

# Fire Protection In Rural Areas

BY DEWAYNE E. NOLTING\*

WHEN fire destroys the lives of 347 men, women and children and consumes over twenty-one million dollars' worth of property in one year, as it did in Canada during the year 1936, there should be no question in the minds of public officials as to the important part played by fire protection in both urban and rural communities. The following is an analysis of the Canadian fire loss in 1936, and a brief account of the successful practices in the States in combating the rural fire loss, with suggestions as to their further adaptation in the provinces.

## Analysis of the Fire Loss

Table I, page 59, shows the number of fires and the fire loss in all the provinces last year as compiled from statistics furnished by J. Grove Smith, Dominion Fire Commissioner. While the number of fires per 10,000 population in the Maritime Provinces averages less than that in other provinces, the per capita fire loss is slightly higher. Over 50 per cent of the 42,644 fires in Canada last year involved losses of less than \$25 each. More than one-third of the total fire loss of \$21,549,484 resulted from fires causing losses between \$1000 and \$5000 each. Out of 37 fires resulting in losses over \$50,000 each, five occurred in the Maritime Provinces—three in Nova Scotia and two in New Brunswick. In comparison to the Canadian figures, estimates for the United States in 1936 show 52.4 fires per 10,000 population and a per capita loss of \$2.47.

Approximately 75 per cent of the 42,644 fires occurred in residential properties. According to information issued in April, 1936, by the Dominion Fire Prevention Association, a survey covering the 10-year period from 1926 to 1935 indicated that there was one fire in

every sixth dwelling in Canada and an average loss in each fire of \$630. On the basis of data supplied by the provincial fire marshals of New Brunswick and Ontario, there were about four times as many urban dwelling fires as rural dwelling fires last year in Canada. The total losses in the two classes, however, were approximately the same. In other words, when a fire starts in a rural dwelling, the chances are that the loss will be four times as great as a similar fire in an urban dwelling. The obvious reason for this is that rural dwellings are generally some distance from a fire department and therefore burn down, while in cities more adequate fire fighting facilities are close at hand. In addition to dwelling fires, there were 3,526 fires in other farm property last year resulting in a loss of nearly three million dollars. About 44 per cent of the total Canadian fire loss occurred in rural districts, and an additional 12 per cent occurred in villages under 1000 population.

That progress has been made in fire prevention and protection in Canada is indicated by the gradual reduction in the total fire loss of \$47,117,334 in 1931 to less than half that figure in 1936. However, the deaths due to fire have shown an increase from 251 in 1931 to 347 in 1936. Through more adequate protection in the rural areas, it appears reasonable that losses could be reduced much further. In addition to adequate protection against fire, fire prevention education is necessary to encourage people to exercise care in their daily activities so as to keep fires from starting. Table II indicates that common carelessness is responsible for the majority of fires.

## Rural Fire Protection in the States

The first consideration in rural fire protection is the organization, equipment, and maintenance of a fire department and some arrangement such as by tele-

\*EDITOR'S NOTE: DeWayne E. Nolting, B.S., M.S. in Public Administration, is Field Engineer of the National Fire Protection Association, Boston, Mass.

Table I.  
Comparison of Fires and Fire Losses in the Maritime and Other Provinces During 1936.

| Maritime Provinces     | Population | Number of Fires | Fires per 10,000 Population | Fire Loss    | Fire Loss Per Capita |
|------------------------|------------|-----------------|-----------------------------|--------------|----------------------|
| New Brunswick.....     | 435,000    | 935             | 21.7                        | \$ 885,644   | \$2.04               |
| Nova Scotia.....       | 537,000    | 1,218           | 22.9                        | 1,246,767    | 2.32                 |
| P. E. Island.....      | 92,000     | 208             | 23.1                        | 164,141      | 1.78                 |
| Total.....             | 1,064,000  | 2,361           | 22.1                        | \$ 2,296,552 | \$2.15               |
| <b>Other Provinces</b> |            |                 |                             |              |                      |
| Alberta.....           | 772,000    | 1,501           | 19.5                        | 1,098,889    | 1.43                 |
| British Columbia.....  | 750,000    | 2,659           | 35.4                        | 1,689,718    | 2.25                 |
| Manitoba.....          | 711,000    | 2,045           | 28.8                        | 846,283      | 1.19                 |
| Ontario.....           | 3,690,000  | 14,782          | 40.0                        | 7,867,483    | 2.13                 |
| Quebec.....            | 3,096,000  | 17,949          | 58.0                        | 6,645,210    | 2.15                 |
| Saskatchewan.....      | 931,000    | 1,347           | 14.5                        | 1,080,925    | 1.16                 |
| Not Reported.....      |            |                 |                             | 24,424       |                      |
| Total.....             | 9,950,000  | 40,283          | 40.5                        | \$19,252,932 | \$1.93               |
| Total, Canada.....     | 11,014,000 | 42,644          | 38.7                        | \$21,549,484 | \$1.95               |

Table II.  
Causes of Fires in Canada in 1936\*

| Cause   | Number of Fires | Property Loss |
|---|-----------------|---------------|
| Smokers' carelessness.....                    | 11,797          | \$ 2,772,934  |
| Stoves, furnaces, boilers and pipes.....      | 4,738           | 2,767,208     |
| Defective chimneys and flues.....             | 4,562           | 2,363,079     |
| Electrical wiring and appliances.....         | 3,901           | 1,285,763     |
| Sparks from chimneys on roofs.....            | 2,119           | 937,671       |
| Hot ashes and coals.....                      | 1,422           | 363,474       |
| Petroleum products and other volatiles.....   | 923             | 592,116       |
| Sparks from open fires.....                   | 907             | 103,259       |
| Portable lamps, lanterns and open lights..... | 699             | 44,486        |
| Exposure to adjacent building fires.....      | 547             | 743,520       |
| Children with matches.....                    | 546             | 139,028       |
| Lightning (buildings not rodged).....         | 342             | 167,132       |
| Incendiary (supposed).....                    | 214             | 1,248,053     |
| Fireworks.....                                | 206             | 31,247        |
| Hot grease, oil, wax, asphalt, etc.....       | 183             | 64,002        |
| Spontaneous ignition.....                     | 116             | 201,429       |
| Miscellaneous known causes.....               | 851             | 1,106,358     |
| Unknown causes.....                           | 8,571           | 6,618,725     |
| Total.....                                    | 42,644          | \$21,549,484  |

\*Condensed from data supplied by J. Grove Smith, Dominion Fire Commissioner.

phone for the prompt turning in of an alarm. Also, proper training in fire fighting and fire prevention should be provided the volunteer firemen. The second consideration is provision for adequate water supplies near each farmer's property for fire fighting purposes. Obviously every farmer in a certain rural area must be sold on the idea of rural protection to obtain his wholehearted cooperation. It is true that each farmer can do much to provide protection

for himself such as having fire extinguishers handy in the house, barn, and other farm buildings. If the fires are discovered soon enough they can be stopped before they do much damage. Too often, however, rural fires get a head start before they are noticed, and unless the farmer has made some definite arrangement beforehand to have a fire truck arrive upon the scene in short order, and there is plenty of water near at hand to pump on the fire, the chances

of saving his property from complete destruction are pretty slim.

Thousands of rural areas in the United States have within the past 20 years made definite arrangements of some sort or another for fire protection service similar to that enjoyed in urban areas. There are now approximately 12,500 volunteer fire departments in cities and towns of less than 10,000 population. The importance of these departments is evident from the fact that 60 per cent of the annual fire losses in the States occur in rural sections. Experience indicates that excellent results in saving life and property from destruction by fire have been obtained wherever such departments have been established on a reasonably efficient basis.

In many communities throughout the States farmers make arrangements with nearby towns or villages to provide them with protection in case of fire. It isn't good practice for small town fire departments to send their only fire truck far beyond the town boundaries. The people of the town pay for this service and they shouldn't be expected to run the risk of having their truck 10 or 15 miles out in the county when a fire starts in their own town property. One practical solution is for the farmers in a designated area such as a township to raise money to buy a piece of apparatus and have the town fire department maintain and man it for them. Town officials are usually glad to do this because they can also use it at their own fires, and for rural runs they can send only a few of their firemen with the apparatus. The farmers themselves supplement the fighting force according to a prearranged system.

There are many other possible schemes. Typical arrangements could be cited for every state. In an Iowa town the town council cooperated by purchasing a community truck and forming an organization which the farmers joined for \$25, entitling them to free service. Farmers who were not members and called for help were charged \$75 for making the run.

In a Minnesota community a village

and the surrounding farmers organized and incorporated to provide fire protection. The farmers bought a total of \$2000 in shares at \$15 each (one share per farmer), and the village bought \$1000 worth. Service is free to members and no service is rendered to non-members.

After a disastrous rural fire in a Maryland county, a county committee was organized to raise money for a rural fire truck. The county commissioners and the town council of the county seat pledged \$500 each, and the rural residents pledged \$4000. The truck is housed at the county seat and manned by its volunteer fire department, and the town council and the county commissioners share the cost of maintaining it. The truck is sent to any part of the county. This is an agricultural county with only one other town besides the county seat that has a fire department and equipment, and before this set-up was put into effect the county outside these two towns had no protection at all because the volunteer firemen were prohibited from answering rural calls.

Farmers within an eight-mile radius of a small town in Wisconsin contributed toward the purchase of a truck at the rate of 50 cents per \$1000 assessed property valuation. The volunteer fire department in the town takes care of the truck and takes it to farm fires. The department makes a small charge for their work which is based on the number of hours worked and the number of men responding with the truck.

Within the past 15 years scores of communities in Michigan have organized for fire protection. The usual arrangement is to purchase a special rural fire truck with the farmers paying part of the cost, or paying a small upkeep fee—or combination of these, and to let the city or village fire department take care of it and supply the service. In a few counties, the county-seat city and the county supervisors divide the initial cost and maintenance cost of the truck which serves the entire county. Many Michigan communities have purchased a truck by collecting contribu-

tions from farmers in proportion to the amount of property to be protected. After buying the truck, arrangements are made with the nearby towns to provide them with 24-hour fire protection service. The town is benefited because it can use the truck when needed to help fight its own fires.

Financing rural fire protection by popular subscription and holding fairs or entertainments to raise funds does not always work out successfully. It is recommended that control of a rural fire department be in the hands of a governmental unit such as a county, township, or special district incorporated for the purpose so that the project may be supported by a tax levy. Probably the majority of rural fire departments are financed in this way. The matter of providing water supplies such as ponds, water holes, cisterns, wells, creeks, etc., from which the pumper can take suction to quench fires is generally the responsibility of each farmer. Adequate training of volunteer firemen in the best and newest methods of fighting and preventing fires is developing rapidly in the States. Thirteen years ago there were only two state schools, while last year there were over 400 state or regional schools to which firemen could go for a few days in the summer. A few schools were held in Canada, but a much larger number is desirable in order to reach the volunteers in the rural communities.

### Conclusions

Each rural community should decide for itself how to provide proper protection, and whether to organize and equip their

own department or to contribute to the support of an existing town or village fire department for rural service. A number of states have laws on how rural fire departments may be organized and financed. No doubt there are similar laws in the provinces, and any community considering the organization of a rural fire department should thoroughly investigate the various schemes now in operation. Carefully prepared information on the best methods and the best types of fire protection for rural areas has been issued by the National Fire Protection Association (60 Batterymarch Street, Boston, Massachusetts) and is available without charge to anyone interested in organizing a rural department. The provincial fire marshals, the dominion fire commissioner, the Maritime Fire Chiefs' Association, provincial fire underwriters' associations, and similar officials and organizations are interested in establishing more adequate rural fire protection and local public officials should secure their assistance in developing any plan.

Just as cities and towns have found it their public duty and well worth their while to expend funds for fire protection to prevent the destruction of their property and the lives of their citizens, so have rural communities. Once a barn full of dry hay catches fire it burns so fast that it may be too far along to check it unless a truck is there promptly and has plenty of water to use. Most of the hundreds of rural people burned to death and the millions of dollars in rural property destroyed each year in Canada can be prevented.