



# THE INSPECTOR

P.O. Box 80479, Burnaby, B.C. V5H 3X9

JULY 1980

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When did your telephone cease to function because of a power outage? "Never because of power outage," says T.A. Fudger, Electrical Manager at Canadian Telephones and Supplies Limited, Burnaby. "That's because there are backup systems behind backup systems. If one source of power breaks down, there's another source available almost instantaneously." He admits a break is technically possible, but so far it hasn't happened.

Fudger has been with the company for 33 years, the last 20 in a supervisory capacity. As the industry became more and more complex, he immersed himself in the technology of "power", returned to school for special subjects and advanced with the company. "Power should be done by power-trained people," he explains. He holds engineering technologist papers. "It's an exciting field to be in."

He remains as much at home on a mountain top checking installation of power equipment as in the electrical shop in Burnaby. Outside of people in communications, relatively little is known about the electrical aspect. That is why we invited Mr. Fudger to submit a piece on his company. Typical of the man, the story arrived on our desk well in advance of the publication deadline.

- The Editor



## AN INTRODUCTION TO COMMUNICATIONS

by T. A. FUDGER, C.E.T.  
ELECTRICAL MANAGER

Canadian Telephones and Supplies Limited personnel install communication equipment and all the related equipment for the telecommunications industry. To meet our commitment to companies involved in supplying private and general communication systems, it became necessary to divide our company into specific departments.

These departments are Administration, Installation, Electrical and Shops Departments. The total staffing to operate these departments is 900 employees.

#### HISTORY

1928 - A company by the name of Independent Sales and Engineering was incorporated. The company was formed primarily as a sales outlet for communication supplies and equipment, along with a small amount of installation. Mr. Linus Q. Trumble was the first president and the business location was 710 Seymour Street.

1930 - I.S. and E. moved to 1920 Wylie Street under the south end of the Cambie Street bridge. The operation expanded to include warehousing and repair of existing equipment.

1932 - I.S. and E. bought out a Toronto company in the same business by the name of Canadian Telephones and Supplies, moved its operation to the West Coast, and operated under that name.

1936 - The company was registered as a provincial company and "B.C." was included in the company name, making it Canadian (B.C.) Telephones and Supplies.

1960 - The company moved from Wylie Street to the B.C. Telephone complex on 10th Avenue in Burnaby. This move increased the shop area, enabling us to provide more services to operating telephone companies.

1964 - The '(B.C.)' was dropped from the company name and re-registered as Canadian Telephones and Supplies Ltd.. (The (B.C.) in our name was confused with B.C. Telephone Company by our suppliers and customers.)

1973 - B.C. Telephone bought out C.T.&S. and we are now a wholly-owned subsidiary of B.C. Telephone Company. Our function has changed very little. We confine our work to communications and solicit work on the open market.

1980 - Our administration office moved to 5050 Kingsway, Burnaby. Our Electrical Department and shops remained at the B.C. Telephone complex on 10th Avenue, Burnaby.

Today we are still a very active company with installation forces in Alberta, Saskatchewan, and Saudi Arabia. Our main forces are in B.C..

#### ADMINISTRATION DEPARTMENT

In any complex organization, there must be a department which oversees production and services. Our administration meets these needs and manages payroll, accounting, and personnel requirements.

#### EQUIPMENT INSTALLATION DEPARTMENT

This department is the backbone of our organization and has the majority of our employees.

The experience and expertise developed in the intervening years is being put to good use. Our teams of experts can respond to specific customer requirements. This may include the installation of a switching system, a microwave system, a military defense system or a custom system to meet a specific customer's needs.

To ensure that we stay abreast of new developments, we have our own employee training school, with facilities open to outside corporations as well. Our experts are prepared to install, repair and maintain almost all types of telecommunications equipment on a contract or cost plus basis, whether it is in Canada or anywhere around the globe.

#### ELECTRICAL DEPARTMENT

This department was developed to ensure that the company would have specially trained industrial electricians, expert in the installation of AC and DC power when required for telecommunications.

Over the years, the demands for service has increased our manpower to over 100 electricians. Now we are required to install, maintain, and repair all AC and DC power installations.

To meet our commitment, we have divided our department into sections. The largest section is our installation force which installs AC and DC power. AC installations range from 12 kilovolt switchboards to 110 volt distribution and AC engine-generator units ranging from 500 watt to 800 kilowatts for prime and standby power. We install and maintain fire detection and suppression systems, telephone booths, and various other equipment associated with communications.

(cont'd)

Further DC installations range from 24 to 230 volts and from 30 amp to 10,000 amp powerboards. Batteries installed are from 60 amphour to 7000 amphour. The average central office uses 24 to 26 - 1680 amphour two-volt cells weighing 368 lbs. each to make up their 50 volt battery strings. Mult-strings in parallel are used to obtain the battery reserve necessary for the office concerned.

Our maintenance section is responsible for routine maintenance and repairs to all AC and DC power installations throughout B.C. Telephone. In our electronic section, we maintain an electronic shop that does warranty repairs, general repairs, and routines on power equipment.

Finally, the section responsible for tool repair and motor winding maintains a shop that does a large variety of jobs. All types of motors are repaired including those which are special in the communications field. This provides very good service in cases of equipment failure. Tools are very important too. Therefore, to save time and ensure quality, we repair our own.

#### SHOPS DEPARTMENT

The level of expertise in our shops department is very high. Therefore, since each shop has particular high standards, I will briefly cover each shop with specific comments.

Our Carpenter Shop manufactures small buildings, some of which are the portable buildings that you see in rural areas. They specialize in custom cabinets and wood products related to the communications industry.

#### PRODUCT NEWS

The Lumicon and the Motorizer, among products on display at recently held Energy Expo, ECA Convention at Harrison Hot Springs, were developed to conserve energy, said W.C. Stewart, International Marketing Manager, Ashlar Industries, Coquitlam.

The Lumicon is a fluorescent lighting dimmer control. The Motorizer is a control device enabling a motor to respond directly to a changing power load. *Look for a story on Ashlar Industries in the October INSPECTOR.*

Our Iron Shop custom builds steel and aluminum relay racks, cable runways, cable grid and all associated connectors.

Our Sheet Metal Shop has the capability to produce various items from sheet metal. They specialize in telephone terminal boxes, fuse boxes, Halon control panels, transit cases and various metal boxes and containers.

Our Tool Repair Shop specializes in maintaining manual tools. We repair amp crimpers, cable spinners, Yale and Town lifts and many miscellaneous hand tools.

Our Paint Shop is a well-equipped shop with water-fall spray booths and large bake ovens. All manufactured items which require painting are sent to this shop.

Our Display and Plastic Shop manufactures the custom displays such as you see in telephone office windows, phone marts, and in home shows displaying telephone equipment.

Since 1936, the year C.T. & S. was first incorporated, telecommunications technology has changed dramatically. The company has grown and evolved right along with these changes to meet the needs of the Electronic Information Age in the 1980s. Today, we are one of the largest telecommunications installation companies in the world. As you can see, we have specialized our company through these departments to make our system as efficient as possible.

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#### HELP FOR THE NOVICE

The success of the early settlers in this country was directly related to their skills in producing food and shelter. Today, numerous people still choose to grow some of their own food and/or build or renovate their own premises. To assist such people, the Electrical Safety Branch of the Province of B.C. has a booklet available with general information for the homeowner. The novice should bear in mind that wiring has to be installed according to the Canadian Electrical Code and must pass inspection. Quite often, the do-it-yourself person requires an extra inspection, which means more work for the inspector.



*Jim Law, Administrator of Safety and Education Activities for*

*the Electrical Safety Branch, Province of B.C. was the recipient of a plaque at the May 26th EIA General Meeting at the Astor Hotel. The plaque marks his service as President of the EIA for the past three years. Jim was instrumental in getting THE INSPECTOR off to a flying start and he continues to lend a guiding hand in getting the news out to members and the electrical community at large. Presentation of the plaque was made by incoming President, Ernie Mortimer. Twenty-six people attended the sit-down dinner.*

#### TOUR TO BE SCHEDULED

A tour of B.C. Hydro's new \$20 million Research and Development Centre that recently opened in Surrey, is being arranged by your EIA executive. You will be notified of the date.

Located at 12388 - 88th Avenue, the centre's 13,000 square metres contains a three-level general laboratories building plus Canada's second largest extra high voltage laboratory. This enables Hydro to carry out research investigations on compact substations and transmission lines as well as insulation evaluation of new and repaired equipment up to a rating of 500,000 volts.

Previously, faulty equipment of this type had to be returned to the manufacturer for repairs and testing, resulting in transportation expenses and costly time delays where foreign-made equipment was involved.

"In the decade of the 1980s, B.C. Hydro's gas transmission and distribution system will expand substantially and the electric system will increase from 7,500 to perhaps 12,000 megawatts", said Dr. Harry Ellis, director of the R & D Centre. "Expansion on this scale will require an average capital expenditure in the order of one billion dollars a year. The anticipated increase in system size and the amount of capital expenditure make it important for Hydro to have a co-ordinated research and development facility to provide adequate technical support and testing services related to system development and operation!"

#### ON THE MOVE

Expansion is proceeding on schedule at the Pacific Region Branch of the Canadian Standards Association in Richmond, says Branch General Manager, Dudley Barnes. He is presently interviewing applicants to enlarge his staff.

CSA is a national organization and is recognized by all the provinces in Canada. A major reason for CSA's good relationship with the various governments is its physical presence in the form of branch offices across the country. The Western Regional office was established in 1970. Others have been operating for over 20 years. They were originally formed as inspection offices to provide more direct service to CSA's clients across North America. Each branch has a mini lab where testing and certification are done. The Richmond office carries out inspections in Washington and California, as well as British Columbia.

#### INSPECTOR ALERT

Some inspectors are having problems with pad-mounted transformers on residential developments. Rezoning by the municipalities to provide higher density building and consequently smaller lot sizes has contributed to the problem. The developer is left with less and less space to turn around in; sometimes a residential wall will encroach on the two-and-one-half metres of space required by the Code to separate house wall and transformer. Once the building is up, Hydro requires a masonry non-combustible wall to be built between the two. This is a costly remedy and could be avoided by greater attention to planning and design in the early stages of development.

The Provincial Government of B.C. sponsored a dinner Thursday, June 26th, at the Empress Hotel, Victoria, to pay tribute to members of the Committee for work done on Part I of the Canadian Electrical Code of the Provincial Electric Wiring and Standards Equipment Advisory Committee.

Oldtimers from the electrical industry present were former Chief Electrical Inspectors of the Province, Mr. Lance Robson and Mr. George Harrower, accompanied by their ladies.

Jack Heinrich, Minister of Labour, addressed the delegates after dinner. Appreciation for the Government's hosting of the dinner was expressed by Jean Rouseau, Chief Electrical Inspector, Province of Quebec.

## CONTRACTS FOR B.C. COMPANIES

Four more companies have been awarded contracts totalling over \$3 million by B.C. Hydro for work on the new 500 kilovolt Cheekye-Dunsmuir power transmission line from the mainland to Vancouver Island. The line is scheduled to meet increasing demand for electric power on Vancouver Island, the Sechelt Peninsula and the Powell River area by the fall of 1983.

Hallcraft Construction Co. Ltd. of Surrey, B.C. has a \$1,489,000 contract for site preparation and civil work for the Cheekye substation. Located about 10 kilometres north of Squamish and just west of Highway 99, the substation will be the mainland terminal of the \$808 million transmission line.

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## INSPECTION HEADED FOR CHANGE?

ECA General Manager, Ross Kinneard, speaking to the General Meeting of the Electrical Inspectors Association of B.C., said ECA supports compulsory Tradesmen's Qualifications; the IBEW shares the same view, along with many inspectors.

With reference to change, Kinneard pointed out the following:  
-staff in most organizations tend to reflect the philosophy of those in the organization holding the most authority;  
-in most of us there is a built-in resistance to change;

-the longer we live with the system, the less we want to encourage a change in the status quo.

"But," said Kinneard, "progress cannot be delayed forever."

He wound up on an optimistic note: "The public and contractors should be aware and grateful that we do have in this province a dedicated and skilled group of people, whose objective of increased public safety deserves the support and co-operation of everybody."



Some EIA members at the May 26th General Meeting held at the Astor Hotel. Head table, from left to right: Jim Law, Ernie Mortimer, Joe Laminski, Ross Kinneard, and Andy Robertson.

Hallcraft submitted the lowest of nine bids ranging up to \$2.2 million for the work at the Cheekye site. The firm is expected to begin work this month and complete its project in March of 1981.

Cedardale Tree Services of Richmond and L & M Clearing Ltd. of Vancouver have contracts of \$533,000 and \$344,000 respectively to clear transmission line right-of-way on a 15 km section between Squamish and Woodfibre. The two companies will begin work this month and complete their contracts in November, 1980. There were bids from 11 contractors for the work. Contracts will be awarded later for sections of the line from Woodfibre to Pender Harbour, on Nelson Island and on Texada Island.

J.R. Edgett Excavating Ltd. of Comox, B.C. has a \$750,000 contract for road improvements on Texada Island preparatory to work on cable landing sites and a shunt reactor station on Texada. Five bids ranging up to \$1.8 million were received for the Texada work which includes clearing, up-grading of existing roads, excavation of drainage ditches and installation of culverts. Edgett will begin work this month and completion is scheduled for October, 1980.

Material and equipment such as steel, conductor, circuit breakers, reactors, and other substation apparatus have been and are continuing to be ordered by Hydro for the transmission project.

Edco Construction Company of Vancouver is on schedule with site preparation work at the Malaspina substation about 53 km north of Sechelt on the east side of Highway 101.

Hydro's own construction forces are working on site preparation for the Dunsmuir substation on Vancouver Island.

In response to an invitation from Ross Kinneard, ECA Chapter meetings will now have one electrical inspector in attendance. It was felt that this would be a progressive step in the relationship between inspectors and contractors.

Inspectors taking part will be drawn from the EIA executive and will take turns attending the ECA meetings.

## THE EIA WELCOMES NEW MEMBERS

Gerry Armstrong is the new District Electrical Inspector for Port Coquitlam. This was a lateral transfer for Gerry from Dawson Creek and he and his wife are very happy to find themselves in an area that abounds with so much outdoor activity. He says winters are long and summers short in Dawson Creek; Coquitlam is in the Banana Belt in comparison. Is the weatherman listening?

Ron Dewick joins the electrical inspection staff of the Corporation of Burnaby after thirteen years as an electrical contractor in Surrey where he still resides.

Jack Mills, our new associate member, is Regional Manager of Sylvania Electrical Equipment in Richmond. He has been involved with the electrical industry for the past 26 years and for seven of those years, taught the Code to IBEW journeymen electricians at Vancouver Vocational Institute. He holds an electrical contractor's Class A certificate of competency.

### CONSUMER ALERT

Dry saunas and wet saunas are two different animals. It behooves the homeowner to distinguish between them and to treat each according to its merits. If you have a dry sauna and ladle water onto the elements, you not only cut short the life of your appliance, through rust and corrosion, you may cause a short circuit resulting in a fire.

## NEWS OF THE INDUSTRY

Electrical inspector, Eric Duff, of New Westminster represents the EIA of B.C. as the alternate member on the Electrical Wiring and Equipment Standards Committee. He replaces Chief Electrical Inspector Don MacIntyre of Surrey who has a long work record of service in the EWESC.

Eric Box, previously an electrical inspector, is now working part-time as an organizer for the Electrical Contractors' Association's Prince George Chapter.

# INDUSTRY NEWS (continued)

## MEMBERSHIPS

### PUBLIC HEARINGS FOR THE INDUSTRY

A proposal to combine all electrical trades into a single trade to be known as "Electrician" was the subject of Public Hearings held throughout the Province during the month of June. The Hearings were arranged to give every concerned person a chance to input before any decisions were made.

The final hearing, June 25, at the Sheraton Villa, Burnaby, drew over 100 people from a cross section of the Electrical industry including Labour and Management. Claude G. Heywood, Chairman, Provincial Apprenticeship Board said numerous phone calls by private citizens and the retail trade as well, indicated their concern with proposed changes to the act.

Among those submitting briefs were B.C. Railway, IBEW, ECA, EIA, IWA, BCT, CT&S, Interior Forest Labour Relations Association, Pulp & Paper Industrial Relations Bureau. Society of Engineering Technologists... Along with Chairman, Heywood, those in attendance at the Provincial Apprenticeship Board at the Villa were L.T. Truesdale, Alexander Brokenshire, Donald Fearey, Betsy McDonald, B. Jennings, Wymann Trineer, Jim Gray, Victor Traynor.

Results of the Hearings will not be available until all submissions verbal and written are evaluated and made public.

Over 200 delegates attended the ECA of B.C. Annual Convention held at Harrison Hot Springs in May of this year. EIA members attending were Mr. Al Luck, representing the Province as Chief Electrical Inspector of B.C., and Mr. Joe Laminski, attending as the EIA Vice-President. Mr. Wilf Lawson, Executive Director of Safety Engineering Services was also in attendance.

Highlights of the convention were the election of ECA's 21st president, Stuart MacMillan, a partner in Stu's Electric Limited, Kamloops; and the presentation of plaques to each of 14 past presidents.

CONTRACTORS, ENGINEERS, ELECTRICAL INSPECTORS, SUPPLIERS, and others interested in the Electrical Industry are invited to join in on an opportunity to promote uniform understanding and application of the Canadian Electrical Code and to increase cooperation between inspectors, the electrical industry, and the public.

Application for renewals or new memberships in the EIA should be sent to,

Electrical Inspectors Assoc. of B.C.  
P.O. Box 80479  
S. Burnaby, B.C. V5H 3X9

Applicants Name: \_\_\_\_\_

Address: \_\_\_\_\_

	Renewal	New Membership
I have enclosed \$15.00 as an Inspector Member	<input type="checkbox"/>	<input type="checkbox"/>
I have enclosed \$20.00 as an Associate Member	<input type="checkbox"/>	<input type="checkbox"/>

1980 Membership Cards will be returned with Dues Receipts.

- I require a membership pin.
- I require a certificate of membership.

Lack of response means Konsensus Korner is no longer with us. "Thank-you" go out to Chuck Moon, Denis Lessard and others who originated the exercise and to those of you who participated.

OCTOBER 01, 1980

Circle this day on your calendar. It is the implementation date for the new Code - the 13th Edition of the Canadian Electrical Code and B.C. Amendments.

## I.A.E.I. ANNUAL MEETING

The 4th Annual Meeting of the B.C. Chapter of the I.A.E.I. was held in conjunction with the 27th Canadian Section I.A.E.I. Annual Meeting at the Empress Hotel in Victoria, B.C. on Friday and Saturday, June 20 & 21, 1980.

The theme of the meeting was "Participation" and following this theme, the ladies were invited to attend the Friday morning session which included the welcome to the Province of B.C. by Mr. Hugh Bardon, the Assistant Deputy Minister of the Ministry of Labour of the Province of British Columbia and from Alderman William McElroy, who welcomed the delegates and their wives to the City of Victoria on behalf of the Mayor.

Following the opening ceremonies, the delegates and their ladies were impressed by a very vivid demonstration of the safe use of electricity presented by Mr. Claude Haggard. This demonstration was very impressive, including participation by the daughter of one of the delegates and Chairman Dennis Burke's wife, Willa, on the effect of static electricity and induced voltage which made the young lady's hair stand on end and lit up fluorescent fixtures held by Mrs. Burke and suspended in the form of a circuline halo above her head. This was followed by a double-decker bus tour from the Empress Hotel to the Oak Bay Beach Hotel, where an excellent buffet luncheon was served to both delegates and wives. In the afternoon, very convincing talks were delivered on the subject of "Inspectors, Who Needs 'Em'" by Ross Kinneard, General Manager, ECA of B.C. and Roger Niedermeyer, Chief Electrical Inspector for the City of Portland. An illustrative talk by Eric Wilkins of CSA on Fire and Electrical Accident Investigations completed the business for Friday.

The evening's activities consisted of a dinner and dance which was held in the Crystal Ballroom of the Empress Hotel and where a good time was had by all.

On Saturday morning the delegates convened for the annual meeting of the B.C. Chapter and of the Canadian Section.

A total of 147 delegates and wives attended the convention, which included the International Chairman of the I.A.E.I., Bob Sappington; the Executive Director of the I.A.E.I., Bill Summers; the Chairman of the Canadian Section of the I.A.E.I., Mo Polansky from CSA in Rexdale, Ontario and the in-coming Canadian President, John Waller of Ontario Hydro.

This was the first Canadian Section Annual Meeting held west of Ontario and included Electrical Inspection Delegates from as far away as Halifax, Nova Scotia (where the next Canadian Section Annual Meeting will be held), with good representation from Ontario, Winnipeg, Saskatchewan and Alberta and from Washington, Oregon, New Orleans and California. The Chairman of the Convention Committee was Dudley Barnes, the Manager of CSA's Pacific Region and the Co-Chairman was Dennis Burke, Electrical Inspector for the City of Victoria, who, as Chairman of the B.C. Chapter, together with the members of his Committee, presented one of the best organized and well received Canadian Section Meetings as evidenced by the many favorable comments from those who attended. Mr. G. W. (Wilf) Lawson, Director of Safety Engineering Services of the Ministry of Labour for the Province of British Columbia, who is also the Third Vice-President of the I.A.E.I., thanked the Chairman for an excellent convention, which truly enabled all present to contribute to the success of the theme of the meeting - "Participation".

.....end of the line





NG: TO BE USED

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