evident that a very extensive system is required and has been provided in order to transmit and distribute the kilowatt-hour from the generating plant to the car, and in its complex journey, due to inherent line and machine losses, the overall efficiency of transmission, conversion, and distribution averages between 55 and 60 per cent. In other words, for every kilowatt-hour purchased at the delivery points, but from 0.55 to 0.60 kilowatt-hours are available for use at the car or other points of consumption. It is pertinent to point out that for every kilowatt-hour actually saved in the operation of the cars, the shops, or on

the line, that actually 1.7 to 1.8 kilowatt-hours are saved at the delivery or point of purchase. Further, any reduction in the electrical energy consumption has the beneficial effect of reducing the heavy current swings on the sub-station apparatus.

The electrical energy consumption of the Pacific Electric Railway averages approximately 450,000 kw.-hrs. per day, the load varying from 5,000 kw. hrs. during the early morning hours to a load of 34,000 kw.-hrs. during the peak period of the day. The average monthly power load is approximately 14,000,000 kw. hrs. In passing it may be stated that it would require 70,000 barrels of oil or 20,000 tons of coal to generate one month's supply of electrical energy.

The load curves graphically illustrate a typical weekday and Sunday load, and indicate to the degree, the extent that the Pacific Electric must stand ready to serve, as equipment must be provided to adequately take care of the maximum load demand rather than the minimum or even average load requirement.

As 96 per cent of the total kilowatt-hour purchased are utilized for the operation of the cars, it is of interest to know the value of the electrical energy used by a car. Using a 40 ton car as an example, the cost of moving the car 100 miles will cost \$6.00 for electrical energy, or figuring on a basis of 150 miles per day the operating cost for electrical energy will average easily \$270.00 per month.

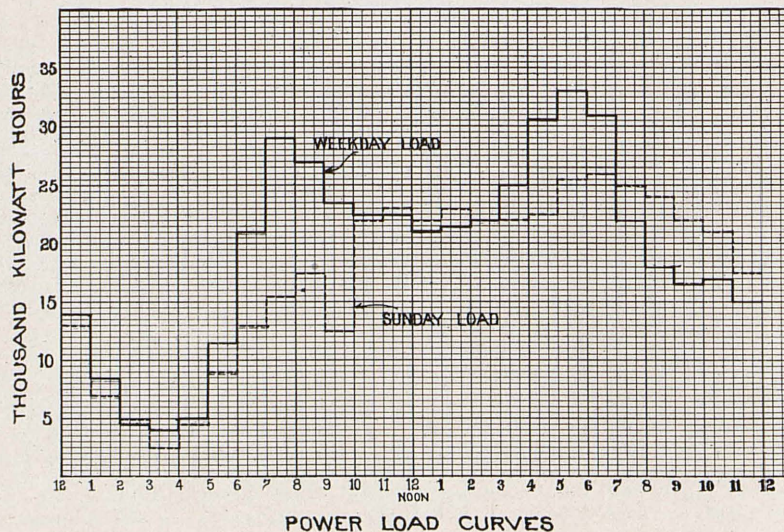
In conclusion, it is hoped that we have a fuller appreciation of the value of the kilowatt-hour, both as to the amount of energy that it represents and of the extensive system required to bring it to the point of application. Thus, with this in mind let us check any wasteful use of electrical energy and render all possible effort to effect a saving in power consumption.

— PE —

### MEASURING THE ELECTRICAL ENERGY USED TO OPERATE THE PACIFIC ELECTRIC SYSTEM

E. W. Cook

Has it ever occurred to you to in-





quire as to the methods taken to assure accuracy of the meters used for measuring the enormous input of electrical energy to the system. The yearly total of the power bill which greatly exceeds a million dollars, is in itself evidence that great care must be taken to prevent any errors in measuring the power.

At present all of this energy is purchased from the Southern California Edison Co. and measured by delivery meters at Dominguez, Kern Sub., L. A. No. 3, San Bernardino, Arrowhead, Redlands, Corona, Lankershim, Van Nuys, and Torrance.

The more important of these meters are checked twice a year, the others only once a year, by comparing them with standard test meters previously calibrated at the Edison Company's test department.

Spare sets of each size are kept in stock so that a meter can be checked and then the exchange made in a short time at any of the delivery points.

The method of testing varies somewhat with the type and size of the meters, but the general outline is about as follows:

The primary standards used are small dry cells about one-fourth the size of an ordinary ignition dry cell and the known resistances of a very accurate instrument called a direct current potentiometer that have been tested by the Bureau of Standards at Washington, D. C. It has not yet been found to be commercially practical to build and guarantee a primary standard that will indicate directly the watts or watthours so resort must be made to standards that measure the volts and amperes, which, when multiplied by each other give watts and if multiplied by time give watthours, 1,000 of which is a K. W. H., the common unit for all light and power bills. The constancy and accuracy of the standard cell and potentiometer are such that absolute confidence can be placed in results showing errors of one part in 10,000.

The potentiometer is used to compare the voltage of the standard cell with that of a small dry cell battery and thus knowing the exact voltage of the battery the error in the indication of a special laboratory direct current voltmeter is known.

This voltmeter can now be used to measure the volts which combined with amperes would give watts, but the amperes must also be measured by an accurate instrument and the potentiometer while more difficult to use has proved to be better than a standard laboratory direct current ammeter for this purpose.

The standard cell, potentiometer and voltmeter indicate on direct current only while the delivery meters operate only a alternating current, this necessitates the use of an instrument called a wattmeter that is equally accurate on direct or alternating current.

This wattmeter is calibrated by comparing its indication with the product of the volts as measured by

the voltmeter, and the amperes as measured by the potentiometer.

It is possible to check the delivery meters directly against the wattmeter using stop watches to measure time in order to get watthours, but it is more convenient and requires fewer observers to use two standard test watthour meters after they have been checked against the wattmeter, using the clock to measure the time.

These delivery meters are overhauled and put in the best possible condition each time before starting the check and unless something happens to them they maintain their calibration for a six months period within a fraction of one per cent.

On removal an "as found" check is made just for the satisfaction of knowing how much variation has taken place in the accuracy of the meters. A composite curve drawn from 215 of these "as found" tests shows that as an average the meters were slightly slow on light loads and very slightly fast on heavy load, the average for all of them at all loads favoring one company about as much as the other.

— PE —

## THE POWER AND DISPATCHING TELEPHONE SYSTEM

A. B. McLeod—C. C. Gonzalez

The Pacific Electric Railway Co. operates and maintains its own private power and dispatching telephone lines, connecting all points of the entire system.

The telephone system has reached a size of considerable proportions, totaling over 3300 miles of line to which are connected about 1000 telephones with their many appurtenances. In addition there are ten working switchboards, seven being located in the Chief Dispatcher's office in the P. E. Building, one at Central Station, one at Vineyard, and the last at San Bernardino. All of these switchboards were specially designed and constructed by the Electrical Department to meet the varied and rigid requirements of the system.

This company employs what is commonly known as the Magneto system, also known as the metallic or bridging system.

This system requires the use of two wires to a circuit and all bells, station taps, repeating coils and other equipment are placed in multiple or bridged across the lines.

There are various other telephone systems in use but the magneto system is used exclusively on the power and dispatching lines of this company, as it best meets the severe requirements imposed upon it. The system has flexibility and great reliability which is of great importance on lines the length of the Pacific Electric. In addition the telephone wires are carried on the poles carrying the high voltage transmission lines and therefore subject to their inductive influence. All of the lines are built and equipped according to standard approved practice.

All of the system telephone lines terminate in the telephone headquarters in the P. E. Bldg. Here is

maintained the main distributing frame, switching panels for switching lines from one dispatching switchboard to another, a power board, a set of No. B4 Edison storage cells, for furnishing energy to the dispatching system, and the motor generator set for charging the batteries. In addition there is a test telephone for locating minor troubles, a test desk equipped with voltmeter and an assembly of keys for testing for more difficult cases of trouble, as short circuits, open circuits, grounded circuits, foreign battery and other serious ailments of the telephone.

In connection with locating troubles it might be in order to say a few words regarding the troubles of the trouble man—which are many. He may patrol a line for its whole length, hunting a case of trouble, only to find at the end, where some station agent has hung a watch chain or bunch of keys across the telephone switch, shorting up the line and causing delays and waste of time.

One of our worst enemies is the rat. He likes to chew our cables and wires in buildings where we run in between partitions and in such cases, causes a great amount of trouble which is not easily fixed up, as it sometimes requires the pulling out of all wires and rerunning them in again.

Rainy weather is the time of year when the trouble shooter has the real snap—? Lines that work well in dry weather get very contrary on wet days and when the trouble man has to climb several trees on a rainy day to clear up a line he also gets contrary as well as damp.

Without doubt the telephone is probably one of the most abused, misused and taken for granted pieces of apparatus, considering the great part it plays in our daily life, that we have, and a little more consideration on the part of the average user would greatly add to the efficiency of this efficient piece of apparatus.

— PE —

### Unappreciated

"Some 'un sick at yo' house, Mis' Carter?" inquired Lila. "Ah see de doctah's kyar eroun' dar yestidy."

"It was for my brother, Lila."

"'Sho! What's he done got de matter of'm?"

"Nobody seems to know what the disease is. He can eat and sleep as well as ever; he stays out all day long on the veranda in the sun, and seems as well as any one; but he can't do any work at all."

"Law, Mis' Carter, dat ain't no disease what vou' brothe' got! Dat's a gif'!"—Blighty.

— PE —

### To a Street Car

Oh, how I feel profound delight,  
When on a dark and stormy night  
A car comes by and does invite  
Me into space all filled with light.

When I have trampled all the day,  
My feet so sore, I dead with heat,  
I see a car a block away,  
Then it with gladness do I greet.

—Eric Foster (aged 15).





PACIFIC ELECTRIC

## THROUGH THE CAR WINDOW

Little Observations by "The Man" Who Rides Often.

Say, Mr. Gateman! How did that fellow with a triplex ticket to Latin get through your gate for the Long Beach Limited? Ahem!

Notice to Clerks conversing with Conductors: Don't swear. It don't sound nice, and besides, the ladies that may be standing near the ticket window should be considered. I'll say so.

Don't get discouraged. You heard about Lucifer falling? Discouragement was the only tool that the devil threw away when he broke up house-keeping.

Don't get the idea that you can be overbearing to a passenger and get away with it because he lives on our lines and he (or his family) has to ride with us. Sure, you get that ten cents carfare out of him every day in the year, but who is it that gets the three hundred sixty-five cars of freight that he routes against us for no other reason than to get revenge for some needless incivility?

The Parcel-room Clerk who told the inquirer when the next train left for Santa Ana instead of curtly referring the person to the Information Desk did a good thing. If he was in possession of the correct information it was as easy for him to give it as to direct the person to the Desk; also, did it ever occur to you that the Information Desk is a busy job? It is.

April 2, 1920, was a Friday; it was Good Friday; we went up the incline to Mount Lowe with badge 526 and he was just as "good" as the day. Yes sir, Wilson, that was a good lecture you gave and the passengers could understand it because you did not reel it off like a patent medicine vendor but spoke as if you knew it and felt it and enjoyed it. Make 'em want to come again, boys!

Ever hear of "porcupines"? Try these; they are fine. One pound raw meat—any cheap cut—and grind it; mix with  $\frac{3}{4}$  cup raw rice, a little minced onion and a little grease of any edible kind and roll into small round sausages. Brown them all over in frying pan and then put into a deep pan with tomato sauce and

water and simmer 40 minutes. Oh, boy! Then watch them go "out of sight."

An old seafaring chap once remarked: "Say wot you like, a man's best friend is hisself. There ain't nobody else'll do as much for him, or let him off easier when he makes a mistake." Fellow-employees, each one of you should make yourself a part of the Pacific Electric; do you get the idea? Be your own friend; this organization is a permanent institution.

Say, you several-thousand members of the Pacific Electric family, how long are you going to stand for the reckless and law-breaking percentage of automobile drivers riding all over you. Did you know that if you would report violations of the law, giving time, date and State license number, drastic action would be taken on the second reporting of a number? Why don't you trainmen help put a stop to this nuisance? Why don't you other employes that are riding twice a day or oftener on our cars keep your eyes open for these violations and report them? We should be interested in getting our patrons safely to and from our cars, and in not having our equipment damaged by autos running into it. Everybody get busy, now, and let's see what we can do about it. Your own wife or child or mother may be the next one to be run down if you don't.

Scene I. Motorman tells a friend by his side on car that all cars are not equipped with brakes that will stop the car as quickly as some.

Scene II. Best mentally equipped trial lawyer in the city sits on front seat of the car and overhears the remark and makes note of it in a memorandum book.

Scene III. Reckless bonehead drives automobile right in front of this motorman's car and the automobile is unavoidably smashed because motorman has not time to stop his car.

Scene IV. Bright trial lawyer handles the case in the suit for damages that follows; he refers to his note book and gets the motorman's remark before the jury; makes the impression he desires and wins his case.

Scene V. Company pays a lot of money to the reckless automobile driver which it really needs to pay wages with.

What is it all about? First, it is unlawful to converse while operating a car. Second, it is unwise to make such remark even if it was a fact. It never happened? Oh, yes it did, the first part of it; we heard you say it, Mr. Motorman—only you have been lucky enough not to have the bonehead drive right into you, yet.

A small boy rushed into a drug store and excitedly asked for some liniment and cement. When asked why he desired both at once, he said nervously: "Pa hit ma with a cup."

## AGENT'S ASSOCIATION

Minutes of Agents' Association meeting held at Pacific Electric Club, Saturday, April 10th.

Meeting called to order by Chairman Mann at 8 p. m.

Roll Call and absentees noted.

Minutes of last meeting read and approved.

Mr. Roth gave a very fine talk and demonstration on mind development.

In regard to Agent Seniority, Mr. Day stated that this question had not been fully decided upon and would make a report on it later. In his remarks he stated that business had been very good during the past month. He asked, on account of shortage of equipment, that cars be unloaded just as promptly as possible. Also made a few remarks on the steam strike situation. Said that the Pacific Electric was now entering a campaign for new business; and asked that agents be more prompt with their tonnage reports, also asked that the agents telephone to the Chief Dispatcher, not later than Saturday night, the number of car-loads from their stations, this on account of special data to be compiled for statistical purposes. Mr. Day also explained to the agents the present embargos issued by the steam lines.

Mr. Davis gave a few minutes talk, in which he asked that the agents keep their stations clean and in good shape.

Committee appointed to plan trip of the Agents' Association to Big Bear Valley made the following report: Leave Los Angeles, by special train, at 3 p. m. Saturday, June 12th, arriving in San Bernardino about 5 p. m. and going direct to Pine Crest via mountain auto line; have dinner and spend the night at Pine Crest, leaving Sunday at 7 a. m. for the Pacific Electric Camp, where breakfast would be served; leaving at 7:30 via Little Bear for Big Bear, where they will have luncheon; leaving at 4:30 p. m., arriving in San Bernardino about 9 p. m. by special train and arriving in Los Angeles at 11 p. m. Matter turned back to committee to work out further plans along the lines of expense, etc., and get out circular letter to members of the Association, and make further report to next meeting.

Mr. E. T. Albert, Freight Claim Agent, spoke relative to the correct manner of handling seal records.

After remarks from the various agents the meeting adjourned.

H. L. LEGRAND,

Secretary.

PE

## OBITUARY

Mr. W. I. Miller, who has been employed with the company for several years as towerman at Slauson Tower, passed away at his home in Graham on Friday, April 9th, after an illness confining him to his home for many months. To his brave little wife and five children we all extend our sympathy.



# FREIGHT TERMINAL NOTES

G.W. ORR, ASSOCIATE EDITOR

General Foreman Frank L. Reynolds is taking a much needed rest and with his wife has gone for a short visit with the home folks back in Iowa. Mr. Reynolds has given our Company many years of faithful service and this vacation is the first in several years. We unite in wishing him unbroken pleasure and a safe return rested and refreshed.

During Mr. Reynolds' absence Assistant Foreman O. C. Black is acting in the capacity of General Foreman assisted by Night Foreman Thad. Phelps, the night forces being in charge of Mr. George J. Nutsford.

Trucker Jeff French had the misfortune to painfully injure both of his feet. At this writing he is able to be around again with the aid of a couple of wooden ponies.

Early in April former Check Clerk Warner B. Leavenworth transferred to the shop forces at Torrance. Here's luck to him in the new line.

Clerk Harold E. Fennimore was compelled to resign and return East the latter part of April on account of his sister's illness. Harold has been with us only a few months but his energetic application to his work together with his genial disposition have won for him many new friends.

Those sunny locks of David Cohan's that we raved about have faded from our vision. Much to our regret we learned that he had been ordered elsewhere by Uncle Sam on account of ill health contracted while in the army.

We were beginning to think nobody loved us enough to take the night yard clerk's job but Gordon Easterly came to our rescue and we hope he likes us well enough to stay awhile. Do I hear Supt. of Employment Scott say Amen?

George P. Finney has resigned as clerk at Butte St. Transfer and accepted a position with one of the other Lines. Besides being a very efficient clerk George's habit of cleaning up and improving his surroundings was much appreciated. He was succeeded by Thurston Appleby who has been with us a short time.

George Bent erstwhile Expense Clerk resigned May 1st to return East. Likewise Russell Allen of the Bill Desk. Men as well as merchandise are sure on the move.

W. J. Shipley, former stenographer, resigned the latter part of April to accept a position up north. The new man on the desk is Benj. Galewski. Note he wears an overseas button as do most of the newcomers these days.

Check Clerk Fred Peterkin is taking a leave of absence and starting on a long trip that will take him to England and perhaps the Mainland before his return. Well, he's got nothing on us, we're going to take the wife and kiddie to Hermosa Beach and back one of these days if we have any kind of luck.

Did you notice the string of men from this department in the line-up of the new ball team? We can hardly wait to see them in action. Makes us sort of hark back to the days when Mort Stuart was the star first sacker for the Cobblestone Cooties with the old squeeze-ball here on the mound.

Came near getting pinched the other day for bustin' one of the new traffic rules; out in front of where they are building Pantages new Theater there was a big pile of sand in the street and right over it was one of the big red signs that says "Turn to Left Prohibited." Now honest, Antone, what would you do? Run over the sand pile I suppose.

Speaking of funny signs, a Main Street Second Hand store had this in the window, "Why go elsewhere to be cheated—see us first." Git up Dobbin!

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## GENERAL FREIGHT DEPARTMENT NOTES

George F. Squires, Associate Editor  
The Station Agent's Tariff File

Under the mandatory regulations promulgated by the Interstate Commerce Commission, and the Railroad Commission of the State of California, common carriers are required to print, keep open to public inspection and file with the respective Commissions, schedules showing all rates, fares and charges for transportation between points on its own route and points on the route of any other carrier by railroad or water, when a through route and joint rate has been established. If no joint rate is established, then the several carriers are required to publish separately established rates, fares and charges applying to the through transportation.

Station Agents are provided with facilities for keeping such files of schedules in ready reference order and common sense dictates the necessity of maintaining a systematic, orderly arrangement of filing rate schedules with a view that information contained therein may be readily accessible.

Probably one of the most widely discussed subjects in business today is the art of selling. Whether this is true or not, the fact remains that practically every human being is a seller of something. Efforts are now being made to develop definite methods to govern the problem of sales-

manship in action, yet strange as it may appear this oldest of all occupations continues to be practiced in conformity with the personal ideas of each individual salesman rather than an exact science with proved formulas.

The Commodity we have to sell is freight transportation. The primary essential in any individual fitting himself to perform the function of selling transportation is the acquirement of some education concerning the charges assessed for the commodity to be sold. A comprehensive knowledge along this line is an asset hard to compete with. What the price lists are to a commercial concern, the tariffs and their application are to the railroad.

Aside from the obligations imposed by circular instructions, the obvious duties of station agents and forces is to acquire the faculty of being able to speedily and accurately locate the desired or requisite information contained in current schedules without unnecessary delay, to be able to lend assistance in an affable manner to all seekers for such information therefrom as well as to accord to inquirers opportunity to examine any of said schedules, all of which should be done with all promptness and courtesy possible consistent with proper performance of duties devolving upon agency forces.

Traveling Freight Agent or other representative of the General Freight Department will check each station's office file of tariffs and will be glad to assist and instruct agents and their employes in the proper method of filing and using publications authorized by this company.

Mr. Agent—your station file of tariffs complete and in proper order will be a credit to your station and a commendation to yourself.

It is with pleasure that announcement is made concerning the appointment of George H. Payne to position of Traveling Freight Agent with headquarters in the General Freight Department at Los Angeles. Mr. Payne's arduous activities during the past twenty-three years of association with the Pacific Electric family speaks for itself.

### Station Changes

Agency at Rialto was transferred April 20, 1920 from Relief Agent H. M. Wright to O. J. Hamble, who has received regular assignment at that point.

Van Nuys agency has been bid in by Mr. R. F. Johnson, previously located at Etiwanda.

### Industrial Changes

Special attention of Agents is directed to new industry Circular 230-B, issued May 1, 1920, containing a complete up to date list of industries and warehouses served by spur tracks and sidings on our line.

PE

You cannot turn a 'possum into a watch dog because he believes in a policy of going to sleep at a critical time. Careless men have a brain somewhat similar to a 'possum.—Exchange.



# PURCHASING AND STORES NOTES

Miss JOSEPHINE FLETCHER, & & &  
Miss ALICE SCHMIDT, ASSOCIATE EDITORS

## PURCHASING DEPT. "SCANDAL"

It isn't very kind of "Ye Editor" to threaten his Associates in order to get copy for the Magazine, but if it has the desired result, the end probably justifies the means. At any rate, he insists on columns and columns, not realizing that we are aware that the price of paper is almost prohibitive and should not be wasted. However, we are resigned to our fate and taking pencil and note book, insist on hearing all about the personal affairs of everybody connected with the Purchasing Department. The only way to do is to start at the top and go straight down the line; and it may be that shorthand notes are responsible for the answers to our questions—we do not vouch for the truth of the following:

"Mr. Ward have you any personal items of interest for the Magazine this month?"

"Yes—I think salmon eggs make much better bait and a nine-thread line is equal to eighteen pounds."

"Mr. Fenimore, what is your idea of a personal editorial?"

"It grows much better in sandy soil and needs plenty of water, but weeds are a great nuisance—they come up of a morning before I do."

"Mr. Howard, what do you know that would be of interest to readers of the Pacific Electric Magazine?"

"I can't find any cold rolled steel, wood screws or gopher traps in town. Mr. Froude wants some Divign Ladies Caps and some Heavy Ladies curling irons; Mr. Somers wants a carload of oil and sixteen bolts of ribbon and a flag."

"Mr. Maynard, what have you to offer for the Fuel Oil Department?"

"Fuel Oil is uninteresting and unromantic—I have just sold two hundred dozen pairs of hose for Mr. Somers and moved to Long Beach."

"Mr. Mather, what are the joys and sorrows of a Correspondence File?"

"It has neither—they have found out I'm Sibyl's brother so they ask me all the questions now."

"Mr. Swartz, how many 'Bills' have you checked this month?"

"I've only checked 'Bill' once—he was in my way on a peanut deal."

"Bill, what have you to say for yourself?"

"I've only had to borrow a dollar once this month and have eighty cents of it left."

"Mr. Conrad, can you say anything fit for publication?"

"!!!!!! ? ? ? ? bbrbrbrbrbr—that's what I think of the details of this office; I'll say more next month when I'm better acquainted."

"Miss Eginton, can you advise members of the new Hikers' Club the most interesting hikes to take?"

"Most any place is better than from Del Rey to Redondo."

"Miss Fox, you have been here long enough now to burst into print,

what is your idea of a perfect office?"

"Where they do not have so many affiliated lines that your brain gets cracked keeping track of them."

"Miss Fletcher, does your conscience ever hurt you?"

"I have no conscience—you can't have when you are an Associate Editor."

PE

## STORE FLASHLIGHTS

Have you ever notice how busy Stations 13 and 18 are all day ?

We have heard reports that Earl McCall, our Storekeeper at San Pedro, is staying home of nights lately. How come, Earl?

George Lucas, our Graham Storekeeper, is sadly bemoaning the fact that the only bars there are left are 'tamping' and "angle bars."

Seems as though Mr. Gill would join the band for he certainly is well supplied with "harps." Perhaps it's because they are not brass.

Francis Clark, although keeping many hammers in stock, is not what you would call a "knocker," but he says "augers" are awful "bores."

No wonder Mr. DeCourcy is right up to the minute on news, for he has plenty of "ears" (trolley ears). It must keep him busy running up to the second floor to get a necessary supply of "ear washers."

The small commotion we heard last week was caused by Roy Confer mistaking Lock for a piece of hardware. You should have seen Roy's "I" beam (eye beam) when Lock said he always thought Roy stocked heavy on tees (tease).

Mr. Minaryard would appreciate suggestions from anyone as how best to spend \$120,000.00. Ever since he invested so heavily in oil stock he has been trying to figure out how best to spend the fortune he is certain to accumulate.

The Store Department is urgently in need of empty cans. The delay to shipments of any liquids or grease to any point during the past month was due to the shortage of empty cans. A large quantity of switch light oil and other oils and paints are purchased each month in one and five-gallon containers. Despite every effort to prevent it, there continues a shortage of cans for shipments of such liquids as gasoline, coal oil, and car oil, which are purchased in large bulk quantities by this department. We would appreciate the cooperation of the other departments in our endeavor to overcome this scarcity of containers.

Tuesday, the 27th, Mr. Thorburn called a meeting of all storekeepers and section storekeepers at Torrance. The purpose of these periodical meetings is to discuss means by which difficulties which arise at the various points may be overcome in order to make the Store Department more efficient and of more service to the entire company.

Supply Car No. 1, in charge of Supply Car Storekeeper Gilks, devoted five days starting April 13th and completing on April 17th covering practically all of the 600-volt territory for deliveries and pick-up of Electrical and M-W Departments. This is a departure from previous months inasmuch as the system is covered in one stated period. We find that we are able to give better service and undoubtedly will continue this practice in the future.

Mr. Swartz, our Chief Clerk, created quite an excitement the other day by bringing around the list of annual vacations. It's funny how a little thing like a couple of weeks away from work will make such a difference in people. Miss Hess, to be sure she gets hers, is taking one week in May and the other week in October. Maybe she thinks the boss will forget about the first one by then and she will get two weeks more. Storekeeper Ward McCall is planning to go east on his vacation in June. We hope he has a most enjoyable trip for we feel sure he has earned it.

"In the Spring a young man's fancy Lightly turns to thoughts of love."

We all wondered when Miss Schmidt, our Associate Editor, decided to take her vacation in June, the month of Brides and Roses, and our suspicions were confirmed by her brother-in-law, Mr. Stock, who informed us of the announcement of her engagement to Mr. R. Springer of Redondo, April 22nd, 1920.

Miss Schmidt being a bright and efficient young lady takes advantage of every opportunity, and this being Leap Year she is making the most of it.

On learning of her engagement the employees decorated her desk, over which was placed two large hearts entwined with an arrow piercing the center, from which hung a large gold ring in which a flash-light globe had been inserted; on her desk two large bouquets of flowers and a single large heart with two Kewpies, representing the Bride and Bride-groom, stood facing her, while numerous hearts were placed in different parts of her desk to remind her of her "Vow."

We sure wish her "Bon Voyage," but hate to see her leave our midst for she not only has been efficient and faithful, but always had a smile and cheery word for everyone, and we hope and expect that her husband will always find her the same.

Miss Schmidt, being our Associate Editor, says she will censor this little notice, so am writing this to show her it can be done.



## STORE DEPARTMENT

Now that we are established in our new buildings at Torrance it seems entirely proper to mention our stores at outlying points and give a brief outline of the duties they perform.

The general stores at Torrance are, of course, the mainstay on which all the others lean, out the efficient functioning of the Torrance Store depends largely on the amount and manner of cooperation received from the outside.

The Macy Street branch is in charge of Mr. L. C. Bolen. Storekeeper Bolen maintains material and supplies for the car house and repair shop at Macy Street and Echandia Junction. He also ships supplies to the Mechanical Department at Pomona weekly and handles emergency orders from Watts, 6th and Los Angeles Sts., 8th and Tennessee Sts., and occasionally other points. His territory consists of parts of the Northern, Southern, and City Divisions. In the course of a month practically every type of equipment on the system comes in to Macy Street for inspection and repairs. This of course, necessitates a large and varied stock being carried at this point. Macy Street Store is open every day in the year and receives supplies from Torrance via Supply Car every day except Sundays. Emergency and rush orders are received via truck as occasion demands.

Mr. Bolen, however, manages to find odd moments to remodel and rearrange his stock and keep the buildings and platforms in a neat, tidy condition.

Mr. H. C. Humphrey, Storekeeper at Pasadena, maintains supplies for the Pasadena Car House. His territory consists of the Pasadena Short Line, Oak Knoll Line, Pasadena City Lines, and Mt. Loye. Mr. Humphrey, although seriously hampered for room, is making a decided improvement in the appearance and condition of his stock by rearranging and remodeling the interior fixtures.

Mr. C. Curle, Storekeeper at San Bernardino, maintains supplies for the car houses at San Bernardino, Riverside, and Redlands, also miscellaneous supplies for the M. of W. and Electrical Departments at these points. The San Bernardino store-room is one of the later ones built and Mr. Curle is endeavoring to keep it on a standard of neatness with that of other points.

Mr. F. W. Campbell, Storekeeper at Sherman, maintains supplies for the shops at Sherman including the Special Work Shop. He also ships supplies to the Mechanical Department at 4th and Hill Sts. and fills emergency orders from Ocean Park Car House. The Sherman Store buildings are among the older ones on the system, having been built for the old Los Angeles Pacific Ry. Co. Mr. Campbell is now busily engaged remodeling some of the material cases which promises a better appearing and more convenient store after he has finished.

The amterial and supplies at San Pedro are in charge of Mr. Earl McCall, Storekeeper. Mr. McCall also

handles orders from the Mechanical Department at Long Beach Car House and Morgan Ave. His territory takes in the San Pedro Lines, which include the special ship yard trains and special trains out of Torrance. Although he is kept very busy filling requisitions and looking up material for the Mechanical Department, and is also handicapped for room, Mr. McCall is constantly trying to improve the condition and appearance of his store and stock.

Mr. H. Smith, Storekeeper at Redondo, maintains material and supplies for the shops at that point. For the last several years practically all heavy freight car work has been done at Redondo. Mr. Smith's stock consists of material necessary to rebuild and repair all types of damaged freight equipment. Due to the possibility of this work being transferred to Torrance no new work has been done in the Redondo Store during the past year.

The Material Yard and Stores at Graham are in charge of Mr. Geo. Lucas, Storekeeper. His stock consists of poles, piling, track, signal, bridge and building materials. Mr. Lucas receives this line of material direct at Graham and ships to all points on the system via supply car and freight. Miscellaneous supplies are received from Torrance via supply car. Considerable trouble is experienced at times in getting sufficient cars to handle shipments. In most cases, however, cars are forwarded before serious delay has occurred. Graham yard is large and so is the material handled there. Nevertheless, it is usually found to be in a neat, orderly condition.

Mr. C. Jessup is in charge of the Stationery Department and Duplicating Bureau. Many forms which we formerly bought are now being made here at a profit. Mr. Jessup is constantly trying to improve the appearance and condition of his room and supplies and seeking new work which can be handled profitably in his printing department.

The foregoing will give a slight idea of the work handled by the Store Department at different points on the system. Every storekeeper at times is out of material which is absolutely necessary to have to release cars. In every case of this kind the storekeeper immediately telephones Torrance explaining exactly what is wanted and giving the number of the car being held. The Store at Torrance takes action immediately and if material is not on hand every effort is put forth to obtain the desired article. In the majority of cases, however, the material is shipped the same day the order is received.

At some points where the storekeeper must attend to everything unassisted, it is at times very difficult to keep the store up to the same point of cleanliness maintained at other points. These storekeepers have to not only attend to their records and correct and pass requisitions to the Auditor, but must personally receive their material from the supply car and place it on the shelves. Possibly

some day these stores will each be allowed an extra man. If so, the storekeepers will undoubtedly be able to show by improved service and conditions that the addition to the pay roll is profitable.

Mr. Thorburn has recently instructed all storekeepers that their stores must be kept up to the standard maintained by the Torrance Store. Judging from the type of men in charge of the various outside stores it is hardly possible that any of them will lag behind long.

C. J. TENNY.

PE

## SERVICE CHANGES

Effective Monday, April 26th, time table No. 23, Sawtelle Line, was effective, changing train due to leave Windward Ave. from 12:01 a. m. to 12:06 a. m. This change was made to accommodate a number of people who quit work at 12 o'clock and were in some cases unable to make the 12:01 train.

Effective Monday, April 26th, time table No. 36 was effective on Redondo-Del Rey Line, putting on an additional train leaving Los Angeles at 4:43 p. m. and Clifton at 6:20 p. m., and beginning at 6:39 p. m., all trains were set back 11 minutes out of Clifton.

Effective Saturday, May 1st, 1920, Glendora time table No. 39 was made effective, setting ahead train leaving Glendora at 6:35 a. m. to 6:30 a. m., this in order to accommodate a large number of patrons.

Effective May 3rd, San Pedro via Gardena time table No. 49 was made effective. Changes were made to accommodate shipyard workers, putting on a train out of the Los Angeles Shipyards at 3:50 p. m. and Southwestern Shipyards at 4:02 p. m.

Effective Monday, April 26th, changes were made in the Lagoon Line to conform with changes in connections with Redondo-Del Rey Line.

PE

## HELD UP!

Two of our Trainmen, Conductor J. Downs and Motorman M. A. Patterson, in charge of car No. 160, were held up at Tierra Alta, at the end of the East Washington Street line, Pasadena, at 12:51 a. m. on April 26th, by an amateur lone bandit, who apparently was quite young and inexperienced in his chosen profession.

He boarded the front end of car while crew were sitting inside during their lay-over at that point and as soon as Conductor Downs saw him, he converted his punch into a pistol and pointed at bandit, who fired a shot through glass door of car and ran. Downs received several cuts on face and neck from flying glass, caused from bullet; otherwise, no damage done.

PE

## AGENCY CHANGES

Effective April 19th, Mr. W. L. Moore was appointed agent at Brea, in place of Mr. J. M. Kinsey transferred to Monrovia.

Effective April 28th, Mr. R. F. Johnson was appointed agent at Van Nuys, vice E. V. Steinman transferred to Fullerton.



# PACIFIC ELECTRIC CLUB AFFAIRS

C. M. STUART, ASSOCIATE EDITOR

## PACIFIC ELECTRIC CLUB CALENDAR

May 10 to June 10

- Monday, May 10—**  
Pacific Electric Band rehearsal in auditorium, 8:15 p. m.
- Wednesday, May 12—**  
Pacific Electric Rod and Gun Club meeting at the Pacific Electric Club. After business meeting pictures will be shown and a big rabbit stew will be served.
- Thursday, May 13—**  
Moonlight dance in auditorium, 8:30 p. m.
- Friday, May 15—**  
Moving Picture and Vaudeville show in auditorium, 8:00 p. m.
- Monday, May 17—**  
Northern Division Safety Committee meeting, 2:00 p. m.  
Pacific Electric Band rehearsal in auditorium, 8:15 p. m.
- Tuesday, May 18—**  
Transportation Department meeting of all divisions, 8:00 p. m. Refreshments will be served in auditorium after business meeting.
- Thursday, May 20—**  
Regular Club dance in auditorium, 8:30 p. m.
- Friday, May 21—**  
General Staff meeting, 10:00 a. m.  
Moving Picture and Vaudeville show in auditorium, 8:00 p. m.
- Monday, May 24—**  
Pacific Electric Band rehearsal in auditorium, 8:15 p. m.
- Thursday, May 27—**  
Pacific Electric Club Carnival dance and High Jinks to be held at Redondo Beach Pavilion. Free dancing in pavilion and free swimming in the plunge for Pacific Electric Club members and their dependents. Special trains to and from Redondo. Music by the Pacific Electric Club Orchestra. No dance at the Pacific Electric Club.
- Friday, May 28—**  
Moving Picture and Vaudeville show in auditorium, 8:00 p. m.
- Monday, May 31—**  
Pacific Electric Band rehearsal in auditorium, 8:15 p. m.
- Wednesday, June 2—**  
Pacific Electric Club Executive Committee meeting, 2:00 p. m.
- Thursday, June 3—**  
Oriental Novelty Jazz dance in auditorium, 8:30 p. m.  
Southern Division Safety Committee meeting, 2:00 p. m.
- Friday, June 4—**  
Western Division Safety Committee meeting 2:00 p. m.  
Moving Picture and Vaudeville show in auditorium, 8:00 p. m.
- Monday, June 7—**  
Pacific Electric Band rehearsal in auditorium, 8:15 p. m.
- Wednesday, June 9—**  
Pacific Electric Rod and Gun Club

meeting, 8:15. Moving pictures shown after business meeting. Clam bake and fish dinner served.

**Thursday, June 10—**  
Confetti Jazz Dance in auditorium, 8:30 p. m.

PE

## "MOVIE" PROGRAMS

May 17th

Main feature, "Chasing Rainbows," starring Gladys Brockwell. Story of a girl who cleaned up a wild woolly town.

Fox Sunshine Comedy, "His Smashing Career."

Butt & Jeff Comedy, "Bith of a Nation."

Vod-a-Vil Movies.

Railway Instruction Film.

Illustrated Song, "Who Will Take the Place of Mary."

May 14th

Main feature, "Speed Maniac," starring Tom Mix.

Fox Comedy Comedy, "Shadows on Her Past."

Mut & Jeff, "A Rose by Name."

Bruce Scenic, "The Pale Pack Train."

Railway instruction film.

Illustrated song, "Shadows."

May 21st

Main feature, "Rose of the West," starring Madeline Traverse. A north-west mounted police story.

Fox Sunshine Comedy, "Are Married Policemen Safe?"

Mutt & Jeff Comedy, "Musical Soup."

Victorial Life.

Railway instruction film.

Illustrated song, "Let the Rest of the World Go By."

May 28th

Main feature, "Sacred Silence," starring William Russell. An army story. Not a war picture.

Fox Sunshine Comedy, "A Self-Made Lady."

Mutt & Jeff Comedy, "Cutting Out His Nonsense."

Photoplay Magazine Screen Supplement.

Railway instruction film.

Illustrated song, "When He Gave Me You, Mother of Mine."

PE

## PACIFIC ELECTRIC CLUB BASE BALL TEAM

Several of the fellows got together on the new ball field Sunday, May 2nd, and while the diamond was not quite in proper shape for practice, the boys had a good work-out. Inside of the next week the diamond and field should be in first-class condition, when the real work-outs will commence, and within a short time the bunch will tackle some of the strong aggregations of Southern California.

## CLUB NOTES

During the month of April 110 visitors were introduced into our Club and enjoyed its privileges.

Applications to the Pacific Electric Club Hikers are being received every day at the Club and in the next month's Magazine a list will be given of the members enrolled. If you are interested in hiking, don't fail to send in your enrollment. Membership is free.

Through the courtesy of Mr. Otto Kohnle, son of Mr. Phillip Kohnle, flagman on the Southern Division, the Pacific Electric Rod and Gun Club, has received several prehistoric Indian relics, which have been placed in the case containing prizes in the Pacific Electric Rod and Gun room at the Club.

Through the courtesy of Mr. Chas. P. Hill, Chief Clerk of the Transportation Department, the Club is in receipt of a complete file of all Magazines from the first issue to the present time, for which the management is very grateful. These Magazines will be bound in attractive covers and be kept at the Club for future reference of its members.

Mr. L. H. Covell, past pool champion of the Pacific Electric, has challenged Mr. W. H. Johnson, present champion, for championship of the Pacific Electric Railway, the play to be started April 29th. The final score will be announced in the next month's Magazine.

In the challenge game for Class "B" championship, Champion Frank L. Ford won from Willis M. Brooks, 455 to 410.

The big "movie" shows held at the Pacific Electric Club during the past month have been a tremendous success, and arrangements have been made for securing extra seating capacity to take care of the over-flowing crowds. The shows will begin promptly at 8 o'clock and will not last later than ten. The programs which are distributed should be kept on account that they contain a complete program of all shows for the entire month.

If you enjoy the "movie" shows at the Pacific Electric Club, don't forget to tell your friends. If not, tell the Pacific Electric Club.

If you are talented in any line that would give entertainment to any of our employes at our Club shows, don't fail to call up the Club and offer your services.

If you are down town and don't know where to go, don't forget that the Pacific Electric Club's door is always open to receive you.

The Pacific Electric Railway Band, which is rehearsing faithfully every Monday night, is going to take part in the "Made in Los Angeles" Industrial parade on Tuesday afternoon, May 18th, and from the interest taken



by the members of the Band, it is promised that they will try and make a greater success with appearance and music in this parade than has ever been obtained. This is the first appearance of the Pacific Electric Band in Los Angeles since the re-organization, January 1st, 1920.

PE  
**CLUB "JINKS" AT REDONDO BEACH**

Through the courtesy of Vice-President Titcomb, the Club will have a jinks and dance at the Redondo Beach Pavilion on the evening of May 27th, (Thursday) in place of the regular Club dance that would ordinarily be held at Club on that evening.

The outing will consist of bathing in the big Bath House in the early hours of the evening, with big dance later in the evening in the pavilion, music to be furnished by P. E. Club Orchestra and during the evening a prize waltz will be staged in which many contestants are expected to appear.

The excursion is for P. E. Club members and their dependents and transportation for the event should be secured through the heads of departments in the regular manner. Special flyers will be issued and circulated throughout the system, announcing special trains and their leaving time. On the return to the city, cars will leave Redondo Beach in ample time to make connections with city cars.

This event promises to be one of the most pleasant occasions ever given by the Club and undoubtedly the attendance will be great.

PE  
**ROD AND GUN CLUB**

Meeting was called to order at 8:15 p. m., April 14th, 22 members be in present. The following officers were present: Mort Stuart, L. M. Kohler, J. M. Geopfert and D. A. Terry.

Minutes of previous meeting were read and approved.

Seventeen new names were presented and accepted for membership.

Secretary reports a total membership of 69 and \$174.73 in the treasury.

Mr. L. M. Kohler presented his resignation as Secretary and Treasurer on account of his leaving the service of the Pacific Electric Railway. It was moved and seconded that the resignation be accepted with regrets of the entire membership of the club. Motion was made and passed unanimously that Mr. Kohler be made an honorary member.

On account of the resignation of Mr. Kohler, who was serving in the capacity of Secretary and Treasurer, the President appointed L. F. Volkhart to act as Secretary and L. R. Spafford as Treasurer. On account of the large enrollment of new members, it was deemed advisable that the duties of Secretary and Treasurer be performed separately. Motion was made and carried that notice be given previous to our next meeting, that at that time vote would be taken relative to amending our constitution to provide that the Secretary and Treasurer act in separate capacities.

Under the order of new business,

Mr. Spafford suggested for our meeting in June, that we have some steamed mussels and clams, also a fish dinner be prepared at the club after the meeting. This met with the approval of all present. Mr. Spafford was elected head of the committee to see that everything was in readiness for the June meeting. Also suggestions were made that in July a fishing trip be arranged, where we would all go to some beach and have competitive fishing contests and a big fish barbecue.

Mr. Spafford submitted registration cards to be used in the competitive shoot for the B. H. Dyas trap-shooting trophy. A motion was made and passed that 200 forms be printed.

The meeting adjourned at 9:10 p. m., and all members left for B. H. Dyas' indoor rifle range, where all spent an enjoyable evening at competitive shooting.

Following are the scores made by the members:

Name	Score
J. W. May .....	19
D. A. Terry .....	15
H. W. Edmonds .....	14
J. M. Geopfert .....	8
L. R. Spafford .....	8
W. M. Brooks .....	7
E. F. May .....	7
Wooderson .....	7
Bunch .....	7
R. W. Scott .....	6
A. R. Taylor .....	6
Walter Meyer .....	6
Wm. Kienz .....	5
Mortimer Stuart .....	5
Earle Moyer .....	5
L. M. Kohler .....	2
L. F. Volkhart .....	1

L. F. VOLKHART,  
Secretary.

PE  
**COMMITTEE MEETING**

Pacific Electric Club Executive Committee meeting, held at the club Wednesday, April 7th, was called to order at 2:00 p. m. by Mr. McPherson, acting in the absence of President Bishop, who showed up later.

Roll call showed the following absentees: G. H. Payne, H. L. Wigam, F. C. Roberts, D. B. Woodard, J. W. Anderson, John Whitley, T. H. Ewers, A. J. Guercio, O. L. Howard, F. F. Small, and E. C. Thomas.

Minutes of the last meeting, March 3rd, were read and approved.

Manager's report, as follows:

**Club Funds**

Bal. on hand Feb. 29, 1920..	\$ 827.55
Receipts .....	699.68
Total .....	\$1,627.23
Bills and expenses paid.....	873.36
Balance on hand Mar. 31..	\$ 653.87

**Relief Fund**

Bal. on hand Feb. 29, 1920..	\$ 498.07
Receipts .....	93.00
Total .....	\$ 591.07
Paid out in relief.....	338.21
Balance on hand Mar. 31..	\$ 252.86

**Membership**

Mr. Stuart reported that on account of not receiving returned deduction sheets for the month of March he was not in a position to report the exact membership of the club, but approximated it about 3500.

**Relief Fund**

In connection with Employees' Em-

ergency Relief Fund, Mr. Stuart reported several cases where relief had had been given during the past month; also stated that he had received several requests for cash loans out of this fund, but had not extended same because, as explained to the committee before, this fund is to be drawn upon only in cases of dire need.

**Mortuary Fund**

Mr. Stuart reported that payment of \$405.00 has been made to the widow of Mr. Thomas Barnes, who was stevedore at the Terminal Freight Office.

With reference to gathering up old newspapers and selling same, the amount derived from such sale to be turned in to the Emergency Relief Fund, Mr. Stuart explained that the labor in connection with this work was costing more than the actual amount derived from the sale of these newspapers, and stated that the matter would be taken up with Mr. Titcomb, with a view to securing an appropriation of amount that it would cost the company to gather up these papers.

Mr. Stuart stated that all social features in connection with the club were well sustained and patronized. The moving picture and vaudeville shows, and the Thursday night club dances were meeting with great success. The Pacific Electric Club baseball team and the Pacific Electric Rod and Gun Club were progressing nicely. Advised the committee that he had organized the Pacific Electric Club Hikers.

In connection with the membership campaign, Mr. Stuart said that he was, at that time, getting out his third letter to the employees of the company who have not as yet joined the club, and after a reasonable length of time a list of those who are still holding out would be turned over to the Executive Committee.

Mr. Stuart also reported that requisition had been approved for purchase of pool table, for the use of employes at Riverside, and that same would be installed in a few days.

**Unfinished Business**

Report made by committee appointed by Mr. Stuart at a previous meeting, to submit data in connection with equipping the third floor of the club into a practical gymnasium. This report was turned over to President Bishop, who was asked by the committee to submit same to Mr. Titcomb for the proper appropriation.

**New Business**

Mr. Spencer called attention to the fact that he had received quite a number of complaints, relative to cards which have been mailed from the club to new members, going astray, and getting into wrong hands. Mr. Stuart stated that he was inaugurating a system in the club, whereby every man who passes through the club will have to show his card and call out his number, which in turn will be checked against a numerical book record; which system he thought would eliminate the club being patronized by persons holding cards which do not rightfully belong to them.



Mr. Button called attention to the fact that sheets containing the combinations of the lockers a Watts had been lost, and they were unable to use the lockers at this point on that account. Manager stated that he would look into the matter.

There being no further business, the meeting adjourned at 3:15 p. m.

**ACCOUNTING DEPARTMENT NOTES**

**F. H. Gilbert**

The baseball team met with a defeat at the hands of the Salt Lake Playground Team; but, so they say, the wind was blowing a gale and the game was called at the end of the seventh inning, otherwise the result might have been different. But the outing was enjoyed just the same.

The office force has organized another team, in emulation of our illustrious congressmen, and have adopted the wearing of overalls to reduce the H. C. L. And the girls, well, they are looking neat and extra attractive in gingham. The team is considering a number of Saturday hiking parties, as they are now all prepared to start on time.

The Third Issue of Liberty Bonds was closed out in April, leaving only the Fifth Issue unpaid, and this issue will be closed out in June, which will cause many pay checks to resume normal proportions again.

The Accounting Department team mentioned above decided to call themselves the "Cheese Club" and opened up in a strong array of overalls, khaki predominating.

As usual many who enthusiastically signed up for membership, later decided that their dignity and social standing might be embarrassed if they appeared in the garb of labor, and fell by the wayside.

The heads of the bureaus came through strong, and with great dignity. For instance, Brother Howe was clad in pantaloons somewhat resembling in color "the morning after the night before." Brother Labbe is manfully standing up under the pressure, although his color scheme resembles a foggy morning, and in general appearance reminds one of our late president "Teddy" setting forth on an exploring expedition.

Metcalf, the original booster, is going heavy on the khaki from the neck down, and the general effect on his derrick-like proportions is very striking. The accusation made that he is trying to beat old "Hi Cost" by not wearing socks, is false, as he can prove to anyone who cares to investigate.

Brother Leaman, however, is a backslider. The spirit was willing, but he imagined he might be mistaken for a "cop" if seen in khaki, so decided to wear his old clothes, as he desired to assist in the war on old "Hi Cost."

The Special Accountants were so grounded in the habit of wearing "old clothes" that they concluded to refrain from buying new even if it was blue denim. But what are old clothes? Ask Mr. Lovell.

**PACIFIC ELECTRIC RAILWAY COMPANY  
OPERATING REVENUES AND EXPENSES, TAXES AND INCOME  
ACCOUNTS—MARCH, 1920**

Passenger Revenues .....	\$ 834,607.10	
Freight and Switching Revenue.....	267,620.36	
Other Revenue .....	55,527.06	
<b>Total Railway Operating Income.....</b>	<b>\$1,157,754.52</b>	
<b>Operating Expenses</b>		
<b>Way and Structures:</b>		
Wages .....	\$ 61,543.26	
Material, Supplies, etc. ....	27,136.45	\$ 88,679.71
<b>Equipment:</b>		
Wages .....	99,102.21	
Material, Supplies, etc. ....	40,049.86	139,152.07
<b>Power:</b>		
Wages .....	23,420.55	
Material, Supplies, Power Purchased, etc. ....	107,211.65	130,632.20
<b>Conducting Transportation:</b>		
Wages .....	317,076.16	
Material, Supplies, etc. ....	28,504.93	345,581.09
<b>Traffic:</b>		
Wages .....	5,190.72	
Advertising, Material, Supplies, etc..	6,459.73	11,650.45
<b>General and Miscellaneous:</b>		
Wages .....	39,821.57	
Injuries and Damages, Material, Supplies, etc. ....	51,971.07	91,792.64
<b>Total Railway Operating Expenses:</b>		
Wages as above .....	546,154.47	
Other Charges as above.....	261,333.69	
Transportation for Investment Credit .....	\$ 2,604.58	\$804,793.58
Revenue less Operating Expenses.....		\$352,960.94
Depreciation .....	21,487.68	
Taxes Assignable to Railway Operation.....	50,545.85	
Total Depreciation and Taxes.....		72,033.53
Revenue less Operating Expenses, Depreciation and Taxes .....		280,927.41
Non-Operating Revenue .....		14,436.53
Net Revenue .....		266,490.88
Interest on Bonds and Other Debt.....	296,234.84	
Rents and Miscellaneous Income Deductions.....	49,929.87	
Total Deductions .....		346,164.71
Net Loss .....		79,673.83
Net Loss for three months ended March 31, 1920.....		\$266,474.20
Los Angeles, California, April 20, 1920.		

H. A. CULLODEN, Auditor.

**MAKE YOU SHIVER?**

According to R. C. Cram in the Electric Railway Journal of March 27th, as the result of the February storm, the writer estimates that the quantity of snow which was piled up in the areas from which the railway companies in Brooklyn had to remove it amounted to 1,400,000 cu. yd. or 46,666 carloads, allowing 30 cu. yd. per car. The weight of such a quantity of snow may be of some interest. The Weather Bureau indicated a moisture content of 4½ in. for the 17.5 in. of snow in the Feb. 4 storm. This gives an equivalent weight of nearly 24 lb. per cubic feet of snow. On this basis the 46,666 carloads of snow weighed about 465,000 tons.

**WHAT IS A RAILROAD?**

A railroad is not the unfeeling and relentless devourer of automobiles and little children at grade crossings described by impassioned advocates in crowded court rooms. The whistle of danger is an engineer's use of a piece of machinery, but it is also the echo of a man's thought for his own babies left at home.

A railroad has been likened to an octopus by those who do not know the flesh and blood and personality of railroads. The soul of a railroad is Fidelity, and if a railroad is an octopus, it is an octopus with a soul.

A railroad is a disciplined power; owning rails and cars and locomotives; engaging the highest quality of mechanical skill and expert knowledge.



# ENGINEERING DEPARTMENT NOTES

M. L. RODDA, ASSOCIATE EDITOR

Frank S. Brady is acting as foreman on Bonding Car while Carl Shenefield is employed on the crane.

Shipment of "Ivory Dome Hair Restorer," although much delayed has at last been delivered to Mr. Rodda.

Raymond Lyons has left the services of this Company to take a position in San Francisco. In his seven years with this Company as Chief Accountant on Valuation, he has made many friends in the various departments who join in wishing him every success as Special Accountant of the Pacific Gas and Electric Company.

"An eight-pound boy" was quietly announced as having arrived at the home of Ernest R. Hayward, Transitsman in this department, recently. If the boy can smile as did his father in making the announcement, he will be a likely candidate to continue the works of Douglas Fairbanks when he retires. Mother and son reported in excellent health.

J. H. Douglas of the Bonding Department took a few days off the week of April 6, and upon his return

to work, announced that he was no longer master of his own destinies, having taken unto himself a wife, who he admits, is better qualified to steer the ship than is he—"a mere man."

Arthur Phelps, foreman on the Engineering crane, while helping load rail at Torrance, broke a small bone in his elbow and strained some of the ligaments in his arm. Although the injuries were painful, he has been able to continue working at other duties until such time as he can again use his arm. His duties on the crane are being looked after by Carl Shenefield.

"One," count 'em, size  $4\frac{1}{8}$  inches, put up an awful fight but finally landed. Mr. E. E. Bond reports good fishing in the Santa Ana Canyon. He was convinced that there were fish there and has finally convinced his friends, for a party of eight were able to catch twelve minnows on the opening day of the season. To be sure, Mr. Bond only caught one of the twelve but being the host on the trip, it was his place to modestly stand back and permit the guests to make the second catch, where any were made.

## RESORT DEPARTMENT "SQUIBS"

### REDONDO BEACH NOTES

The famous old Casino is now only a pleasant memory. Mr. Mayer, who presided over this popular eating house ever since it was erected in 1908, has sold his interests to the Venice Investment Co. and they are going to remodel the interior of the building and turn it into a high-class picture theatre. According to plans, already prepared, the fittings will be elaborate. A Hope-Jones pipe organ, similar to the one in Grauman's Rialto in Los Angeles will be installed and the house will have a seating capacity of 900. It is expected that everything will be in readiness for the grand opening in about sixty days, and the new picture house will be known as the "California Theater."

Redondo Beach is growing. The U. S. census figures just published gives a population of 4,913, an increase of 1,978 in the past ten years. During the last six months she has gone ahead by leaps and bounds and it is safe to say that Redondo Beach has really just begun to grow.

Redondo Union High School has secured the services of Instructor Combs, at the Bath House to get the

boys in shape to take part in the Southern California and Bay Cities aquatic meets which will be held in a few weeks. The boys, under Ted's instruction, are now making a fine showing in the water and will be a hard bunch to beat.

In preparation for the coming summer season the big Bath House is being renovated. Elaborate alterations and improvements are being carried out and when completed will make it the finest and best equipped on the coast.

The Dance Pavilion is maintaining its popularity. Every Wednesday, Saturday and Sunday nights and Sunday afternoons big crowds gather and the dance floor gets its share of happy and joyous couples who step the light fantastic to the strains of Miller's orchestra.

The concessions along the water front are all well patronage and the throngs who gather round these amusements and games on Saturdays and Sundays speak well for the coming summer season, as there never was a time at this season of the year when this kind of business was so good in Redondo Beach.

The Pacific Electric Club Band has been specially engaged to give a concert during the visit of the National Electric Light Association to Redondo Beach on Sunday afternoon, May 23rd.

Don't forget the Big P. E. Club High-Jinks at Redondo Beach on Thursday evening, May 27th.

### URBITA SPRINGS NOTES

O Boy! you should have seen Urbita Springs last Wednesday. The student body, some five hundred strong, from Pomona College, Claremont, swooped down on the Park and took full possession. The occasion was their annual picnic and Superintendent Froude and Resort Agent McCammond had a delightfully busy time looking after their various wants and seeing that nothing was left undone to assure them a happy and glorious day.

They arrived in special cars about 9:30 a. m. and immediately the fun started—boating on the lake, swimming races in the plunge and at twelve o'clock the party adjourned to the public grove where the tables were spread with everything that was appetizing, from real juicy steaks—especially barbecued by the chef from the college—down to ice cream and cake.

After lunch, which everyone thoroughly enjoyed, the party spent the afternoon in dancing and indulging in various games which had been provided for their entertainment. A special orchestra was engaged for the dance music.

Superintendent Froude and his gang of men are now busy overhauling and renovating around the park, bath house, dance hall, etc., in preparation for the coming summer season. The summer opening will take place on Sunday, June 6th, when a big program of amusement features will be presented.

### MR. TITCOMB ADDRESSES CLUB

Vice President H. B. Titcomb made a short talk to the employees at their entertainment held in the Auditorium of the Club building on Friday evening, May 7th, outlining briefly the financial condition of the Pacific Electric Railway Company and referred to the statement issued by the State Railroad Commission which indicated the Company had not met its obligations by \$2,600,000 for the year 1919. He gave figures which were contradictory to the general idea prevalent, that the road did more passenger business in the year just closed than in times past. The year 1913 was cited, the official number of passengers carried that year being 82,000,000, with 550 miles of operative track, or 149,100 passengers per mile of track, whereas during the year 1919 there were only 78,509,000 passengers carried over 616 miles of operative track, or 127,430 passengers per mile of track, a decrease of 21,670 passengers, or 17 per cent. per mile of track. In 1913 the gross passen-



ger receipts were \$7,561,519, or \$13,748, per mile; in 1919 the gross passenger receipts were \$8,122,870, or \$13,186, per mile, a decrease of \$562, or 4.2 per cent.

Mr. Titcomb said it was interesting to note the figures as to the cost of labor: during the year ending December 31, 1917, there was paid out in wages \$3,565,425, and in 1919, with practically the same number of passenger car miles, there were paid out \$5,933,699, which is an increase in the payroll of 67 per cent. From present indications the payroll for 1920 is estimated at \$6,789,051, or an increase of 14 per cent over last year, principally on account of the increases given April 1st and the merit system put in effect for the trainmen, or an increase of 90 per cent in three years, during which time the increase in the rates for handling passengers does not exceed 14 per cent. The Pacific Electric are doing a good business in 1920 and were it not for this fact, wages could not, of course, have been increased, but appreciating the loyalty of the men, the splendid service they are performing, and realizing the necessity for stabilizing employment and doing the very best possible for the men, these increases were voluntarily given.

The activities of the Club and its growing popularity were spoken of, and assurance given that the Club will occasionally provide entertainments at Redondo and Urbina Springs, as well as in the Club building. Special attention was called to the regular monthly meetings of the men in the train service on the different divisions held at the Club, at which time all questions affecting the employment of the men, their comfort and betterment, as well as the bettering of the operative conditions, are thoroughly discussed, and through this medium the employees are acquainted with the actual conditions. He closed his remarks by saying the policy of the Company is to meet its employees individually or in open meeting at any time, and that it should not modify this practice as it gives every man an opportunity to be heard.

PE

### THE MONEY VALUE OF COASTING TIME

By G. H. Grace, Chief of Efficiency Bureau

We are all familiar with the expression, "Time is money," but probably very few of us have given the subject any serious thought as to the why and wherefore; and in order that we may appreciate the great value of time from a money standpoint, I will endeavor to show the value of time as related to "Coasting."

At the beginning, we should have a clear understanding to the meaning of coasting as applied to car and train operation on the Pacific Electric.

Coasting is that period during which the car or train is moving with neither power nor brakes applied. This discussion, therefore, will more directly concern the motormen than

the other trainmen; and next to safety and maintenance of schedule, the coasting feature of train operation should be given the best efforts of the motorman, as it enables him to take full advantage of power already expended and saves unnecessary wear and tear on the motor equipment and also on brake shoes and brake rigging.

Therefore to the extent that he operates safely, which means observing the operating rules, maintains the schedule, which means keeping on time, and takes advantage of coasting opportunities, we have practically the exact measure of a motorman's efficiency.

The great importance of coasting was definitely realized several years ago after the Company had completed a six months' test when it was adequately proven that the difference between ordinary operation and efficient operation on our System amounts to not alone thousands of dollars per year but to hundreds of thousands in the cost of power alone; and in addition, efficient operation results in less heating of motors, less copper loss, less repairs and less brake shoe wear, all of which contribute to a lower maintenance expense.

The tests referred to were made under actual service conditions, a car being equipped with a coasting time recorder and a watt-hour meter, and operated over various lines; and in this way we were able to learn the amount of coasting ordinarily accomplished by motormen when unaware of observation, the greatest amount of coasting that could be secured by expert motormen and the power consumption at the various coasting periods or values.

It might be well to state here, that while it was necessary to check the coasting done by the men when they were unaware of observation, yet in no case where a poor coasting record was noted was it considered wholly the fault of the motorman, but rather the fault of the Company in not bringing the importance of coasting properly to his attention. Now that coasting is to again be given attention it will be the motorman's own fault if he does not bring himself to a full realization of the importance of this feature of his duties; and the Company, by the maintenance of proper records, is enabled to keep closely informed of just what coasting is being done. The records accumulated during the past three years show conclusively the possibilities of every line, and after a certain time any indication that a motorman is not operating efficiently will be taken as a sign of indifference or incompetence on his part.

However, we feel reasonably sure that after having attention directed to the matter, every motorman will endeavor to meet the situation fairly and build up his coasting record accordingly.

A printed pamphlet entitled, "The Economical Operation of Electric Cars" compiled by the Efficiency Bureau, has recently been distributed to

the motormen; and all concerned are urged to familiarize themselves with the instructions therein, which, if followed, will result in very commendable records.

We will now consider the value of coasting not as developed by the tests referred to, but as shown by our power records before the coasting clocks were installed on the cars; during the period of their use and until August, 1919; and from August, 1919, to March, 1920, when coasting was virtually neglected.

Before the clocks were installed, our power consumption averaged 155 watt-hours per ton mile; during the period after installation the average dropped to 142 watt-hours per ton mile, a reduction of 13 watt-hours per ton mile, or a little more than 8.3 per cent.

Since August, 1919, the consumption has again jumped to 155 watt-hours per ton mile or more than 8.3 per cent. I think we can safely attribute the increase to the non-use of the clocks and poor operating efficiency of the men whose work could not be wholly checked up because no coasting clocks had been maintained.

Our power cost for the operation of cars amounts to about \$95,000.00 per month, or \$1,140,000.00 per year; 8.3 per cent of \$1,140,000.00 equals \$94,620.00 per year in wasted power, due to lack of coasting.

And while we have shown a waste of power consumed represented by the difference between 142 W. H. and 155 W. H., we should be able to reduce the 142 W. H. average to at least 138 W. H. per ton mile, in which event the saving would be approximately 11 per cent or represented in money, \$125,400.00 per year.

And we have only considered the question of power in the discussion; what would have been saved in motor maintenance and brake shoe wear?

And analysis of brake shoe costs in 1917 indicated a reduction of approximately \$5,000.00 per year in the cost of shoes alone. So far no attempt has been made to analyze maintenance costs involving the electrical equipment of cars, but there is no doubt but a very appreciable reduction could be shown between costs prior to the installation of the coasting clocks and afterward.

Therefore we know that Time, particularly "coasting Time," is money.

Let us watch the coasting time; the whole question of coasting is simply a problem in time; we have a scheduled amount of time to move a car or train from one place to another, and the cheapness with which this can be accomplished is proportionate to the amount of coasting done.

High coasting is obtained by as short an application of power as possible and as short an application of brakes as possible; the short braking period is equally as important as the short application of power.

Remember that safety comes first; maintenance of schedule second and coasting third; and that the measure of your efficiency is indicated by your coasting record.



# Transportation Department Meetings

## NORTHERN DIVISION TRANSPORTATION MEETING

The regular monthly meeting of the Northern Division trainmen was held on April 20th at the P. E. Club, meeting being called to order at 8:15 p. m. by Chairman P. H. Riordan, with fifty trainmen and the Northern Division Staff in attendance.

The minutes of the previous meeting were read and approved.

### Unfinished Business

By Conductor M. M. Williams, that single track pay be allowed for the entire day's work for any run that made one or more trips east of North Pomona.

Disposition: This request was granted by the Management.

### New Business

By Motorman Fuller, that gasoline speeders on the San Bernardino line are not calling the Dispatcher in regard to extra trains.

Disposition: Referred to Mr. E. C. Johnson.

By Motorman Paulsen, that the trainmen's lockers at Macy Street are being broken into and personal property being stolen. He suggested that the combinations of all these lockers be changed.

Disposition: Mr. Bradley will arrange to have combinations changed.

Conductor Snedaker requested that more service be provided for the local people living between Wilmar and Los Angeles, as the passengers were complaining to him of the infrequent service.

Disposition: Referred to Mr. O. A. Smith for consideration.

By Motorman Welsh, that the landings on the Altadena line are not high enough; that women have a very hard time in boarding cars.

Disposition: Referred to Mr. H. E. Rodenhouse.

That landings on the San Bernardino line are too short for three-car trains.

Disposition: Referred to Mr. W. B. Foote to check same and report at the next meeting.

By Motorman Fuller, that the trees on the Corona line between Magnolia Junction and Arlington need trimming.

Disposition: Referred to Mr. E. C. Johnson.

By Motorman Fuller, that switch targets on the R. R. & P. Division are very badly in need of paint.

Disposition: Referred to Mr. Cullen, Superintendent of the Salt Lake, for his attention.

By Motorman Fuller, that the bushings on the air handles of the M-24 valves are badly worn and should be replaced.

Disposition: Referred to Mr. F. F. Small.

By Motorman Fuller that horses and cows are being tied on the right of way on the San Bernardino line so that they can get on the track.

Disposition: Referred to Mr. E. C. Johnson to have his section foremen stop this practice.

By Motorman King, that 300-class cars at Pasadena are not being properly cleaned, as when they take the cars out in the morning they find them very dirty. In this connection he also stated that the windows and seats of the 700-class cars at Pasadena are very dirty also.

Disposition: Referred to Mr. F. F. Small for his attention.

By Conductor Smith, that a great many trains are being delayed at the foot of the Viaduct loading the afternoon papers. It was recommended that the papers be handled through the station, using the elevator and trucks to avoid this delay.

Disposition: Referred to Mr. Anable and Mr. Day.

By Conductor Smith, that some conductors are allowing passengers on

limited trains to ride to Vineland on Baldwin Park tickets.

Disposition: Referred to Mr. O. A. Smith to see if it is possible to extend the Baldwin Park fare to the Vineland S. P. crossing.

Requested that refreshments be served upstairs in lobby instead of in Southern Division meeting room, to avoid disturbance in case other meetings let out before the Southern Division.

There being no further business, the meeting adjourned at 9:15 P. M.

C. H. BELT,

Secretary.

## NORTHERN DIVISION TRANSPORTATION MEETING

### Pomona District

The regular monthly meeting of the Pomona trainmen was held on April 9th at Pomona, meeting being called to order at 10:30 A. M. by Chairman Snedaker.

In addition to Mr. Foote, there were fourteen trainmen present.

### New Business

Suggested by Conductor L. T. Bashore, that the overhead crossover at Barranca St. (Covina) be installed the same as the one at Holt and Garey Ave., Pomona, so that when backing in either direction the trolley will take the siding.

Disposition: Referred to the Electrical Department.

By Motorman J. H. Jordan, that trainmen when cutting off cars at Barranca St., put them down as far to the east end of siding as possible, so that when other cars are left, trainmen will not be detained by having to pump up and move cars standing about half way down siding the second time, causing unnecessary delay.

Disposition: Referred to Mr. A. C. Bradley.

By Motorman J. H. Jordan, that the fenders on 1200 type cars be changed, so that when coupling cars they may be raised and fastened instead of being taken off.

Disposition: Referred to the Mechanical Department.

By Motorman C. L. Hyde, that the railing inside the front of 170 type cars, used to hold curtain down, be moved back five inches, there not being enough space for motorman to sit and properly operate car.

Disposition: Referred to the Mechanical Department.

By Motorman J. H. Jordan, that the Addie Street stop be eliminated, on account of when starting on the grade and curve, and being near the breaker, the circuit breaker at Pomona substation is thrown out.

Disposition: Referred to Mr. A. C. Bradley.

By Conductor E. Johnson, that the Pacific Electric Ticket Office at Pomona be kept open until 11:00 P. M., as many tourists and strangers come into the waiting room for information evenings and find office closed. It has been noticed that many go over to the Bus Line office, receive desired information and take bus.

Disposition: Referred to Mr. A. C. Bradley.

By Motorman C. L. Hyde, that more and better toilet facilities be provided at Pomona office, there being but one toilet now being used by about forty trainmen, and the employees of Stout's Cafe, Garey Avenue Shoe Repairing Shop, and Auto Accessory & Supply Shop.

Disposition: Referred to Mr. A. C. Bradley.

By Motorman Jordan, that the letter "S" be painted on poles the required distance for the following stations inbound and outbound: Granada Park, Wilmar, Meadow View, Orange Ave., Charter Oak, and Valley Center, so that they may be easily located at night.

Disposition: Referred to the Maintenance of Way Department.

By Chairman Snedaker, that some

arrangements be made for shelter at Pomona Yards, to keep bicycles, stools and grips of trainmen.

Disposition: Referred to Mr. A. C. Bradley.

There being no further business, meeting adjourned at 11:35 A. M.

E. E. COOPER,

Secretary.

## NORTHERN DIVISION TRANSPORTATION MEETING

### Eastern Lines

The Northern Division, Eastern Lines, trainmen, held their regular monthly meeting on April 13, at Riverside, Chairman D. J. Finley calling the meeting to order at 7:30 P. M., with twenty-eight men in attendance. The minutes of the previous meeting were read and approved.

### Unfinished Business

That an extra air handle, change-over handle and power fuse be left at Rialto substation.

Disposition: This has been done. That whistles on 500-class cars be adjusted so that the sound will be more efficient.

Disposition: This has been attended to.

That newsboys make so much noise upon arrival of train No. 53 at San Bernardino it is impossible for Conductors to hear the Dispatcher over the telephone.

Disposition: This has been attended to.

Switch locks on derails, Los Angeles line, are being broken and thrown away.

Disposition: This matter has been checked up and improvement made.

That yellow flags on the Los Angeles-San Bernardino line are not being respected.

Disposition: There is decided improvement along this line.

That rate of pay for operation of one-man cars before the strike was two cents more than local pay, and since the strike they are receiving only local pay.

Disposition: This matter has been checked up and it was found that trainmen operating one-man cars are allowed two cents more per hour than for local work.

That there are no Stop Signs at Beverly and Elmwood, on the Brockton Avenue line.

Disposition: Signs have been placed at these stations.

Station lights on the Riverside-Redlands and Corona lines are not being turned off and on.

Disposition: Bulletin has been posted covering this and same is being observed.

That racks in the 1200-class cars are very dirty.

Disposition: This matter has been taken care of by the Mechanical Department, and decided improvement is shown.

That signal cans are not placed in holders properly and when taking them out it trips the fastener allowing torpedoes and fuses to drop out.

Disposition: This matter has been corrected by bulletin.

That steps on 500- and 200-class cars break very easily account of side irons being taken off.

Disposition: The Mechanical Department advises that no irons have been taken off cars of this class, that they are the same as they have always been.

That Orange Empire cars are running too fast, outbound, around curve located between Muscat and Fontana.

Disposition: This operation has been corrected.

That motors on the San Bernardino line, which are to be used at night, are found without oil in the lanterns, or signal protection.

Disposition: This matter has been corrected by the Mechanical Department.

That outbound trains on the Riverside-Redlands line be allowed two minutes more running time between Riverside and Palmyrita.

Disposition: This time has been allowed on proposed time table.

That trees be trimmed, located on the west side of track between south



switch of the Gravel Pit and Santa Ana River bridge.

Disposition: This work has been done.

That trees be trimmed along the west side of the track near Lytle Creek Bridge, on the Riverside-Redlands line.

Disposition: This has been done.

#### New Business

By F. H. Smith, that the Chairman appoint a trainman and give him a subject to look up and talk upon at the next meeting.

It was decided that it would be better to choose some subject for the next meeting when everyone present could discuss the matter. Subject chosen for next meeting, "How To Prevent Flat Wheels."

By Motorman Downs, that gongs on some of the 400- and 500-class cars are not efficient, which is due to the heavy clappers; also, the conductor's bells, on the same class of cars, do not work properly.

Disposition: Referred to J. Gilbert

By W. C. Monroe, that the trolley wire be put in from First and Main Streets yards, connecting with trolley wire on La Cadena cut-off, as the freight crew has to have five or six cars to set in cars at that point.

Disposition: Referred to the Electrical Department.

By Motorman D. E. Downs, that conductors turn backs of register books together, which breaks the binding.

Disposition: Referred to Mr. F. E. Peachey.

By J. Gilbert, that a number of windows are being broken in 400- and 500-class cars.

This matter was discussed, and it was found that this was due to conductors climbing on the rear end of car to replace trolley catchers, account of them being changed to a higher position.

Disposition: Referred to the Mechanical Department.

By J. Hunckler, that trains are taking the crossover at too high a rate of speed in Riverside.

Disposition: Referred to Mr. F. E. Peachey.

By C. H. Jones, that trains are operating over Van Buren Street, Arlington, at too high a rate of speed. Suggests bulletin be posted reducing speed to fifteen miles per hour.

Disposition: Referred to Mr. Peachey.

By C. H. Jones, that passengers be allowed to board and leave car from both front and back end on Main Street, Riverside, going in either direction. This to save delay.

Disposition: Referred to Mr. Peachey.

By Motorman W. N. Peebles, that time cards be placed in the different stations along the Riverside-Redlands and Corona lines, for the benefit of the public.

Disposition: Referred to C. H. Jones.

By Motorman W. N. Peebles, that passengers leave the car from the wrong side between 14th and Main Streets and Tyler, account of the gates not being sufficient to keep them from getting under them.

Disposition: Referred to the Mechanical Department.

By Motorman D. E. Downs, that there is a Green bus carrying passengers between Arlington and Riverside.

Disposition: Referred to the Traffic Department to see whether they have any tariff on file, or license to operate same.

By I. O. Gough, that there should be hat check holders on the 400- and 500-class cars, for the reason that there is no place to put them unless they are handed to passengers or put in the curtains, which is very unsatisfactory.

Disposition: Referred to the Mechanical Department.

By Motorman C. L. Ellis, that there is much oil on the tracks in front of Market Street Station due to cars standing there, which makes the rails very slippery.

Disposition: Referred to J. Hunckler.

By Agent Mee, that conductors on the Riverside-Redlands line are not

calling the train in the waiting-room at Riverside.

Disposition: Referred to Mr. Peachey.

By Conductor Nywening, that jitney buses running between Colton and San Bernardino stop at Urbita and take passengers off our cars.

This matter was discussed and it was agreed that this could not be prevented as our cars stand in the city streets and we have no authority to stop them.

By J. Gilbert, on account of trying to make a good coasting record, motormen are allowing their cars to coast right up to the stopping point and then applying too much air, causing wheels to slide.

Disposition: Referred to Mr. Peachey.

By Conductor O'Hara, that running time on the Victoria-Fairmount line is too fast when travel is heavy.

Disposition: Referred to Mr. Peachey.

There being no further business before the meeting, adjourned at 9:00 P. M. to meet at San Bernardino, Tuesday, May 11, 1920.

F. E. PEACHEY,  
Secretary.

#### SOUTHERN DIVISION TRANSPORTATION MEETING

The regular monthly meeting of the Southern Division trainment was held on April 20, in the Auditorium, Pacific Electric Club. Chairman Mulligan calling the meeting to order at 8:00 P. M.

The attendance numbered approximately thirty trainmen in addition to Assistant General Superintendent McPherson, Superintendent Davis and staff members, and General Passenger Agent Smith.

The reading of the minutes of the previous meeting was waived.

#### New Business

Information requested as to rate of pay on line cars. Single track men only are permitted to hold these runs; should they not be paid at single track rate?

Mr. McPherson stated that single track rate applied when appreciable part of time is spent on single track; if continuous service on double track, then double track rate would apply.

Disposition: Mr. Davis will bulletin ruling in full.

That overhead be installed on crossover on San Pedro Street between 7th Street and turnout to viaduct; much difficulty experienced in handling trolley and throwing switch, in single car operation end and but one man to do both.

Disposition: Referred to Electrical Department for such action as may be consistent.

By Motorman R. B. Floethe, that whistles on cars be changed from present position to a location on roof of car, to eliminate noise close to motorman's ear. Could also be heard greater distance and easier to recall flagman; would do away with chance of overlooking bell signal from conductor if given while whistle is being sounded; would also do away with losses caused by shipyard workers stealing them.

Mr. Green stated position on roof not desirable account liability of trolley rope interference; about two years ago began lowering whistles to present position to make them more effective; that higher location requires longer pipe between valve and whistle, resulting in failure to produce short blasts account so much dead air space.

Disposition: Carried over to next meeting, in order to allow time for thinking it over and permit a more general discussion.

By Mr. Floethe, that some kind of a secure handhold on roof of cars be provided so can safely get on roof to fix trolleys; the step irons on side of cars are too small and do not afford secure foothold.

Disposition: This matter is already under investigation by the Mechanical Department.

By Mr. Floethe, that wooden or wood and glass doors, same as on cars 1028 and 1029, be installed on inter-

urban equipment to prevent passengers from evading payment of fare.

Disposition: The question of a new type of gates for all classes of equipment is now under investigation and study by the Mechanical Department.

By Conductor A. M. Wahl, that some kind of device be applied to seat backs to hold hat checks.

Disposition: The question of hat check clips is now under consideration by the Mechanical Department.

Information requested as to rate of pay on one-man cars.

Disposition: Mr. Davis stated, the rate was two cents per hour more than regular rate.

Recommended that in marking runs extra men be signed up in succession according to their seniority.

Mr. McCulley stated this would work a hardship on new men; the present system aims to give all the extra men a fair show; not always possible to use a tripper man on interurban during middle of the day as they would not get back in time for the afternoon trippers.

Suggestion offered that two boards be maintained, one for interurban and one for local runs.

Mr. Button suggested that it might be feasible to work out tripper regular runs of about 9 hours.

Mr. Davis requested Mr. Button to see what could be done along this line, in way of a schedule.

Disposition: Question carried over to next meeting.

By Mr. Button, that many conductors are not collecting fares between 1st and 9th Streets, on Watts line.

Disposition: Staff officers will check the situation and take proper action to remedy.

By Mr. Mulligan, that additional cars are needed on Watts line between 6 and 8 P. M., inbound, as these cars are all heavily overloaded and running late; many fares are missed in consequence.

Disposition: Travel check will be made to ascertain if additional service necessary.

By Mr. Mulligan, that too much paint is applied to jumpers, which is not always sufficiently dry; and trainmen get clothes mused while handling fenders.

Disposition: Referred to Mechanical Department for necessary action.

Information requested as to use of new style of coupon pass books; claimed conductors on Northern Division will not accept them from trainmen, it being their understanding that badge number and uniform are sufficient.

Disposition: Instructions as to requirements will be issued to all divisions.

By Motorman J. B. Murphy, that there is no re-starting brush controlling automatic flagman at Zaferia; when operation is cut out by passing train and following train has passed starter, signal does not cut in again, introducing a hazard of accident.

Disposition: Referred to Maintenance of Way Department for proper action.

Chairman Mulligan announced the expiration of his term as chairman, and called for nominations for his successor.

Mr. Mulligan was renominated, and no other nominations being presented, was duly elected chairman by acclamation.

Mr. Mulligan directed attention to the apparent lack of interest in the meetings and failure of those in attendance to bring up questions for discussion; stated he was constantly hearing complaints around the terminals of this thing and that thing and what ought to be done, but no one has anything to say at the meetings, notwithstanding that is what the meetings are held for.

All such matters should be presented at the meetings that they may be discussed and threshed out.

There being no further business before the meeting, adjourned at 9:40 P. M.

G. H. GRACE,  
Secretary.



## WESTERN DIVISION TRANSPORTATION MEETING

The Western Division Trainmen's Meeting for April was held in the Committee Room, Pacific Electric Club, on the 20th.

Ex-Chairman Mr. Bert Shangle, opened the meeting with a short, spicy talk, introducing Chairman-elect for the next quarter, Mr. A. J. Speak, who took the chair amid applause.

Reading of the minutes of the previous meeting was dispensed with.

### Unfinished Business

Hat checking. Satisfactory conclusion as to some definite instructions for hat checking of passengers, and improvement of the form of hat checks used, could not be obtained, owing to the absence of Mr. Smith of the Passenger Department.

Disposition: Carried over to next meeting with hope that Mr. Smith might be present and give desired information.

Bidding in runs, holding them three or four days, and then bidding in other runs.

Mr. Shangle suggested that this being a broad subject, he was in favor of carrying it over to next meeting, so that trainmen could give it time for further consideration.

Disposition: Mr. White being of the same opinion, asked the trainmen to consider vacation time, and large turn over of men before taking definite action, and asked that the matter be brought up again at next meeting.

### New Business

By Mr. Shangle, that his attention had been called by a brother trainman on the Redondo line, to the fact that the Golden State Studio has a blinding light reflecting on the tracks at night which interferes with operation of trains.

Disposition: Mr. White stated that he would see the Studio people about the light, and have trouble remedied.

By Mr. Shangle, that lockers for trainmen should be provided without further delay, so that their belongings may be protected with some degree of safety.

Disposition: Mr. White stated that lockers and locker keys had been ordered from Chicago several months ago, but owing to labor conditions and shortage of materials, they had not arrived but were expected any day.

By Mr. Shangle, that toilet facilities at all points were in bad condition.

Disposition: Mr. White stated that toilet for Gardner Junction now up to Maintenance of Way Department, and other places would be investigated.

By Mr. Shangle, that he had experienced considerable trouble of late, while operating PAYE cars, with passengers rushing to front end of car to get on claiming they had paid fare to conductor.

Disposition: Mr. White stated that it was bad practice to let passengers in at front end of PAYE cars and if being done, was a condition he did not know of and would have it checked up.

By Mr. Shangle, that signing of cars at Hill Street Station was still far from what it ought to be.

Disposition: Mr. White stated that as the responsibility for signing of cars was definitely placed with Mechanical Department, he would call on Mr. Todd to answer.

Mr. Todd replied in part that he had heard no complaint from superintendent or trainmen within past 30 days; that it was impossible to get at the root of the supposedly existing evil without some knowledge of what is not being done; that this trouble being brought up spasmodically once in 30 days was not providing him with sufficient information for definite action. After considerable discussion by Messrs. White, Todd, Shangle, Jenks, and others, Mr. Todd stated that he would endeavor to obtain better results.

By Mr. Converse, that decorations in Auditorium be raised so as not to obstruct view of gallery audience on nights when moving pictures are shown.

Disposition: Mr. White will take up with Club Manager.

By Mr. Converse, that second supply car be rigged up with crane, same as supply car No. 1, so heavy articles could be more efficiently moved.

Disposition: Mr. White will investigate.

By Mr. Toenesj, that signal bells on 400- and 500-class cars are often B. O. stick, cause wear on batteries and some delay.

Disposition: Mr. White will take up with Mr. Small.

By Mr. Toenjes, that switch lock should supplant present lock on toilet door at Glendale Station so trainmen might have access between the hours of 5:00 P. M. and 7:00 A. M.

Disposition: Mr. White will take up with agent.

By Mr. Reinmuth, that a bonus should be offered as an inducement to get trainmen to attend meetings.

Chairman Speak stated that a bonus would follow at close of meeting, but he would announce that later.

Disposition: Mr. White stated that these meetings were for the trainmen, and more interest might be stimulated if those present would tell other trainmen that he was present because he was on trial and any questions they wished answered might be presented at these meetings.

Mr. Edmonds suggested that meetings be called at 8:30 instead of 8:00 P. M., now that entertainments had been dispensed with, to allow trainmen whose runs tied up at 7:00 P. M. or 7:30 P. M. opportunity to attend without arriving late.

By Mr. Pierce, that Sunday schedule of Vermont-Venice extras be set more than four minutes ahead of regular trains. Suggested 15 minutes service, well advertised, would relieve heavy load on regular, and light load on extras.

Disposition: Mr. White will take up with passenger department as to what advertising can be done.

By Mr. Sutherland, that outbound Glendale and Arbank cars dispense with stop at Burden Avenue on Glendale line, making stop at light circuit only.

Disposition: Mr. White stated that track across bridge was only temporary, but will investigate.

Mr. Brown gave some good advice on what the trainmen could do to help the Company by freely advertising accommodations offered.

He was followed by Mr. Pierce on the same subject, who said in part: "If each of us trainmen will do our part well, our Superintendent will have more time to get out on the road, see things as we see them, and won't have to devote so much time to avoidable complaints which come to his office."

Adjourned at 9:30 P. M. to partake of ice cream and cake in the Auditorium.

A. H. IRELAND,  
Secretary.

PE

## NATIONAL CARELESSNESS

Is it true that we are as careless as other nations seem to think?

Is it true that we are indifferent to the seriousness of the unbelievable waste of irreplaceable human lives and faculties?

Mr. Arthur E. Holder, in an address before the second New York State Industrial Conference, is quoted as having said as follows:

"Long before we devised such mottos as 'Safety first,' 'Watch your step,' 'Look out,' 'Be careful,' we had others. One said, 'I dare you.' Another said 'You dassn't,' and the third was, 'Scare cat.' Boys and girls alike reveled in those joyous declamations of Spartan vigor and courage and our children today shout with avidity these noisy exclamations of bravado. The boy who was afraid of being

hurt rarely ever secured a creditable mark in his class. It seems that a certain measure of boasting, endurance, physical courage, and disdain of pain is a part of our national heroics, and that the boy who is afraid of being hurt rarely ever gets anywhere. Temperamentally we scorn those who do not dare to do. In every step in our campaign for safety habits and safety laws we, the workers, have had this disdain of danger to contend with. The foremen and superintendents of shops and factories have no regard for the worker who is timid, who will not 'take a chance,' especially when a rush job is on.

"As a people we cheer loudest for the roughest foot-ball player, the slickest base stealer, the most reckless diver; the structural ironworker, that darink acrobat, who seems most indifferent to hazard and accident while working on the dizzy heights of a modern skyscraper, appeals to our afflicted fancy as a superman."

Another writer has said that we are at heart a sympathetic and generous people. The mixture of our Irish and Pilgrim ancestors has insured this. We plunge into any enterprise, whether of a business character, a social or political reform, or charitable undertaking, with enthusiasm, and not infrequently with undue haste. But, alas, prompted by the complexity of our modern life and method of thought, we soon grow lukewarm and turn to some other endeavor to utilize our unbounded energies.

PE

## DON'T WORRY—SMILE

The world knows but little of failures, and cares less. The world only watches the successes.

Stop worrying over things that can't be helped, and go and do things that can be done.

Few people care a continental for your failure. Few, if any, will help.

You may sit and magnify your mistakes, mourn and go mad over your blunders but men will only smile that cynical smile and say of you, "He's no good."

Self-pity, sympathy-soliciting, wishing and wailing will only let you down lower.

Brace up. Brush up. Think up. And you will get up. Think down. Look down. Act down. And you will stay down.

Paint your face with a smile. Advertise that you are a success. Then think and work for it.

Whatever you think you are is the price they will pay.—Silent Partner.

PE

## No Furniture on Mayflower!

A fact at variance with popular belief is that so far as known the Mayflower carried no household furniture. A fleet of Leviathans could scarcely have carried the pieces which have since claimed Mayflower origin. There are now more sons of Pilgrims in the Mississippi Valley than in Massachusetts, more on the Pacific Coast than in Plymouth.—D. P. Kingsley in Munsey's Magazine.



# PACIFIC ELECTRIC EMPLOYEES'

## SEASON 1920 VACATION HOME SEASON 1920

### INFORMATION IN BRIEF

**CAMP SEASON**—Opens June 13; Closes Sept. 19. No visitors will be received between June 1st and 13th.

**RESERVATIONS**—Must be made in person or in writing at the Club on or after May 17th, and must be accompanied by check or paid in cash at Club for entire period reserved. No money refunded unless notice is given one week in advance in time for Camp reservation and order for reduced transportation to be mailed to applicant. Make no reservation unless leave of absence has been secured from head of department for period you desire to spend in camp.

**WHO MAY RESERVE**—Only employes, who may reserve for themselves, or their dependent family. An employe may take with him non-dependent members of his family, or a friend or friends to the limit of his tent accommodations. Extra tents will not be provided, and beds will be furnished only if available after employes have been fully cared for. This permission for friends and non-dependents is revokable at any time at the discretion of the management.

**SINGLE EMPLOYEES**—The right is reserved to place two or more single persons in the same tent cottage, the charge for accommodations to single persons only contemplates sleeping accommodations, and no tent will be reserved for the exclusive use of one person, and where two or more occupy a tent the charge will be the same (\$3.50) per week for each person.

**TRANSPORTATION CHARGES**—Passes provided for employes and wholly dependent members of family from any point on system to San Bernardino and return free. Auto Line excursion fare sold on order from the Club, from San Bernardino to Camp and return, \$2.50 for adults; children over 5 and under 12 years of age, \$1.25. Tickets are good both going and returning only on Sundays and Wednesdays of excursion period, except that going portion will be honored on Mondays and Thursdays for employes prevented by duty from going on Sunday or Wednesday. Parties desiring to return on other than excursion days will be required to make an additional payment of \$1.25 for full fare and 65c for each half fare, plus war tax. Order for excursion fare may be issued to employes and dependent members of family only. Where employes are prevented by duty from going on Sunday or Wednesday of vacation period, and desire transportation for the Monday or Thursday following, arrangements must be made in person at the Club and endorsement of such arrangement secured.

**VACATION PERIODS**—Begin and end with Sundays and Wednesdays. No split periods will be

permitted, and full charges will be made even if only a portion of period is used by applicant.

**IF YOU USE YOUR OWN AUTO**—Camp reservation must be secured in the regular manner, and accommodations will be ready for you at or about 1 p. m. of Sunday or Wednesday on which your period begins.

**CAMP CHARGES**—Cottage rent: Single persons, each, \$3.50 week. Family of two or more, \$6.00 week. Only one cottage allowed each family. Where an employe's dependent family numbers more than four persons effort will be made to provide sheltered sleeping accommodations adjoining his tent. "Dependent family" does not mean relatives or friends.

**WEEK-END VISITORS**—Inquire at Club as to whether room is available. If there is, register and get your order. If you are given order, lodging will cost you \$1.00 per person and meals at restaurant 50c for breakfast, 75c each for dinner and supper. Subject to change without notice. The camp does not provide bedding.

**TIME TABLE:**

Leave Los Angeles (Sundays and Wednesdays) 9:00 a.m.  
 Arrive San Bernardino .11:00 a.m.  
 Leave San Bernardino .11:15 a.m.  
 Arrive P. E. Vacation Camp ..... 1:30 p.m.

**BAGGAGE**—The allowance on each adult ticket is 30 pounds and must consist of clothing and bedding. A charge of 1c per pound is made for all over 30 pounds. Fifteen pounds is allowed free on each half fare. Wrap your baggage in a compact bundle and be sure that your name and destination is plainly marked thereon.

**FISHING**—Get your license before going to Camp, also take your own tackle, flies, salmon eggs or other bait.

**HUNTING**—Not permitted at this season, and only for ducks in season. Fire-arms of any kind not permitted. The law presumes that you are hunting if the ranger finds a gun on you. Don't take any with you.

**WHAT TO TAKE WITH YOU**—Comfortable old clothes; comforts, quilts, sheets, pillows and toilet articles, and above all, a cheerful, happy disposition to share with others.

**SUPPLIES**—Everything necessary for your subsistence while in camp may be purchased at the store maintained by the camp. Profit is not sought in the sale of supplies to employes, it being desired only that the camp revenues may meet the cost of operation. Cooked foods may be purchased at the delicatessen or meals taken at the restaurant upon notice sufficiently in advance to the Camp Superintendent.

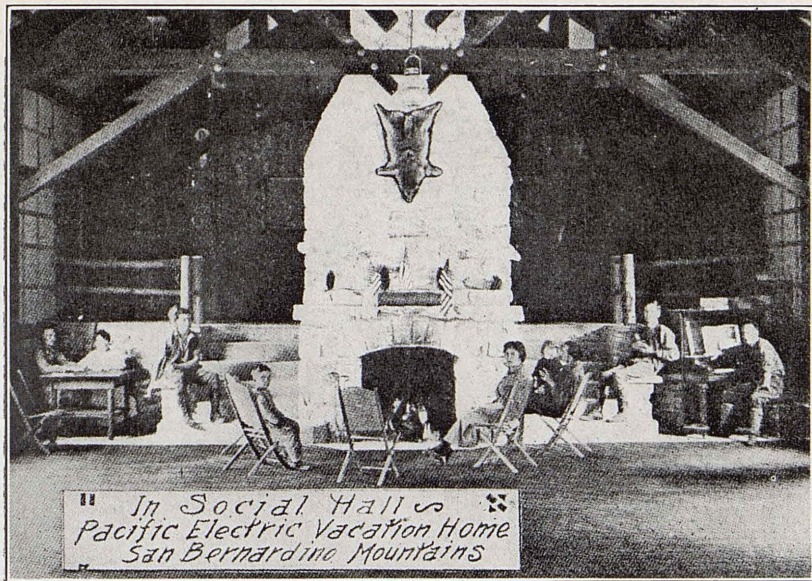
**FOR COMPLETE DETAILS READ ALL OF THIS FOLDER CAREFULLY**

ALL of the Mountain Resorts are beginning preparations for the largest patronage they have ever anticipated, and the indications are that the capacity of all the resorts will be taxed during the 1920 season. This anticipation on the part of the resort owners is due to the fact that more rain and snow have fallen than in the previous five years and as a result, vegetation is much advanced, the streams are much more beautiful and attractive, the trees, ferns and flowers in brighter and better condition than for years and in every respect the hills, mountains and their gems of small valleys have become realms of joy to the lovers of nature, and it is to be expected that thousands of people who have never known their charms before, will this year revel in the beautiful hills.

At our own Vacation Home in the San Bernardino Mountains a large number of employes and their families were entertained last year for varying periods, and few indeed there were of the number who did not have the most enjoyable vacation of their lives. True it is that some did not enjoy it, but the number was small indeed, and when analyzed it would most probably be found that the reason of the non-enjoyment was within themselves. They were not in tune with Nature; or reasonable rational enjoyment would not satisfy; or that they desired to be a law unto themselves regardless of the rights, privileges and enjoyment of others, and selfishness never found happiness anywhere.

The reason for the establishment of our Vacation Home has been told many times, but it will bear repeating for the benefit of many employes who have not heard it. The purpose of this Summer Home for employes and their families is to provide at the lowest possible cost to them a place amid nature's most beautiful surroundings where they may spend a week or two in rest, recreation and social enjoyment under the best possible conditions for healthfulness; to endeavor to make it possible for the





*In Social Hall  
Pacific Electric Vacation Home  
San Bernardino Mountains*

employe and his family to enjoy a mountain vacation each year in a place where every reasonable comfort has been provided, and which to many is not now possible at resorts that are run for profit; to stimulate a better acquaintance and better co-operative understanding between the various members of our corporate family and to further develop our usefulness to each other and to the company of which we are a part.

#### Location of Camp and Its Surroundings

A tract of land approximately fifteen acres in extent has been secured in the San Bernardino mountains, 22 miles from San Bernardino and 1½ miles southwest of Little Bear Lake, the site being bordered on the north by Little Bear Creek, a stream of year-round flow running into the lake. The main road from Pine Crest to the lake parallels the stream and is the proper road to use to reach the camp, although the "Crest Route" may be used from Pine Crest, the traveler turning north at Daly Road, entering the valley about ½ mile from the camp to the south. The best road however is from Pine Crest via Strawberry Flat. Covering the camp site are hundreds of great, majestic pine and fir trees and the surrounding hillsides are carpeted with beautiful ferns. In a canyon to the east of the camp is a natural spring of ice-cold water, the flow year-round being approximately 4 miner's inches, and from this source comes all the water for the use of the camp's inhabitants, and piped to convenient points throughout the camp. A mile and a

half over a good road brings one to the crest of the mountain to the south of the camp, from the vantage point of which one thrills over the view presented. To the north may be seen the desert of the Mojave stretching away for many miles in its barrenness, while to the south, apparently at one's feet, lie the hundreds of square miles of valleys in which are located the cities of San Bernardino, Riverside, Redlands, Corona, Rialto, beautiful by day, but far more so by night when their lights flash out like millions of diamonds. Trails lead off from the camp to many points of interest, not the least of which is the lake, where fishing and boating may be indulged in by those who are for that diversion. The joys of life with-

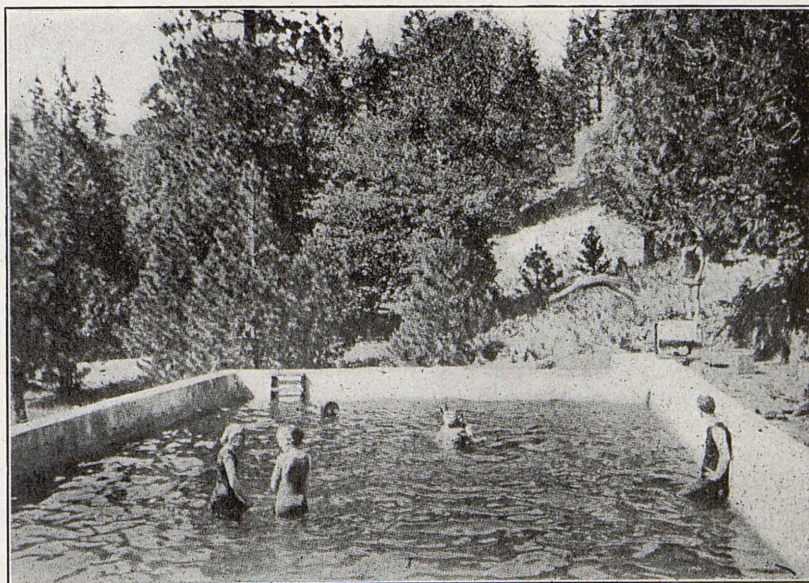
in the camp will be whatever we make it according to the amount of effort and spirit each of us invest therein.

#### Equipment of the Camp

The principal buildings of the camp are the Social Hall and delicatessen store, where food supplies may be purchased, either cooked or uncooked. A lunch counter is also maintained where meals may be had by those who do not care to do cooking. A swimming pool 30x60 feet in size, with water depth varying from 2 to 7 feet, provides much enjoyment for all. Supplies are furnished employes at as low a price as can be made. Tent cottages house the residents, each house 9x12 feet in size and furnished with bed and springs, mattress, wash stand, bowl, pitcher, mirror, slop-jar, and chairs. Each tent cottage is provided with a kitchen equipped for housekeeping as shown in list following:

#### Kitchen Equipment

- Oil stove (3-burner)
- Stew Pans (2)
- Pitcher
- Dipper
- Basting Spoon
- Dish Pan (18 in.)
- Knives and Forks (6)
- Spoons (6)
- Salt Shaker
- Paring Knife
- Broom
- Skillets (2)
- Coffee Pot
- Water Bucket
- Tea Kettle
- Kettles (2)





Garbage Pail  
 Plates (6 enameled)  
 Cups (1-pt. enameled, 6)  
 Kitchen Spoons (2)  
 Can Opener

#### The Cost to Employes

It is certain that the cost to live at the camp, where supplies are furnished with no desire for profit other than to pay the exact expense of camp operation, will enable employes to live cheaply.

At the Camp Restaurant meals may be obtained at 50c for breakfast, 75c each for dinner and supper, subject to change without notice.

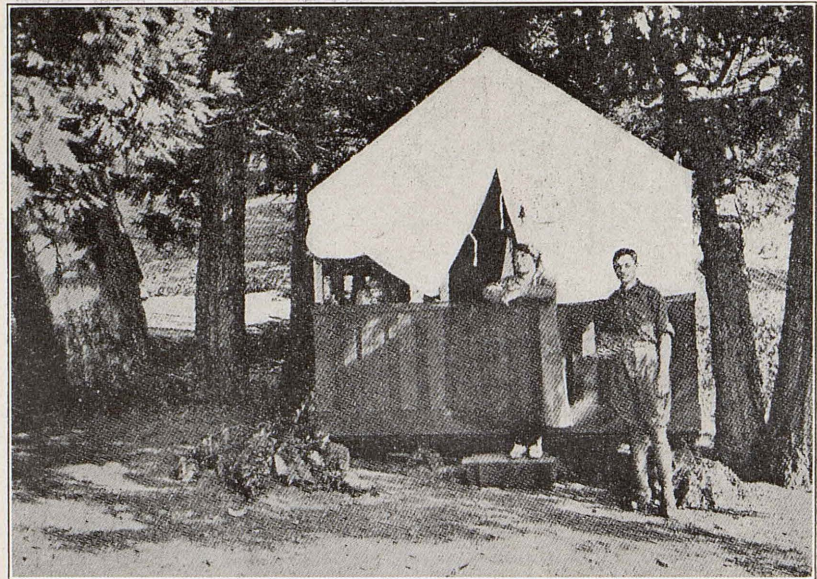
Hot cooked foods may be purchased at the store delicatessen by families and taken to their own tables for consumption. These cooked foods will be furnished at cost of production, and will lessen the work materially to the housekeeper.

#### Cost of Tent Cottages Single Persons (each) \$3.50 per week

No Cottage will be assigned for the exclusive use of any one person. In order to accommodate as many persons as possible, single persons will occupy cottages in groups with single beds. No person under 18 years of age will be admitted to the camp unattended by members of the person's family. When possible, single employes should organize as a group for the vacation and make group reservations.

#### Family of two or more, \$6.00 per week

Where family (all dependent) numbers more than four persons, efforts will be made to provide sheltered



sleeping accommodations adjoining the tent cottage.

Only one tent will be provided for any one family.

#### Non-Dependent Relatives or Friends

Families may include in their vacation arrangements one or more relatives or friends provided additional housing accommodations would not be required and the camp at the time of arrival has or can furnish spare equipment without inconvenience to regular employes. Should it be found advisable, this permission may be revoked at any time by the management.

#### Transportation Cost

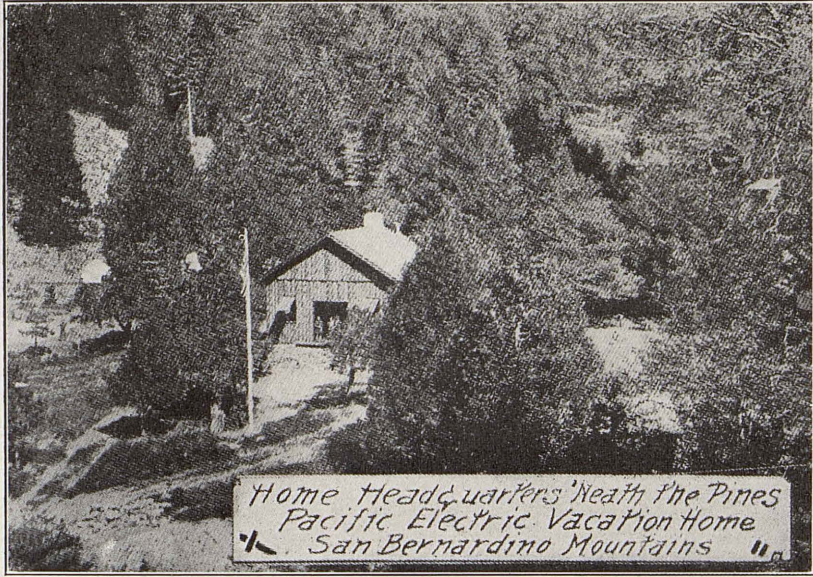
The Company will furnish free transportation to employes and wholly dependent members of their

family from any point on the system to San Bernardino and return. The San Bernardino Mountain Auto Line will sell excursion tickets on order from the Club at \$2.50 for the round trip for adults, and \$1.25 for children over five and under twelve years of age. Children under five years of age free. Tickets are good both going and returning only on excursion days (Sundays and Wednesdays) and on special stage only, except that going trip may be made by employes detained by duty making it impossible for them to leave on Sunday, or Wednesday, on the Monday and Thursday following the regular excursion date; but in such an event special arrangements must be made in advance at the Club and ticket order properly endorsed. Parties desiring to return on other than excursion days will be required to make an additional payment of \$1.25 for full fare and 65c for each half fare, plus war tax. Reduced fares are available for employes and wholly dependent members of family only. Regular fare for all others at \$4.00 round trip; \$2.50 one way. Each passenger on the Auto Stage Line will be entitled to carry not over 30 pounds of baggage free; a charge of 1c per pound being made for all over 30 pounds per passenger, in each direction. Fifteen pounds allowance is made on each half fare ticket. Baggage carried free under these allowances must consist of bedding, clothing and toilet accessories only.

All bundles, packages or other forms of baggage must be securely wrapped, roped and plainly marked







*Home Headquarters 'neath the Pines  
Pacific Electric Vacation Home  
San Bernardino Mountains*

with the name and destination of the owner; brought to Sixth and Main St. Station and placed on platform of car on which you go to San Bernardino. When you arrive there, deliver it to the waiting stage and it will be taken direct to the Camp.

Arrangements have been made with the Auto Line for free transportation between our Camp and Little Bear Lake on surrender of ticket issued at Camp.

#### Free Camp Sites

Where employes have their own camp outfits, space for camping will be furnished free for any period of time the employe desires to stay at the Camp, and supplies may be obtained at the store on the same basis as that offered employes who occupy Camp cottages. All such employes are requested to bring and use their own outfits.

#### Week-End Visitors

If application is made before going to Camp on day before starting, it may be learned whether or not accommodations are available for week-end visitors. In assignment of quarters in Camp, families will have first consideration, single employes second, and occasional visitors governed by the conditions then prevailing. Auto parties of employes who may drive up to spend the day can always rely upon receiving food supplies.

#### What To Bring To Camp

When going to the Camp, care should be exercised to take no surplus luggage. Doing so will result in needless expense to the camper. Bedding should consist of two pairs of

wool blankets and two comforts for each bed, and if sheets and pillows are desired they should be brought. Towels and toilet articles and warm comfortable clothing should complete the list of things needed. The days are warm in the sun, but cool in the shade and an overcoat on most nights is a friend indeed. The altitude is between 5000 and 6000 feet. Bring your own bathing suits. The Camp does not furnish them. Be comfortable.

#### How to Arrange For Camp Accommodations

Reservation of accommodations may be made at any time on or after May 17th for the season which will begin on Sunday, June 13th and continue until Sunday, September 19th, by employes either calling in person

at the Club, 431 South Hill Street, or if employe does not reside in Los Angeles, application may be made by letter, and necessary papers mailed to the applicant, and must be accompanied by check or paid in cash at the Club for entire period reserved. No money will be refunded unless notice is received one week in advance. In writing, address "Manager Pacific Electric Club, 431 South Hill Street, Los Angeles." The Camp will be charted for its accommodations and as a reservation is made the applicant will be given a slip describing the reservation and assignment which **must** be presented at the Camp, and to this assignment will be attached an order on the San Bernardino Mountain Auto Line for reduced fare transportation. This order **must** be presented to the stage line at San Bernardino. No assignment to quarters will be made unless camp order is presented. Excess baggage charge must be paid to the Auto Stage Line direct. **Do not try to make reservations before May 17th.** When possible, reservations should be made in person at the Club.

Camp vacation periods will **begin and end** with each **Sunday and Wednesday**. Party bound for Camp will leave at 9:00 a. m. each Sunday and Wednesday morning from Main Street Station; party returning from Camp will leave the Camp grounds about 2:00 o'clock Sunday and Wednesday, afternoon, arriving in Los Angeles at 7:20 p. m.

**Reservation cannot be made for split weeks.** Vacations must begin and end on Sundays and Wednesdays.

On Sundays and Wednesdays as vacation periods are terminated, camp residents due to leave will pack personal belongings on or before 1 p. m., so that new arrivals may be located as quickly as possible. All utensils **must** be returned to store thoroughly clean and in good condition.



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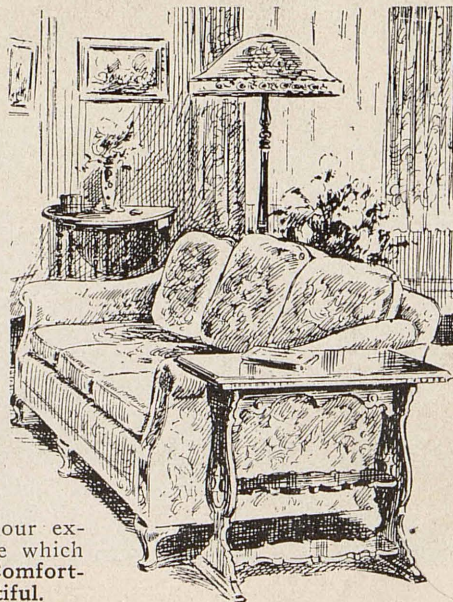
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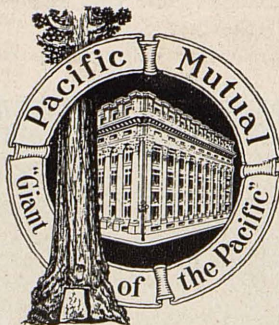


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