

# ELECTRICAL REVIEW

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## Transparencies and Their Future

RECENT applications of electric transparencies indicate a remarkable future for these equipments. But little thought is required to see the breadth of their field compared with more brilliant electric signs. One of the most significant applications is in the motion-picture theater where a clock dial illuminated without glare carries publicity matter of fixed or changing interest. Thousands of places where people congregate are for one reason or another dimly lighted a large part of the time, and here the transparency comes into its own. Without the slightest offense to the eye, or without serious detraction from other interests, electric signs of this type can be used in long-hour business to the advantage of central stations and manufacturers alike. The necessary diffusion or shielding of luminous flux requires substantial expenditure of energy behind the glass or other media employed; this is good for the electrical interests concerned, and it is still worth the cost to the advertiser, because he makes his appeal in locations where the public is peculiarly susceptible to suggestions. It all goes to show how much can be done if discrimination and taste are combined, and we commend to our central-station readers the more detailed consideration of transparency possibilities as further outlet for their energy.

## Standard Voltages for Rural Lighting Plants

IS it desirable, necessary or expedient to introduce equipments and fittings designed for operation and use throughout the country at a potential of 30 to 50 volts on the same basis as the 110-volt and 220-volt systems generally recognized as standard?

The somewhat recent but widespread propaganda relative to small isolated lighting equipments or farm-lighting units driven by gasoline and oil engines presents this question in an acute manner for the immediate attention and consideration of manufacturers of wiring supplies and utilization equipments, jobbers and contractors and inspection authorities as well.

There are two prime reasons why the promoters of farm lighting plants choose to exploit low-voltage apparatus, one being the lower cost of the auxiliary storage battery, and the other being the decreased danger or elimination of shock from accidental contact with or handling of live metal or current-carrying parts of such equipments. These features both conduce to the salesman's advantage, but, on the

other hand, the customer is left to provide his own fixtures and utilization apparatus to be purchased in the open market. In many instances supplies for 30-volt circuits are not available at all, or, if materials at present on the market and considered as standard are used, conditions may obtain which are not only unsatisfactory to the user, but which introduce as well unexpected hazards as to fire.

For example, consider the use of ordinary lighting fixtures wired with No. 18 B. & S. gauge wire with one sixty-fourth-inch rubber insulation subjected to three or four times the current intended or expected when used on 110-volt circuits. Or, take a house or store perhaps already wired with No. 14 B. & S. gauge wire and equipped with No. 18 B. & S. gauge pendent cords, what percentage loss in distribution is likely to result when supplied from a 32-volt system?

And perchance, the farmer's wife aspires to the use of an electric pressing iron or toaster, both of which ordinarily are rated, say, at 660 watts, and would require 18 to 20 amperes for the same service on a 30-volt circuit. Are such devices to be connected to ordinary pull-chain or key sockets attached to fixtures and supplied through fixture wire or flexible cords? The possibilities of serious hazards resulting from such practice call for careful consideration of the voltage of these plants. It is manifest that, if this voltage cannot be raised to that now standard for practically all city lighting systems, a radical change must be made in the wiring installed with the low-voltage plants.

## The Advertising Value of Electrification

THE announcement that the Chicago, Milwaukee & St. Paul railroad is to immediately extend its electrified zone is a significant one in many respects. In the first place, it is the most conclusive evidence that the electrification of trunk lines is economically sound. Practically all of the engineering difficulties which could possibly confront a project of this kind have, in this installation, been met and successfully overcome, and electric motive power has once again demonstrated its superiority.

Another phase which is worthy of particular note is the advertising value of electrification, as has been so forcibly demonstrated during the past few months. The Chicago, Milwaukee & St. Paul, on the completion of its present installation, promptly capitalized on this advertising value by a comprehensive cam-

paign including magazine, newspaper and billboard displays calling attention to the novelty of being transported electrically and emphasizing the comforts and luxury of travel over the electrified zone. Aside from this a great deal of valuable publicity was given the railroad in all of the technical and popular literature of the country, and newspapers generally commented at length on the progressiveness shown by the company and more particularly on the advantages of travel over electrified roads.

While the advertising value of electrification is an intangible item, it is, nevertheless, a feature that should be given serious consideration when the advisability of changing over from steam is contemplated.

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### Engineering Profits in Utility Management

A QUESTION of much interest in connection with the centralized management of public utilities is whether the controlling syndicate should be allowed to make a profit upon engineering services within its own organization for companies under its particular management. The point has arisen a number of times lately, in connection with security issue cases before public regulating authorities, and in one instance at least, the commission has expressed its disapproval of charging a profit on services of this kind. The practice is in vogue among some of the most honorably conducted managing concerns in the business, and it is claimed by their representatives that, inasmuch as the engineering work for the operating companies can be done centrally at a lower cost than when locally performed, or when secured from an outside organization, no reasonable objection can be made to the charging of a fair profit upon such services.

It might be said in passing, that it is not always true that the engineering of a centralized controlling organization is intrinsically lower in cost, for now and then one comes across a local power company or central station whose officers and employees are unusually skilled in engineering. One such recently saved certainly \$100,000 on a \$3,000,000 job through the abilities of its home office, erecting a hydroelectric plant second to none in the territory from the technical standpoint and carrying every detail through from start to finish with an efficiency ordinarily found only in large and highly specialized organizations. But in general, the contention is well advanced that centralization pays in engineering as well as elsewhere; that through the co-operation of many men and many minds, the greater utility achievements of the day are brought to pass. In the purchase of supplies, preparation of specifications and plans, supervision of construction and inauguration of operations, the centralized organization, in general, may be said to be ideal.

What shall be said about the charging of a profit for engineering services? Perhaps the final test of expediency is this: Is the engineering organiza-

tion dealing with itself on both sides of the table, or is it conducting business relations with others? Certainly, where outsiders employ the engineering staff of a centralized organization to perform work, a fair profit for the latter is absolutely proper. Again, when such an organization is asked to perform services for friendly but separate interests, there is no good reason apparent why such work should be done at cost. Finally we come to the case where the engineering organization has a regular part in the management of the utility. The line here is harder to draw, but in the long run, it is probable that a purely nominal profit above the actual total cost of doing the work will prove much the best policy.

Liberal compensation for services cannot fairly be denied, but the making of a profit on such services by virtue of a controlling voice on both sides of the table opens the door to attack, even when such a course is followed by an organization of high character. As the standards of business rise, it becomes clearer where the line is to be drawn between policies formerly unconsidered in relation to professional ethics but which must be tested from many viewpoints in order to measure up to present-day ideals.

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### Developments in Electric Fans.

THE extraordinary demand for electric fans last summer, due to the prolonged spell of very hot weather, depleted the stocks both of dealers and manufacturers of these useful appliances. The makers were therefore confronted with exceptionally difficult conditions, in that special efforts had to be made to restore the stocks of standard lines and this under very trying general manufacturing conditions. Consequently relatively few radical developments in electric-fan design have been announced.

In spite of the difficulties confronting the manufacturers a number of innovations have been made in new types of fans, as illustrated on other pages of this issue. Several makers have improved their lines by the introduction of intermediate sizes, so that while formerly the 8, 12 and 16-inch sizes were practically the only ones available for desk and bracket fans, now there can be obtained desk fans ranging from four inches in diameter upward in over a half-dozen different sizes. The drawn-steel type of frame construction is also being used more extensively. A number of manufacturers, due no doubt to the high cost and difficulty of obtaining brass, have introduced the use of black japanned steel guards and even blades in some instances. This probably will eliminate the tarnishing which so commonly is noticed in desk and table fans. Whether it will prove a popular feature it is too early to say.

At any rate the supply of electric fans is now much more complete than ever before so that it is possible to secure exactly the type of fan required for any particular need. Consequently, it is to be expected that a still greater increase in the sale and use of these appliances will be witnessed this year.