Fire Inspection Pays!

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eral groups: (1) Faulty construction, (2) personal carelessness and (3) extraneous and miscellaneous causes.

**Faulty Construction**

An analysis made in our study showed that where the causes are known, faulty construction accounted for 85 percent of the waste from fires; personal carelessness, 11 percent; and extraneous and miscellaneous causes, 4 percent.

A trained inspector can spot faulty construction. If this is corrected, we avoid a fire. This largely accounts for the decline in loss by fire of Iowa farm buildings.

Here are the kinds of things which trained inspectors find might result in fires if not corrected: Cracks or holes in chimneys, or chimneys falling apart because of mortar failing to hold, defective heating systems, sparks allowed to fall upon easily ignited roofs, and no lightning rods or defects in the lightning rod system. Defective flues and heating systems can be found easily by a trained inspector as can also split, frayed or curled shingles which ignite easily. Correction of these possible fire causes is not so much a matter of knowledge as it is of getting people to do something about them.

A non-clogging spark arrester, developed in connection with our study, will prevent sparks from the chimney falling on roofs which are in questionable condition. Properly installed lightning rods provide almost perfect protection against fire from lightning. Inspectors have taken pains to see whether or not the lightning rods and cables were properly installed and in good condition.
This fire started from a cracked chimney. Regular inspection can easily locate this kind of hazard so that it can be corrected before it has caused the house to burn.

Loss From Other Causes

The fires that start from causes classified as "extraneous and miscellaneous" are such as those that spread from adjoining buildings on fire; those set by man and those of miscellaneous causes coming from the outside. Causes of this kind, of course, cannot be prevented by inspection.

Among the causes of fires from human carelessness are: Careless handling of flammable liquids such as gasoline and kerosene; oil and gasoline stoves; matches; smoking; and spontaneous ignition of oily rags. These fires are unnecessary but cannot readily be prevented by inspection.

Oil and gasoline stoves have been placed in this group of causes. Even though the stove may appear to be in good condition when it is inspected, if it is not properly cleaned, if the operator is careless in filling it or if its construction is faulty in a way that may not easily be detected on inspection, the stove may cause a fire.

Our study showed clearly that the main causes of the fires on farms were from faulty construction—all causes that could be corrected. Furthermore, our study showed that the fires which resulted from faulty construction were the costly ones. In the 15-year period from 1930 to 1944, dwelling fires resulting from human carelessness cost their owners $1,484 each; those resulting from extraneous and miscellaneous causes cost $1,750 each; those from defects in construction cost $2,190 each.

Inspection Aids Prevention

A complete fire control program includes two distinct operations. The first is prevention. If this part of the program could be made 100 percent effective there would be no need for the second part, which is to put out the fire. One need not worry about being able to STOP a fire which never STARTS.

Prevention involves several problems. The removal of con-
struction hazards was given first consideration not only because it resulted in the largest waste but also it appeared more easy to handle. The sponsoring organizations, composed almost exclusively of Iowa farmers, provided an inspection service at very low cost to the county mutual fire insurance associations of Iowa. This inspection was carried on first by Earl D. Anderson and later by L. G. Keeney.

Thousands of hazards were discovered and many corrected on the job by inspectors. From a modest beginning, the inspection service grew rapidly until it was curtailed by the manpower shortage during the war. The accompanying summary prepared by Mr. Keeney, now secretary of the Farmers' Mutual Reinsurance Association, shows the many hazards found in the inspection work.

Mr. Keeney has also indicated that extensive repairs were made after the inspectors left and that reinspection several years later showed the property was maintained in good condition. Mr. Keeney has this to say:

"Nearly 10,000 farm dwellings were inspected in 1940. Thirty-nine percent were found to have wood shingle roofs in hazardous condition. Sixty-five percent of these hazardous roofs were protected by spark arresters which were actually installed by the inspectors. The 1944 summary shows only 21.4 percent of the dwelling roofs to be weathered and in danger of roof fires. The inspectors corrected 63 percent of the hazardous roofs found in 1944.

Country dwelling fires have decreased markedly and consistently since 1936, as this graph shows.

Here are the remains of a "fireproof" farm dwelling the morning after it burned down. House fires account for 7 out of each 10 dollars loss.

This fire, the result of a spark lighting on weathered shingles, is one of the most common causes of the fires of Iowa farm dwellings.

"In 1940 the inspectors found 26 defective chimneys for each 100 dwellings inspected. In 1944 the percentage dropped to 15.2. We have no record of chimney repairs actually made by the inspectors. We are finding that the percentage of defective chimneys is nearly as high now as in earlier years, in localities where inspections were not made previously. In 1944 the inspectors completed several jobs which had been inspected previously. In other words, the reduction in the number of defective..."
Lincoln Soybeans Lead

INCOLN soybeans are pleasing the first farmers who tried them. This is shown in a survey made of the 115 growers in the southern two-thirds of the state to whom seed was sent in 1944.

There were 54 of these men who reported on comparisons in yield between Lincoln and other varieties they had been growing. Of these 54, 47 said the Lincolns out-yielded their home-grown varieties in 1945. The average advantage was about 5½ bushels an acre. This is approximately the same difference as obtained in tests at the Iowa Station.

The average yield of the Lincoln soybeans was 31.4 bushels an acre and of the home-grown varieties 25.8.

In ability to stand up, or lodging resistance, about half of the 51 who reported said the home-grown variety stood up better than Lincolns. There were 7 who said Lincoln was superior in lodging resistance and 19 farmers could see little difference. The results and reports of these farmers agree pretty well with the results of the Station.

All of the growers were pleased with the Lincolns in 1945, and 86 percent said that in their opinion Lincolns would replace all other varieties of their areas of the state. The remaining 14, while having a good opinion of the Lincolns, felt that many growers would continue to plant a portion of their soybean acreage to varieties that mature earlier than Lincoln.

More than 21,000 bushels of seed were produced by the 73 growers in 1944 who gave rather accurate data on the way they sold or disposed of the crop. These men said that they kept 19 percent for their own planting, sold 63 percent to neighboring farmers, 13 percent to growers outside the neighborhood and 3 percent to concerns for resale in Iowa. Only 1 percent was sold outside the state.

The farmers who got seed in 1944 had agreed to sell at least 50 percent of their crop to neighboring farmers for planting. They actually sold 63 percent and kept 19 percent for their own planting.

Collect Less—Surpluses Up

If the measures of results accomplished are essentially accurate, it is to be expected that they should be evident in the business experiences of the county mutual insurance associations of the state. The accompanying chart shows this rather strikingly. These figures are shown in terms of dollars per thousand at risk to eliminate complications arising from the total coverage. The total income of the county mutual insurance associations has dropped markedly in recent years. On the other hand, the surplus has increased from $1,448,663 at the beginning of 1933 to $5,046,254 at the close of 1944, an increase of $3,597,591.

Prevention First

We have long known that fires are largely unnecessary. We now know that personal carelessness is not a major factor in causing fires in country dwellings in Iowa. The principal causes can be found by a qualified inspector.

There is little glamor in fire prevention, and we cannot say that inspection and removal of hazards in any one case have actually prevented a fire. But we do know that Iowa farmers' fire losses are becoming smaller since inspection began.

Prevention cannot be complete, so we must back it up with the best protection methods. Prevention, however, certainly should get our first attention.

Extension Service Helps

The Agricultural Extension Service of Iowa State College for about 10 years has supplemented the professional inspection service with an extensive program with farm youth organizations and public schools. This work was first under the direction of Byron T. Virtue and later Harold H. Beaty.

The inspections made by the inspectors the buildings on 73,664 farms. Work was continued at lower levels in 1943 and 1944.

If the hazards were identified and removed, it is only reasonable to expect that this work helped reduce the number of farm fires. The marked and consistent reduction in the number of farm dwelling fires is shown graphically on page 21.

More than likely due to past chimneys found last year was it is difficult to form any conclusion about the permanent influence of the inspectors. In 1940 there were 17 defective heating systems for each 100 dwellings, whereas 1944 averaged 10.5.

"Thirty-seven buildings in each 100 inspections were found to have defective lightning protection systems in 1940. Thirty-nine percent of these defects were actually corrected by the inspector. In 1944 this figure had dropped from 37 to 26 percent, with 40 percent of the defects being repaired.

"According to the 1940 summary, 44 percent of the farms inspected had electrical service. This figure is very much higher than would have been the case in the early and middle 30's. The 1944 summary shows 65 percent of the farms wired. On the basis of farms having electrical service, 33 percent of the systems were found to be defective in 1940 and only 7 percent in 1944. Overload protection was found to be lacking on 60 percent of the wired farms in 1940 and on only 25 percent in 1944. Incidentally, the inspectors correct most of the overload hazards at the time the inspection is made unless there are cases where the circuits carry entirely too much current."

It is not possible to get an adequate measure of the work done on this program because much of it was not reported. In 1942, some work was undertaken in 93 counties, 70 of which reported completion of the program laid out. More than 17,000 persons participating inspected the buildings on 73,664 farms. Work was continued at lower levels in 1943 and 1944.

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