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ELECTRICAL INSPECTORS Association News Letter

Box 54, White Rock, B.C. 970 Burrard St., Vancouver 1, B.C.

Eric Ramsden Co Editors Clarence Dresser

QUESTIONS and ANSWERS

Questions we are getting. Answers we are not.

While we can always come up with an answer - if you insist - it will more than likely not be of the approved variety. Eric says his name is not Landers and you have all heard of invoking the fifty-first ammendment - so.

All communications that require an answer or solution will be presented at the following meeting for discussion and solution if possible.

In this respect when one looks at the impressive array of talented, capable and experienced top level people that we have at our meetings and on our mailing list for this association, one wonders why we should have any problems at all. Maybe we have been overlooking a gold mine of information etc. for want of a little panning.

FROM OUT OF THE WEST

Gentlemen,

Thank you for another instructive and entertaining issue. I would make passing mention of the soubriquet -"hillbilly"- living as I do in the bottom of a ditch, the name seems inappropriate.

There is no foundation to the rumour that some happily located individuals were fearful of being drafted to fill a recent vacancy but I do understand that they have been easier to get along with since the post was filled.

So much for rumour - I have a matter which might provoke a little correspondence to help you fill the pages of your newsletter.

Under the regulations governing the issue of Certificates of Competency, the board has the authority to issue a restricted class of certificate. There are certain instances when I feel this clause could be used to advantage and I would like to see certificates issued under this Regulation in the following cases.

1. Building Contractors, for the installation of temporary power services. A number of general contractors own temporary service poles but may not apply for an"owner" permit to cover installation unless they also own the lot on which the building is being erected.

The result is that the permit by either a local electrician or by the owner of the property, but it is doubtful if either party has any hand in the actual installation. Inasmuch as an individual who has occasion to install several of these temporary services in the course of a year should be competent to do the work, I feel that he should be entitled to do so.

I propose therefore, that a restricted certificate of the "C" class be issued to a bonafide building contractor, provided that the person concerned has passed a simple examination covering the requirements for temporary services. This certificate could be endorsed " Valid only for the installation of temporary single phase construction services of less than 70 amps ". Certificates should be renewable annually.

2. Heating and Air Conditioning Contractors. A similar situation exists with regard to the installation of furnaces and allied equipment. In most cases these contractors have insufficient knowledge of the electrical code to be able to pass the regular examination but are sufficiently conversant with the requirements covering the equipment they install. I see no reason why a restricted certificate should not be issued to such persons, permitting them to connect their equipment to an existing branch circuit panel or switch, once they have passed a simple examination. This would seem preferrable to the existing arrangement whereby an electrical contractor is asked to take out a permit to cover an installation which he may or may not have worked on. It might also reduce the number of installations

which may be undertaken and for which no permit is obtained.

3. Refrigeration. This, again, is a specialized trade having close connections (no pun intended!) with the electrical field and I think the arguments put forward for the heating contractors are also valid here.

I appreciate that this matter has been raised before, but feel that it is worthy of a second look. Perhaps you can solicit the views of others.

Yours truly,
Val Lavender,
Alberni, B.C.

Editors,
Dear Horace Greeley:

"Go west young man" and see what a live-wire pair of journalists we have in our association. Sometimes their spelling is open to criticism but their enthusiasm is to be commended.

Congratulations on your Volume 2 No.3 issue and George Harrower's article on grounding.

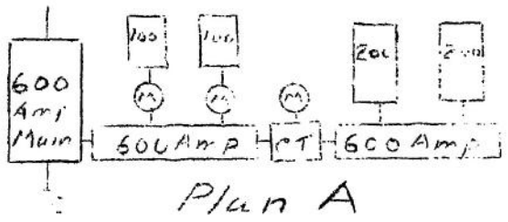
Sincerely,
Short Circuit.

Ed: - Spelling ! - must be that grade 3 typewriter we're using.

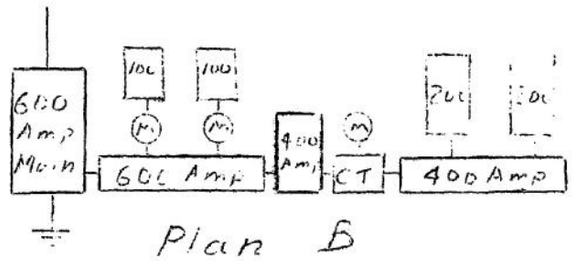
Dear Sirs,

Recently I was confronted with the following two services. Both being submitted for the same installation. I wonder if any Code expert is willing to state which is wrong.

Yours, Bewildered.



Plan A



Plan B

"TWO INSPECTORS GET BOUQUETS"

Quote from the White Rock Sun.

" City building inspector A.F. Everall and provincial electrical inspector Clarence Dresser were praised for their promptness and co-operation by a local builder".

Ed: Sure its braggin but it all helps.

85% of Saskatchewan farms are now electrified.

TIMES HAVE NOT CHANGED

Quote from a Cornwall Ont.paper dated 1883 :-

Electric Light has had its day and, in relation to gas, cannot be considered a formidable rival."

Ed: Methinks this is the Hydro thinking of to-day.

OR HAVE THEY ?

In 1900 38% of cars were of electric powered type.

Total costs of operating an electric car is 8 cents per mile 20% below a conventional car.

I.C.I.A. Reports : -

One of Ye Editors was recently caught with a heavy foot on the gas pedal. Result, one ticket. Now its Phil, Bob and Eric.- UGH

\+ + +

One Van Island inspector allows 5 # 14 in any new conduit Wonder how many he will allow on a rewire job?

\+ + +

One member of Square D had a very late night in Whalley. Was it when his wife south of the border?

\+ + +

The ex radio repairman who wears glasses and is on the City of Vancouver staff will make a great effort to attend our next meeting.

Ed: " Piles " of luck Jack.

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This News Letter has convinced "one working" out of the Royal City Hall that the Association can become a valuable and useful part of the electrical industry.

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DID YOU KNOW

That one $\frac{1}{8}$x1" H.D.C.strap is rated at 200 amperes carrying capacity. That two $\frac{1}{8}$x1" H.D.C. straps $\frac{1}{4}$" apart are rated at 330 amperes.

EDUCATIONAL PROGRAM PAPER No. 3 (b).(Cont.)

GROUNDING vs DOUBLE INSULATION FOR SAFETY

A defect in the functional insulation of the cord or motor can result in contact with the exposed non current carrying metal parts which then become alive. If a conductive path exists through the body of user to ground, a current will pass from the tool through the user to ground. The amount of such current will depend on the resistance of the metallic parts of the circuit in series with the body resistance and the ground resistance. Normally the body resistance including contact resistance is the largest part of the total and hence is the controlling factor in determining the current which will pass through the body. For example, the metallic part of such a circuit could be of the order of 2 ohms, the ground resistance 50 ohms and the body resistance as we have seen may be anywhere between 100 and 100,000 ohms, so that it is this latter resistance which will largely determine the current passing through the body.

From a report on deaths caused by a defective swimming pool fixture it is indicated that when the frame of the fixture is ungrounded and due to a breaking of the glass, the live parts come in contact with the water and dangerous electrical fields can be set up in the water in the vicinity of the fixture, such that a person swimming nearby can receive dangerous or fatal shock without even touching the equipment. Presons swimming five feet away could be shocked and approaching within one foot could readily be killed. However, when the frame of the defective fixture is effectively grounded, the hazard is so reduced as to become negligible except for conditions of actual contact.

This brings us to consideration of the grounding method for reducing electric shock hazards. The method is to provide a metallic circuit from the non current carrying parts of the equipment to ground, the resistance of this circuit being kept so low that fault currents will largely bypass the body of the user; and at the same time will be large enough to open the protective device - (fuse or breaker). By this method the shock is not completely eliminated,,since while the fuse is blowing a voltage can appear on the non current carrying metal parts of about 75 volts or more, with a solid fault, but it will be of very short duration and no danger of the victim freezing will exist. If the fault has a high resistance the voltage will be much lower with consequent reduction of the shock current, but the time will be greater.

The effectiveness of grounding depends to a great degree upon the maintenance of a continuous metallic path to an efficient ground electrode. When you consider that this involves cords, several connections, including such items as squeeze connectors, locknuts and plug receptacle contacts and ground electrodes or water lines of questionable efficiency as grounding mediums, it is not surprising that ground continuity is difficult to maintain and a truly low resistance ground path is a rarity. Never the less, effective or not , it is far better than no safeguard at all, and in the case of water immersed equipment,is the only effective method, provided that it can be properly maintained.

The grounding of cord connected equipment is much more stringently required in industrial plants and construction projects than in homes due to the fact that most homes have dry wood floors etc. Industrial buildings, however, with reinforced concrete floors, steel frames and such other excellent current paths to ground are much more likely to provide a good path through the users body and hence are potentially more dangerous. However with the introduction of more and more equipment into the home that is equipped with electrical equipment such as furnaces and associated ducts and registers and air conditioning equipment and so on the need for more efficient grounding on home equipment cannot be neglected.

This subject will be continued in the next issue with some comments on the value of the use of extra insulation to isolate the live parts of the equipment from the non current carrying parts.