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Going to Have a Fire?

Harold H. Beaty
Iowa State College

Henry Giese
Iowa State College

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It's Costly Any Time--Especially So in Wartime

When a nation at war is short of labor and building supplies, it's mightily costly to have to take some of that scarce labor and materials to replace essential buildings or materials that have burned.

We know of no concrete evidence to indicate that Iowa and the Midwest in general are going to have a wave of sabotage which will result in burning buildings and fields of crops. We do not anticipate extensive enemy aircraft bombing of the Middlewest. But either or both of these are possibilities. The British dropped white phosphorus fire cards, commonly called "British Calling Cards," on the grain fields of Germany and they caused numerous fires.

It's not likely that "calling cards" will be dropped on our grain fields, but military authorities point out that Oslo, Norway, is 280 miles closer to Minneapolis than Brest, France, is to New York City. The military men say that suicide air raids could be made in the Middlewest. The enemy aviators could drop their bombs and then alight and surrender. Few of our rural fires, however, are likely to be caused by the war.

We have been digging into some of the major causes of fires and methods of preventing them here at the Iowa Station. For this study the Agricultural Engineering Section was given access to the records from the State Fire Marshal's office. The table, top of page 10, shows that in the 10-year period, 1930-39, 61 percent of the total country fire loss was dwelling, 32 percent barns and the other 7 percent was of all other farm buildings.

So if you are going to have a fire, it's most likely to be your house; next in danger is your barn, with the other buildings following.

There is a lot you can do to prevent fires. Three-fourths of the fires of dwellings from known causes are the result of defective flues—holes in chimneys—and sparks alighting on roofs. And the barn fires—70 out of every 100 are caused by spontaneous ignition and lightning. Piling hay in the barn that isn't cured or permitting the roof to get leaky so that cured hay is wet by rains to a dangerous point causes spontaneous ignition. The proper use of lightning rods will prevent fire from lightning. The accompanying tables (bottom of page 10) show the loss of different types of buildings and the causes of fire.

Battle Home Fires

What can we do to prevent the dwelling fires? Here are a few suggestions:

1. Most of the fires in dwellings are caused by faulty flues or heating systems. So, first of all, look at your chimneys. See that they are built on concrete or solid masonry foundations of large enough area to support the weight without settling or cracking. The footing for a chimney on the outside should start below the frost line.

Connection between the chimney and roof ought to be made with metal flashing to allow for settling. Chimneys in frame dwellings should be built from the ground up or rest on building masonry or foundation walls. Chimneys never should rest on wooden floors, beams or brackets.

2. Use mortar containing only
a small percentage of lime in laying or repairing a chimney because the acids formed in the chimney deteriorate lime mortar rapidly so that cracks and holes may develop. Mortar used in chimney construction ought not be leaner than the following mixture: 1 part Portland cement and 3 parts clean sand, by volume, with hydrated lime in the proportion of 9 pounds to each sack of cement.

3. Inspect all chimneys at least once a year, preferably in the fall before the heating season begins. The inspection should be thorough and should include as much of the chimney as can be seen from the cleanout openings in the basement to the top of the chimney above the roof.

Chimneys passing through attics and concealed spaces need to be carefully examined with the aid of a flashlight and a short, stiff wire to be used in testing mortar joints. Pay special attention to the condition of the bricks and mortar near the roofline, both in the attic and above, as deterioration usually starts at this point.

4. Stoves, furnaces and other heating units need to be large enough to keep the home at a proper temperature in coldest weather without crowding or over-heating them.

To avoid excessive sooting where soft coal is used, add fresh coal at one side of the fuel bed rather than over the entire fuel bed. Keep the feed door damper open. A damper in the smoke pipe is open when the ash pit damper is closed, and vice versa. Clean the ash pit daily and the smoke pipes and flues regularly.

5. Make sure that all smoke pipes, cleanout covers and flue stops fit tightly into the chimney. Close all unused flue holes permanently with bricks and mortar and do not paper over tin flue stops. Smoke pipes should not enter a chimney above the second floor.

If necessary for pipes to run through partitions or floors, use ventilating thimbles which will keep the pipes at least 3 inches from the wood. Protect combustible walls with asbestos if smoke pipes are closer than 8 inches. Furnace smoke pipes should clear woodwork by at least 18 inches.

6. Protect floors under stoves with an insulating board covered with sheet metal of not less than 26-gauge. Such protection should project at least 12 inches at all sides of the heating unit.

No woodwork or wooden lath and plaster partition should be permitted within 3 feet of the sides or back of the furnace unless it is covered with a metal shield or other incombustible material to a height of at least 4 feet above the floor. Protect walls and partitions near ranges by an insulating material if the distance between them is less than 12 inches.

7. Don’t use cheap grade wood shingles. Flat-grained shingles will curl badly. Edge-grained cost slightly more but will last much longer. Don’t try to cover too much surface with a thousand shingles. Shingles laid 5 inches to the weather do not have sufficient support and will soon work loose. Lay them with an exposure not to exceed $\frac{4}{2}$ to $\frac{3}{2}$ inches.

It has been demonstrated that new wood shingles lying flat on a roof do not ignite readily. The hazard increases rapidly as they split and warp. Do not expect a roof to last too long. Dipping wood shingles in paint before laying will make them more fire-resistant. When the wood shingles become curled and fuzzy from weathering, they will burn very readily. If the dwelling roof is in this condition it should be replaced, preferably with fire-resistant roofing, or else spark arresters should be installed on all chimneys to prevent large sparks from passing out the chimney and lodging on the roof.

Check Barn Fires

The two main causes of barn fires are spontaneous ignition...
and failure to install lightning rods or to keep them working. It ought not to be hard for any farmer to watch these two main causes. Here are a few suggestions for preventing barn fires:

1. Be sure your hay is cured and stays dry. If hay can't be cured properly because of frequent rains, stack it in the field rather than place it in the mow. Guard against leaks in the barn roof. Hay that is well cured when stored may ignite spontaneously if it is wet by rain coming through a leaky roof.

2. The lightning conductor or cable must form an unbroken path from all terminals or lightning rods to the ground. The cable should be grounded at least two points as widely spaced as possible. See that the ground cables are down to moist earth or to a depth of 8 or 10 feet, by livestock or machinery. The cable must form an unbroken path.

Defective electric wiring, defective oil and gas stoves, careless use and storage of gasoline and kerosene, smoking, lamps and lanterns, bon-fires, rubbish and oil brooder stoves, spontaneous ignition of oily rags or dust, sparks from engines or motors also cause country fires.

Most of these hazards can be easily removed.

Using good judgment is all that's necessary to prevent most fires that are the normal results of carelessness. The following safety rules were formulated by the Fire Inspection Department of the Farmers Mutual Reinsurance Association, Grinnell, Iowa. If you follow these suggestions you will help reduce Iowa's wartime fires.

Safety Rules

1. Place paint and oil rags in closed metal containers.

2. Place oil stoves and lamps well away from drapes, curtains and inflammable matter.

3. Fill fuel tanks in daylight and away from flames.

4. Clean wicks and burners frequently by washing in hot water and lye.

5. Avoid placing stoves and lamps in drafty locations.

6. Don't use gasoline or kerosene to start or revive fires.

7. Don't use inflammable liquids for home dry cleaning.

8. Remove all inflammable matter from attics and basements.

9. Keep yards free from rubbish and leaves.

10. Keep ashes in metal containers away from buildings.

In 1940 Iowa had 357 fires in which 77 people died and 366 others were injured. More than a third of these deaths were on farms. In addition, the fires destroyed 200 mules and horses, 531 head of cattle, 1,254 hogs, 439 sheep, 13 dogs, 6,695 head of poultry and 45,561 baby chicks.