# Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.



Miscellaneous Publication No. 608 UNITED STATES DEPARTMENT OF AGRICULTURE SAFETY COUNCIL This publication is a revision of and supersedes Miscellaneous Publication 481, Watch Your Step: Farm Safety for National Defense, prepared under supervision of the Committee on Agricultural Safety, Federal Interdepartmental Safety Council.

The revision was made by the Safety Council, U. S. Department of Agriculture.

July 1946

# An ACCIDENT is Looking for a Place to Happen

An accident, right now, somewhere, is "looking for a place to happen." To help prevent your farm from being such a place is the aim of this booklet.

Here, briefly, are the two basic rules for farm safety:

1. Prevention. Recognize the dangers on your farm and remove them before accidents happen.

2. Preparedness. Be ready to deal properly with an accident if it should occur.

It is important that you sharpen your eyes and wits to discover all possible hazards on your farm and remove them immediately—tomorrow may be too late. Get in the habit of doing things the safe way, and see that every member of your household and every worker on your farm learns safety habits.

Keep a first-aid kit or cabinet handy, keep it wellsupplied, and know how to use it. Enroll in a Red Cross first-aid course. Keep fire-fighting equipment handy, keep it in good working order, and know how to use it.



### THE FARMER . . .

fills the dinner pail for the Nation and puts a coat on its back. It is important therefore to the Nation as well as to himself, that the farmer be in tiptop working condition at all times.

But, unfortunately, the farmers of America are not always in top working condition. Accidentsmost of them avoidable-are an ever-present danger, whittling away great chunks of farm manpower and farm income. More people are killed in farm-work accidents than in any other industry. Over 4,300 are killed in farm-work accidents every year, and over 900,000 farm people are injured, according to figures furnished by the National Safety Council. More than \$150,000,-000 is lost, not taking into account the many indirect costs which always accompany injury and death.

How to pinch down his own losses, conserve the human resources of agriculture, and so contribute to the total national economy must be the personal problem of every farmer. This booklet is designed to give him an understanding of the problem and to suggest specific measures toward its solution.

There are two basic kinds of accidents: (1) Those resulting from mechanical causes such as unguarded machinery, defective and worn rope, tools, and other equipment, holes in platforms and floorings, etc.; and (2) those resulting from personal causes such as carelessness, thoughtlessness, ignorance, stupidity, recklessness, insubordination, "horseplay," and other such human failings. But all these causes of accidents can be brought under control by the intelligent and conscientious farmer. It is the farmer's duty to study the hazards on his farm, whether they be mechanical or personal, and to take the appropriate steps to eliminate or make them harmless.

Past accidents can be valuable guides in preventing similar ones in the future. Above all, the farmer must not allow himself to fall into the mistaken attitude that accidents always happen to "the other fellow" and never to himself. He may be that other fellow next time. Vigilance is the necessary price of farm safety.

Unlike the factory worker, the farm worker lives at his place of work and so he is exposed to the hazards of his occupation for longer periods, often 12 hours a day, 6 days a week instead of 8 hours a day, 5 days a week. Safety rules and regulations enforced by systems of inspection, fines, and arrests for violation protect the factory worker. But on farms the rules of safety must necessarily be enforced by the farmer; there are no inspectors or policemen from the outside to "lay down the law."

Each farm is a unit in itself and as such is responsible for its own safety. Outsiders can only make suggestions; in the end it is the farmer and his helpers who must keep the farm a safe place in which to work and live. Farm families can help one another immeasurably by organizing accidentprevention projects in thir own community, using a rotary plan of meetings for the study of hazards and their remedies.

The true wealth of a Nation lies not in its natural resources, or in the amount of gold bullion cached away, but in its human resources. The safeguarding of these priceless human resources, therefore, is the soundest possible investment for the farmer, for his family, and for his community.

Farm accidents in the United States claim a substantial part of farm income and more than 4,300 human lives each year

# ALL AROUND THE FARM

MACHINERY—treads and cogs, fans, belts, and bolts—can be either friend or foe, according to its master.

Service and efficiency, as in other relationships, are largely products of respect, care, and intelligent handling.

A little thought or a bit less haste may prevent a mangled hand, a crushed leg, a nasty slash. Is it worth while to remind yourself—

Stop that motor before coupling the tractor to implement or trailer.

Yield not to the temptation to mount or dismount while the machine is moving.

Put those brakes on before cranking, and be sure the machine is not in gear.

Operating on steep slopes? CAUTION is the cue.

Yes, and taking chances with mowers, binders and combines does not jibe with common sense. What may happen possibly means work for the garage or for the hospital. Would it not pay to remember that—

"Jack be nimble, jack be quick" is a tip for an acrobat but hardly for a sober-minded farmer with a bit of oiling to be done or adjustments to be made in front of a cutter bar. It is far sounder tactics for a farmer to raise the cutter bar before the tractor is attached to the mower, or before the team is hitched. Tractor—or team—should be stopped before anyone steps in front.

A driver should ride a harrow or drag only when a sturdy seat is provided. If a team is used, he should walk behind the implement.

A tip on silage cutters: Danger lurks in unguarded drives; do not relax the watch on them, any more than on the cutters themselves.

Threshing machinery can also be murderous; do not trust it too far. Do not, literally for the life of you, attempt to put a belt on a pulley while the thing is going. Repairs and adjustments, no matter how trivial, call for stopping operations long enough to make them.

Ever see those heavy clouds of dust stirred up by the silage cutter or the thresher? In that dust are likely to be barbs, spines, smut or other particles irritating to the eyes and organs of breathing. It is advisable, therefore, to wear goggles and approved respirators.

**TRACTORS** top the tragedy list in the modern farm factory. Within their clutching chain treads, their ordered tangle of gears and levers and moving parts, is the constant threat of injury and death.

Tractors, therefore, are to be managed with caution and deliberation. Many of the same rules that apply to the safe handling of automobiles hold equally with regard to tractors, e. g., gear shifts in neutral before cranking, the even application of brakes for emergency stops, care in entering highways, reliance on gears rather than brakes when going down steep hills or grades.

6



#### TOOLS AND EQUIPMENT

Are tools in regular places? Are axes and hammers secure on handles? Are dangerous tools kept away from play places? Is instruction given in handling sharp and pointed tools? Is hay-hoisting equipment carefully examined before harvest season?

7

Other pointers:

Engage the clutch gently; start slowly rather than in jerks.

Wait for the tractor to stop before dismounting.

Do not fool with belts while pulleys are in motion.

Remember that overturning is four times as likely when the speed is doubled—reduce the tractor's speed before making a turn or applying brakes.

Rough ground and the nearness of ditches increase the hazards: slow down.

On hillsides, watch with hawk eyes for a hole or ditch that may cause a calamitous upset.

A hot radiator should be refilled only with elaborate care, and refueling should never be done while the motor is running or when it is extremely hot.

When the tractor is hooked up to implements or other machines, the dangers multiply: keep the shield on the power take-off; use an iron hook to handle the drawbar; keep out of the space between tractor and drawn implement.

Do not take chances of any kind when using one of those powerful machines!

**SAWS**—Rip saws, crosscut saws, band saws: many and painful are the injuries they inflict.

Study every installation with a view to preventing the accidental starting of motors, the inadvertent shoving or crowding of the operator by another person. Throw shields and screens and guards around every moving part and every cutting edge, to the full extent practicable. Do not rush the sawing job: take time to keep fingers and arms and clothing out of the way of those jagged teeth.

Small sawmills also entail elements of danger, and methods should be invoked to insure their safe operation.

**TOOLS.** Proper care of edged tools not only is a mark of efficiency but a first step toward accident prevention as well.

Corn knives, axes, hatchets should be equipped with shields for carrying, where practicable.

Chisels, awls, punches, screwdrivers belong in portable tool boxes while being carried from place to place—not in overalls pockets.

And the proper use of hand tools, as well as their care and disposition, will do much to cut down the human-repair bill. Bulletins are available which tell of their use in timbering, wood cutting, brush clearing and building construction.

**INSECT CONTROL.** You want to kill INSECTS—not PEOPLE. Therefore, have a care in the employment of sprays or dust. Protective clothing, and respirators, will help, and so will the thorough cleaning and sterilization of vessels used in mixing and applying. The storage of unused chemicals is fraught with danger.

**LIVESTOCK.** Second in number only to accidents from machinery are the farm fatalities caused by animals.

One run-away can nullify years of training, ruin or injure a good team. A bull, an old boar or a sow with pigs, even a vicious goat or ram, can cause a serious injury.

A few practical hints:

ng

ich

CLE

Handle young work stock gently but firmly before breaking and during training. A mean horse or mule sometimes behaves with docility when handled by a certain person in whom it has confidence.

Speak to an animal before entering the stall; then stroke its neck or back, if it is not too nervous.

Keep gear and harness in good repair. Do not run the risk of a break. Ring the nose of the bull; lead him with a leader. Use a safekeeper bull pen developed by the Bureau of Dairy Industry.

Human beings are susceptible to many animal diseases; use every precaution in the treating of sick animals or disposal of dead ones.

WELLS, CISTERNS, PITS. Aside from the important item of health and sanitation, farm wells, cisterns, and pits are fraught with danger. From

time of construction, through maintenance, to discontinuance of use, precaution is the watchword.

When digging is in progress, the sides of deep openings should be shored up, and the top should be conspicuously marked and railed off to prevent animals or human beings from falling into them. Many is the person who has been buried alive by cave-ins.

The cleaning or repair of the well, or its initial construction, is not a job for one man working by himself. There should always be a companion at the top, ready to draw up the

ANIMALS Are dangerous animals (bulls, boars, etc.) securely penned? Do children learn proper handling of young animals and pets? Is instruction given in care and handling of work animals? worker by the rope or to render any other needed assistance. A strong ladder should be provided for use in descending and ascending.

Tools and materials should be kept well back from the opening, so that they cannot fall on the person below.

Foul air or gas is frequently to be found in an old well or in a partially filled silo. It is easy to discover the presence of such foul air or gas by lowering a lighted candle or a lantern attached to the end of a pole. If the flame is extinguished, or if it burns feebly, dangerous air is indicated. Ventilation is the answer—an answer which can be arrived at by the use of a blower discharging large quantities of fresh air into the silo at the bottom of the hole through a pipe for 10 minutes before entering. Or if a blower is unavailable, a generous quantity of fresh unslaked lime, upon which water has just been poured, will sometimes do the job; in a few hours the lime will have absorbed most of the carbonic acid gas (black damp). But before the opening is entered, the test by lantern or candle should again be made.

Abandoned wells ought to be filled in or safely covered over and every precaution exercised to eliminate dangers to the young or the unwary.

Safety and sanitation have a close affinity in the matter of drinking water. Devices for safeguarding wells, cisterns, and springs against accident are often devices also for protecting the quality of the water supply. To the old oaken bucket, the moss-covered bucket, trace many losses of livestock and human life.

Uncovered springs, or springs so located as to collect surface run-off, many times are starters of contagious diseases. Springs ought to be cleaned several times a year. Shallow wells located near barnyards or outhouses are danger points. Dairy farms, to meet legal standards of sanitation, are usually subject to frequent inspection, but on many other farms where such standards are not required carelessness creeps in. For the protection of the farm family as well as for the protection of the community, watch the water supply! Relocate it if necessary. And throw around it every protection against pollution. Remember, too, that stagnant waters allowed to stand in undrained pools and in rain barrels constitute ideal breeding places for malarial mosquitoes.

**TESTING—WATER ANALYSIS.** Where a water supply is questionable it will be desirable to notify the State board of health in order that adequate tests and water analyses can be made. This is very important.

**CUTS, BRUISES, INFECTIONS.** The simplest abrasion may become infected. None should be regarded as "minor." People have died as a result of a scratch. It pays to stop work, no matter how important, long enough to give attention to every small accident. Hurry, worry, anxiety are causes contributory to numerous mishaps on the farm—the lifting of something heavy, the turning of an ankle or pulling of a ligament, the slipping of a dull instrument.

Here are some tips from those experienced in safety measures:

Handle all tools and knives carefully. Store them properly; keep them out of the reach of children unable to use them easily. Give the youngsters tools made to their sizes and needs, and teach them how to use them.

Dispose promptly of tin cans, razor blades, broken glassware-out of harm's way. Light storage space well, have ample space for everything. and everything in its place.

Bend the knees and keep the back straight, when there is a heavy object to be lifted.

# CUTS AND INFECTION

Are toys with sharp points and edges discarded? Are sharp-edged tools kept away from small children? Is skillful use of knives and other tools learned?

# MISCELLANEOUS

Are racks and fences in good repair? Are wells and cisterns adequately protected? Are nails promptly removed from loose boards? Is unused lumber carefully stacked?

#### GUNSHOT WOUNDS

Are firearms about premises unloaded? Are all firearms out of reach of younger children? Are they always handled as if they were loaded?

### IN AND ABOUT THE HOME

"OCCUPATIONAL" HAZARDS of farming multiply because the place of work and the place of domicile are one and the same, and because on the farm there is no 8-hour day. The "time clocks" span the daylight hours and dip deep into the dawn and the dark. Weariness and a wide spread of responsibilities sharpen normal risks. Long exposure to cold, to dust, to rain, to sleet, to snow, and to wind is a factor in lowering the margin of safety. Extreme youth and old age—the entire family with its various garbs and diverse duties—share the working conditions and participate in the accident record. Familiarity with daily dangers, be they trivial or otherwise, often breeds contempt.

Burns and suffocation are the leading causes of fatal accidents to children in the home up to 4 years of age. The National Safety Council figures show that between the ages of 5 and 14 the most frequent home accidents are falls and burns; so, too, in the age span of 15 to 64. Among persons 65 years and older, 77 percent of injuries are due to falls.

Most home accidents occur on stairs and steps, in yards, and in the kitchen. Causes usually trace to disorder, to improper use of equipment, to lack of house repairs. Poor judgment, physical frailty, and hurry are often the start of disaster. Child injuries frequently result from adult negligence.



Good barometers of the safety-consciousness of any farm family are doors, gates, hinges, latches, ladders, stairways, railings and roofs.

Sound farm management carries numerous earmarks of safe living: hinges that are lubricated, big enough for the job, properly attached; latches conveniently placed and that can be used without effort; gates and doors that open in the right direction, that do not sag; ladders strong, in good repair, stored without hazard to life and limb; stairways solid under foot, not too steep, clear of obstacles; railings and roofs that can be trusted.

Most good farmers already recognize the importance of the safety factor. They are alert to make such repairs in equipment as may be called for, to sweep up trash, to remove fire hazards. What they need most is a guide to help them. The few simple precautionary suggestions enunciated in this bulletin reminders of what may already be known and accepted as bits of common sense—may serve to benefit the health and the efficiency of farm workers and prevent painful, costly, even fatal accidents.

**LADDERS.** It is an old superstition that it is unlucky to *walk under* a ladder. Well, it may be equally unlucky to *climb* one—unless the ladder is of sound material, straight grained, and free from knots or other defects. Broken or badly worn rungs call for immediate replacement. If used on hard, smooth floors or on pavement, ladders should have pieces of rubber nailed to the foot to prevent slipping. (Small sections of old rubber hose, or of discarded inner tubes, serve admirably.) Or, used on a wooden floor, a securely nailed cleat will grip the ladder in place. Or, in lieu of a cleat, a man can be stationed at the foot to hold the ladder steady.

Ladders permanently located should be fastened securely at both top and bottom. The top should project at least 4 feet above the landing to which it leads. Always prop or brace a long ladder at the middle, to prevent bend or sway; unusually long ladders should be braced at intervals of 10 to 12 feet.

Ladders that are nailed to a wall should stand at least 8 inches from the wall to allow room for firm footage on the rungs.

Two ladders joined together to obtain additional reach should overlap at least 6 feet; the spliced ends fastened substantially; the center of the combined span braced firmly to building or ground.

Broken or rickety ladders are a liability; adequate repairs an asset. Keep every ladder in prime condition; discard those which are rotting or which cannot be repaired. And then, there is the equally important matter of how to *use* a ladder for the conservation of life and limb—

Don't sacrifice the free use of both hands because you have a load to carry. A firm grip on side rails means a better grip on safety. Lifting heavy weights by rope or block and tackle is the sensible way.

It seems incredible but it is a fact that now and then a man will still lean a ladder against a tree limb while *engaged in sawing off the limb*! That may get laughs in the comic strips but there is not much fun in it for the chap who does it.

Nor is it wise to climb a ladder that leans against hay or grain or other shifting material unless that ladder is first secured in place.

One of the quickest ways to come down to earth, is to use a ladder that is coated with ice. Quick, but often disastrous!

Parenthetically, it might be added that the orthodox manner of descending—face toward the ladder—is also the safest, and that the removal of projecting nails and splinters from sides and rungs saves wear and tear on the clothing, and sometimes on human hide.

**RAILINGS.** "The straw that broke the camel's back" is comparable to the hay that partially conceals a floor opening leading to a manger or feed bin.

Every opening—it is therefore suggested—where a ladder passes up through a floor should be protected by a railing on three sides. A substantial railing about 40 inches high.

A weak railing is worse than none at all, for it may invite someone to lean against it—which is an invitation to calamity.

Second pointer: Provide toeboards around floor openings, and along the edges of raised platforms, where that can be done without materially interfering with their use. Such rims keep many objects from falling upon persons below.

Openings used as hoistways in barns, storehouses, or other buildings call for railings at each floor or landing. Platforms more than 4 or 5 feet high require similar protection.

Either trap doors or railings should be provided for floor openings which lead to mangers or serve for the removal of manure.

Inclined runways rising more than 4 or 5 feet should have guardrails; and if the slope is sharp, they should have cleats to prevent slipping.

Stairways of more than three steps should be equipped with handrails. This is particularly important when they lead to cellars or pits.

Sunken water barrels, deep ditches, pits, wells, cellarways, and similar traps for the unwary should be railed off.

**STAIRWAYS.** A toy automobile parked on step or landing has inflicted more than one casualty. Many serious accidents have resulted from stair-



ways cluttered with brooms, mops, wastebaskets, stacks of magazines, and children's toys.

Eternal vigilance may be applied to stairways by insisting on these first essentials, among others:

Plenty of light, natural or artificial—additional windows may be cut, or additional lights provided.

Hand railings on both sides of open stairways; a single handrailing for every closed stairway.

Railings to guard every stairway opening.

New-not patched-up-treads to replace every tread that has become dangerous.

**FLOORS, DOORS, WINDOWS.** Termites, rot, loosened nails, wear and tear make the floors of barns and outbuildings a leading cause of accidents. Constant vigil can prevent many a broken bone, twisted ankle, torn ligament. Watch the boards under your feet, and the support under the boards, substitute a new plank when the old one becomes a hazard. Clean linoleum floors at once, if grease or water is spilled. Tack down small rugs, or attach them to a nonskid base.

Watch that door! Keep the hinges oiled, tightly attached, in good working order. Use a strong hook to keep it either open or closed. The fall of a heavy door can cause most serious injuries.

Counterweights? Have them where they will not strike anyone if they should drop. Keep an eye on the ropes or chains by which they are suspended; replace when found weakened.

Sliding or rolling doors? It's a simple and wise precaution to install stops to prevent them from coming off their tracks.

How to hold windows open? Suitable catches, or cords and counterweights, have it all over a stick, a screwdriver, or any other makeshift device, when it comes to safety, orderliness and efficiency.

Broken panes? Better get new glass right away—and dispose of the jagged, discarded pieces where they will do no harm.

**ROOFS.** Overhead, as well as underfoot, are spheres of danger on the establishment that is the farmer's.

Shingles rip off, paint wears down, chimneys become defective, leaks ensue—the farmer must take himself off the ground and into the skies if he is to keep a good roof over his head. Often this farmer is as unaccustomed to clambering at elevations of this sort as he would be at Alpine climbing. If he would continue hale and hearty, he would do well to make sure of the strength and firm fastening of ladder and scaffold—and tie one end of a rope to the building and the other end around his waist. Then, if he slips, he will not catapult to the ground.

And in winter there are other accidents which sometimes trace to roofs: Heavy icicles hanging to the eaves, heavy accumulations of snow, above







YES NO

	1.0
Do you keep guards in place on power shafts, belts and chains	
Do you block machinery and turn off the power before adjusting	
or unclogging it?	
Do you avoid climbing over or around a running combine or	
thresher?	
Do you avoid getting in front of the mowing machine to make	
adjustments while the machine is in gear?	
Do you avoid stepping over or under moving belts?	
Do you avoid wearing loose-fitting, torn clothing or torn, rag-	
ged gloves around moving machinery?	

#### **BUILDINGS AND FARMYARD**

Are ladders and steps well built and kept in good repair?	
Are ladder openings and stairways hand-railed; are hay-chute	
openings properly protected?	
Do you protect water tanks, cisterns, wells or pools, hazardous	
to the lives of children?	
Do you keep the farmyard clear of garden tools, forks, rubbish,	
waste, etc.?	

#### HAND TOOLS

Are hammer and ax heads secure, handles in good condition?	
Do you have a definite place for every tool when not in use?	
Do you stroke from behind when whetting tools to avoid cutting	
the hand if blade moves too far forward?	
Are dangerous tools kept away from play place?	

#### ELECTRICITY

Are all electric circuits equipped with proper-size fuses? (Light	
circuit fuses should generally not exceed 15 amperes)	
Do you cut off cuŕrent when working on an electrical conductor? 🗌	
Are all electrical appliances in proper condition; are they being	
properly operated?	
Do you avoid replacing burned-out fuses with coins, wire, or	
other metal?	

Inspection Points The Way To Protection







#### 





#### **FIRES**

Do you have an emergency water supply available? (Pond, barrels in buildings, or hose attachment to water system)	
Have you eliminated weeds, brush, old lumber, and other similar fire hazards from around buildings?	
Do you have chimneys and stovepipes inspected and cleaned	_
Have you approved type of fire extinguishers at building en-	
trances and are they checked at regular intervals?	
or hay stacks?	
In the absence of an organized rural fire department, do you have definite arrangements with neighbors to come with tools,	
water, and ladders in case of fire?	

#### SANITATION AND HEALTH

Do you avoid overexposure to sun, and avoid heat collapse by	
drinking plenty of water and taking plenty of salt?	
Have you a first-aid kit? Do you know first aid?	
Do you avoid starting and running gasoline equipment in build-	
ings with closed doors?	
Do you repair rusty wire fences or splintered wooden handles	
with gloves on?	·

#### FARM HOME

Do your stairs have at least one strong handrail?	
Do you keep steps, porches, and stairways in good repair?	
Do you immediately mop up spilled grease or water?	-
Do you use a safe step-ladder instead of a chair?	
Are small rugs kept away from head and foot of stairs and from	
landings?	
Do you have electric cords repaired or discarded when they be-	
come frayed or worn?	
Are matches kept out of the reach of children?	
Do you keep medicines which are poisonous in a special cabinet	
with special labels?	

This is only a partial list of hazards. You are invited to expand upon it and submit suggestions and questions to your county agricultural agent.





17

doorways, windows, paths, or passageways. A little forethought—a bit of easily accomplished clearing of roof areas in such locations—may prevent accidents.

**BURNS AND SCALDS.** Many, perhaps most, rural homes place large dependency on lamps and lanterns, on matches, on kerosene for the starting of fires, and on open fireplaces. Stove tops steam with kettles and pans.

BURNS AND SCALDS

Are matches kept from little children? Are small children protected from tubs of hot water? Are hot containers beyond reach of small children? Is woodwork protected from stovepipes? Is rubbish disposed of promptly? Are chimneys cleaned regularly? Is screen used at fireplace?

The family laundry may be the kitchen, where on washday congregate pails and tubs of sizzling-hot water. Cleaning fluids—highly inflammable—add yet another hazard to the daily existence of rural families. Children, in particular, become victims of painful burns and scalds which often inflict scars and sometimes result fatally.

Among the minimum precautions to be taken are these:

Storage of gasoline or kerosene in prominently labeled containers, well removed from flame and stove and out of reach of children. Never use gasoline in a room where there is an open flame. Never fill a gasoline or kerosene stove while the latter is burning. Have oil and gasoline stoves on solid bases so that they will not upset. Keep matches in noninflammable containers out of the reach of small children. The use of kerosene for starting a fire is dangerous.

Equip every fireplace with a screen. Turn saucepan handles away from the edges of tables and stoves. Keep kettles, pails and tubs of hot liquids off the floor. Use care in handling hot liquids, particularly those containing grease. Do dry-cleaning out of doors. **ASPHYXIATION.** The so-called "coal gas" is a characteristic accident breeder of rural homes. Care in the banking of fires at night, and in keeping chimney dampers always at least slightly open, will do much to provide a safeguard. So will attention to the adequate ventilation of rooms.

**GAS BURNING APPLIANCES.** Many are the explosions, the fires, and the asphyxiations traceable to gas. Adherence to a few simple precautions could prevent most of them.

Rigidly supported appliances fed through fixed piping are the first essential of safety. Flexible tubing, occasionally mandatory, should be of substantial construction, the shut-off valve should be on the rigid pipe rather than on the appliance, to avoid leaving the tubing under pressure.

It is risky to leave gas burning at night, or in the absence of the family.

One way of being sure that gas-burning appliances are reliable is to know that they bear the label of the American Gas Association Laboratory.

**POISONING.** The dangers of the medicine cabinet are common to homes throughout the land—both urban and rural, and bottles should be kept beyond reach of small children and clearly labeled for the benefit of everyone having access to them. Medicine cabinets should be well lighted or a flashlight can be used.

Beyond these normal hazards, there are many other sources of poisoning peculiar to the farm. Among them are poisonous plants—poison ivy and poison oak, especially; and the four poisonous snakes of America—the rattler, the copperhead, the moccasin, and the coral snake. Insecticides are frequently stored in or near the kitchen, with a likelihood of becoming mixed with flour or sugar. Great quantities of canned goods are often on the pantry shelves, and of course improperly sterilized canned foods may lead to botulinus poisoning.

To cope with these menaces to life and health, farm families must keep constantly alert. Distinctive containers will help. So will familiarity and constant awareness of poisonous snakes, berries, and plants native to the locality. Put all the distance practicable between insect powders and other poisons, and food.

**FALLS AND BROKEN BONES.** Are stairways well lighted? • Are small rugs secured against slipping? • Is ice cleared from steps and walks? • Are porch railings and floors sound? • Is play apparatus in good condition? • Are stairs clear of toys and other household articles?

**POISONINGS.** Are all poisons separately stored? • Are poison containers clearly identified? • Are medicines separately stored? • Are unused and unneeded medicines promptly discarded?

**GUNSHOT WOUNDS.** About 70 percent of fatal firearms accidents on farms occur in the open but the remainder happen in the house. Many are the children and adults killed by "the gun that wasn't loaded."

Prevention: Keep guns in a special closet provided with a lock. Remove all shells from firearms immediately after using. Upon picking up a gun, ascertain immediately whether or not it is loaded—do not trust to memory or to what someone says about it. Learn the correct way to carry, to clean, and to fire every type of weapon at hand.

**RURAL ELECTRIFICATION** brings new hazards along with many blessings.

The farm housewife doing the family laundry may stand on a damp floor, effectually "grounding" the current. That is the same form of electrocution that sometimes ensues when a person taking a bath touches a metal switch or a piece of electrical equipment. Radio wires, coming in contact with power wires, have brought trouble. So have badly placed electric fans and Christmas tree lighting fixtures.

Some tips to those who would live long and prosper: Use porcelain sockets instead of brass. Cords exposed to water or dampness should be of rubber. Keep the floors of the laundry room as dry as possible, wear rubbers as an added precaution. Discard or repair promptly cords having exposed wires.



# SOME POINTERS FOR ELECTRICAL SAFETY

**1.** Have wiring done only by a competent electrician.

2. Have wiring done with approved materials, and preferably according to specifications recommended by REA. Be sure that your wiring complies with the requirements of the National Electrical Code, and with any State regulations that may be in force, before current is turned on at your meter.

3. Have all wiring inspected by an authorized inspector.

**4.** Use only approved cords and appliances and do not handle them with wet hands or while standing in a wet place.

5. Follow the directions that come with each appliance.

6. Do not run extension cords under rugs, over nails or around pipes or radiators.

7. When you disconnect an appliance, pull on the plug, not on the cord.

8. Replace fuses, when they blow out, with others of the same capacity.

9. Don't touch exposed wires unless you are sure the current is off.

**10.** If you need advice on installing a radio aerial or any other equipment, ask at the office of your REA cooperative or local power company.

**11.** If you see anything wrong with the electric high line, call your REA project office, or the electric company office, at once. Before pulling well casings or moving any equipment or buildings under or near the electric high line, call your REA cooperative office or the electric company and they will gladly send a maintenance man to supervise the moving and avoid contact with high voltage lines.

**12.** If your line goes dead, let the central office know immediately.

**13.** In recent years electric fences have come more and more into use, but extreme caution should be used in their operation. Under no circumstances should home-made controllers be used. And when electric controllers are purchased, care should be taken to make sure that they are of approved manufacture. Some REA systems insist that electric fences can be used only if approved by local cooperatives. In Idaho, for instance, one REA system has rules that electric fences on their system must be controlled and installed in accordance with the National Electrical Safety Code.

**ASPHYXIATION AND SUFFOCATION.** Are all gas connections substantial? • Are all gas burners adjusted for proper combustion? • Are garage doors always open when starting automobile engine? • Is bedding secured against possible smothering of baby?



# FARM FIRE PREVENTION

The National Fire Protection Association states that approximately 3,500 persons are burned to death in farm fires each year. About \$90,000,000 is the estimated cost of these fires.

But the monetary loss, large as it is, represents only a portion of the total economic loss. Loss of potential income, due to the death or disablement of persons with earning capacity, loss of foodstuffs, loss of livestock, and loss of housing facilities multiply the actual cost of fires. Farm buildings, lacking the protection of organized fire departments and good water supply systems, frequently burn to the ground.

**COMMON CAUSES.** In many sections of the country farm buildings are constructed almost entirely of wood. Usually they are built in accordance with individual ideas concerning certain conveniences rather than in conformity with known rules of fire protection. Hay, grain, straw, foodstuffs, and many other materials found on farms are readily ignitible and burn freely. Although this fact is well known to most persons who own or live on farms, ample water supply and proper apparatus with which to extinguish fire seldom are provided by owners or occupants.

Fires on farms are due to seven principal causes, most of which are preventable. These causes are shown in their approximate order of importance on the opposite page.

**FAULTY FLUES AND HEATERS.** A chimney should be well constructed, built from the ground up, set on a solid foundation. It should not be dependent for its support on wooden construction. Nor should it be used to support any part of the building itself. Standard flue lining is recommended. Where it is not feasible to rebuild an existing chimney, the walls of which are not of standard thickness, frequent cleaning will reduce the likelihood of fire. All defective chimneys should be rebuilt. Chimneys, flues, stoves, and furnaces should be kept clean.

Stoves and furnaces should be set well away from walls and woodwork. They should rest on substantial bases, and combustible floors should be protected by incombustible material under and adjacent to the bases.

Smoke pipes should be substantially supported, kept in good condition, separated 12 inches or more from woodwork or other combustible material. Use a ventilating thimble which provides at least 6 inches of air space on each side of any smoke or heating pipe which passes through a partition, floor, or ceiling. And such partitions should be protected by air-spaced metal backed by asbestos board one-fourth inch or more thick. Ashes belong in metal cans, never in wooden or cardboard containers.

**COMBUSTIBLE ROOFS.** Sparks from chimneys, bonfires, grass fires, forest fires, or from burning buildings some distance away frequently cause

fires on wooden shingle roofs. Flying brands from roofs of this type frequently ignite haystacks, wood lots, and buildings.

Fire-retardant roofing material should be used wherever possible. Where wooden shingles are used a spark arrester should be provided on all chimneys in use in the building. Ladders of proper length and construction should be kept in close proximity to all buildings with combustible roofs to provide quick access to roofs in case of fire.

**LIGHTNING.** Farm property loss from lightning averages about \$10,000,000 a year. It is estimated that 400 persons are killed, and 800 to 1,000 persons are injured by lightning on farms each year.

Properly installed and well-maintained lightning rods will provide practically complete protection against damage to buildings by lightning. In order to obtain the best results, lightning rods should be installed in accordance with the National Code for Protection Against Lightning. Tracks for carriers and other metal bodies inside of buildings should be grounded and bonded together to prevent electrical flashes from one body to another.

A metal roof, electrically bonded, properly grounded, and provided with air terminals to protect chimneys or other nonmetallic projections, usually affords satisfactory protection.

**SPONTANEOUS COMBUSTION.** Hay, pea vines, and other roughage which is damp or not properly cured, frequently develop heat spontaneously when stored in large piles. This is true also of horse manure. The heating sometimes continues until the temperature of ignition is reached.

Any material which is found to be heating excessively should be removed from the building in which it is stored, but first the heating area should be thoroughly soaked with water. Flames have been known to break out during the removal of material already heating. Fire-fighting equipment should be made ready to fight a fire, if one should occur. The material which is heating should be moved to a point a safe distance away from buildings or other combustible materials, as it may burst into flame later.

**MATCHES AND SMOKING.** Fire may result from a carelessly discarded cigar, cigarette, match, or pipe contents. (See also Burns and Scalds elsewhere in this publication.) It is wise to prohibit smoking in barns or elsewhere where combustible material is stored. Cleanliness, tidiness, and order in and around all buildings are essential to the prevention of fires. Build of fire-resistant materials whenever possible.

**ELECTRICITY.** The use of electric lights reduces the fire hazard which exists in connection with the use of oil lamps and candles. Electrical appliances, properly installed and used, frequently reduce the fire hazard

which exists in connection with the use of appliances deriving heat and power from fuels of various types. It is most important, however, that all electrical wiring and devices be installed properly to avoid special hazards due to the use of electricity itself. (See Home Electricity elsewhere in this publication.)

**GASOLINE AND KEROSENE.** Gasoline and kerosene should be stored in underground tanks if possible. Withdrawal from tanks should be made by means of pumps. It is extremely dangerous to transfer gasoline from one container to another inside a dwelling or other farm building. Such transfer should be made in the open or confined to the oil storage house. If gasoline or kerosene cannot be stored underground, it should be kept in a special building located 75 feet or more from other buildings. Gasoline containers should be painted red and have the letters GASOLINE painted thereon.

Trucks, automobiles, farm machinery, and other equipment which derive power from oil or gasoline engines should be stored and used only in places where a backfire or sparks cannot set fire to combustible materials. (See Burns and Scalds elsewhere in this publication.)

**FIRE PROTECTION.** Fire spreads with amazing rapidity when help is far away. If it is worth while for a factory to be prepared to cope with greedy flames, it is doubly imperative for the comparatively isolated farm family to have instantly at hand the means with which to combat this form of destruction.

The minimum of fire-protection devices needed on a farm consist of pump-tank extinguishers or chemical extinguishers, or both; also fire pails and water barrels, and ladders. Such equipment should be kept in readily accessible places for instant use.

Still better is a system for supplying water under pressure to hose lines which can be used for fighting fires and for saving property which is endangered by fires in adjacent buildings or materials.

Fire-fighting equipment should include at least three 50-foot lengths of  $1\frac{1}{2}$ -inch hose stored in 100- and 50-foot lengths with nozzles attached. Where the pumping capacity is 500 gallons per hour,  $\frac{1}{2}$ -inch smooth-bore nozzles should be provided; where the capacity is 600 gallons per hour,  $\frac{1}{2}$ -inch nozzles should be provided. The 50-foot length of hose should be used to avoid unnecessary friction loss when fires are close to the water connection; the longer length should be used when a fire is farther away from the water connection. If the hose is used for other farm purposes, it should be used as it is much less susceptible to damage from heavy use and unfavorable conditions of storage, than cotton, rubber-lined, or linen hose. When the pumping capacity is not greater than 10 gallons per minute, not more than one hose stream should be operated at a time or the

effectiveness of each will be greatly reduced. Power sprayers or other equipment of like kind also can be utilized in event of fire.

Where the supply is not greater than 500 gallons per hour a storage of at least 1,000 gallons of water is essential. Where the supply is 600 gallons per hour, the water storage should be of at least 1,200 to 1,500 gallons capacity. Storage tanks or reservoirs should be kept full.

Hose, ladders, and other equipment, including the pump for the water system, should be stored in a centrally located building or in an addition to a building having at least a moderate degree of fire resistance. This will insure equipment readily available and not subject to damage during the early stages of a fire. The door of the building never should be locked. A building can be made reasonably fire-resistant by covering wood studding on each side with metal lath, and plastering with 1 inch of Portland cement, inside and outside. The roof should be covered with good-quality incombustible material.

WATER SUPPLIES FOR FIRE FIGHTING. When the response of firefighting equipment is assured, through the establishment of a rural fire department or by other arrangements, it is highly desirable that ample water be made available for use by such equipment. Only fires of limited extent can be handled by the chemical or water tanks carried on fire trucks. A stream or pond with dependable supply located within a few hundred feet of farm buildings simplifies the problem of additional supply. It is then necessary only to furnish easy access by the fire department pumper. This may mean the construction of a roadway to a spot of firm ground from which the pumper may operate, or possibly filling in to provide such a landing stage. The pond may need to be deepened or the stream dammed to make a pool. In other instances it may be desirable to dig a small canal to a suitable point for operation of the pumper, or to lay a tight pipe line from the stream or pond to a hydrant, conveniently located, from which the pumper may work. Fire engines usually carry at least 20 feet of suction hose, but under average conditions a pumper cannot be expected to lift water more than 15 feet. Consultation with fire-department officials will be valuable in deciding the exact layout to be provided.

With no natural supply available, it is well to provide additional storage of water. This suggests an underground tank, although an elevated tank which is part of a domestic water system may be used if it is of sufficient capacity and if a suitable hydrant or other connection is provided for the pumper. Rural fire departments commonly use a one-half-inch nozzle which requires about 50 gallons of water per minute (3,000 per hour).

A tank of at least 4,000 gallons capacity is advisable. This means a tank 8 feet by 8 feet by 8½ feet. A tank 10 feet by 10 feet by 10 feet would store 7,500 gallons of water. Tanks can be purchased ready to install or built in place by farm labor. Various materials may be used. The only requirement is that materials be permanent and suitable for under-

ground use. The tank should be centrally located and have a suitable manhole opening for access by the fire department, for suction purposes. Regular inspection should be made to insure full storage. Where storage is to be used also to supplement an inadequate supply for the farm water system, the capacity should be not less than 5,000 gallons, since part of the emergency supply will be used up before the fire department arrives. Where the tank is to be used in connection with house piping lines, provision should be made for regular flushing, cleaning, and other sanitary safeguards.

**PRIVATE FIRE PUMP.** Where there is no possibility of fire department response and the value of buildings, implements, and stock warrants more protection than is afforded by a small water system, greater protection can be obtained by use of a private fire pump which should have, as a source of suction supply, a water storage tank of 4,000 gallons or greater capacity. The pump should have a capacity of at least 50 gallons per minute delivered against 60 pounds pressure. This will provide delivery of a satisfactory stream through one-half-inch nozzle. Power for operating the pump may be supplied by an electric motor or by a gasoline or oil engine. The power unit should be directly connected to, or located in close proximity to the pump. If no other source of power is available, the pump should be so arranged and equipped that it can be driven from the power take-off of a tractor. Unless the piping which leads from the pump to one or more hydrants or hose connections is very short, it should be  $2\frac{1}{2}$  or 3 inches in diameter.

### FARM FIRES

# MOTOR VEHICLE ACCIDENTS

The motor vehicle has made radical changes in rural life. But the immense economic and social advantages that come from modern highway transportation are costing far too much in accident losses. The National Safety Council points out that last year 4,300 farm residents were killed in automobile accidents. Motor-vehicle accidents are of extraordinary public importance because they directly affect highway transport—so vital to the economy of the Nation.

Automobile accidents can and frequently do happen right at home. The dangerous hand crank is almost obsolete. But amateur repairmen can be crushed when cars slip from improvised jacks, or can be suffocated by carbon monoxide gas when engines run in closed garages. Small children, unless carefully watched, may be seriously hurt by backing cars. Older children at play may release the brakes, with disastrous consequences.

The sphere of chief danger, however, is the highway. From the moment a car emerges from a private land or driveway onto a public road, its operator assumes a public responsibility. He must respect the rights of others, and look out for their safety as well as his own. Yet thousands of accidents occur every year right at farm entrances due to sudden and careless turns into or out of arterial highways.

Thanks to our engineers, a modern highway can be built free from hazards of design or construction, if there is the money to pay for it. Much driving, however, must still be done on imperfect roads having sharp curves, steep grades, slippery surfaces, high crowns, narrow pavements (if any), and inadequate lighting.

But even our poorer roads do not in themselves cause accidents, as is proved by the fact that many thousands of cars pass safely for every one that comes to grief. A capable driver is safe on almost any road, and if road conditions are too bad he knows enough to stay at home or to go the long way around. The responsibility for practically every motor-vehicle accident traces directly to the driver—to some failure on his part to do the right thing at the right time. Many accidents result from plain recklessness, the deliberate taking of chances. More often, ignorance or inexperience are to be blamed. It is every driver's duty to make himself competent and safe.

What is a safe driver? The locomotive engineer, the sea captain, and the aviator must undergo long training and pass strict tests. A good driver should be as well fitted for his job as these men are for theirs, though his responsibilities are smaller. He should be able to act quickly and reliably in emergencies but, even better, he should know how to avoid emergencies.' He should be even in temper, neither irritated nor confused by the traffic around him. His mind should be always on his driving. He must not be a gambler, when human lives are at stake. He should know what the law requires in every situation. If he cannot measure up to these requirements,

.

he ought at least to recognize his deficiencies and make every necessary allowance for them.

**FIRST RESPONSIBILITIES.** Before any driver moves out of his garage, it is his job to know that his car is properly equipped and ready for the road.

With proper care, a modern automobile can be kept in safe operating condition. Periodic inspection and adjustment will help to prevent failure of steering gear or brakes. The retreading of worn tires will reduce the likelihood of skidding and help to avoid blow-outs. Headlights are particularly apt to be neglected. For efficient illumination they must be clean, equipped with correct bulbs and lenses, and be properly focused so as not to blind other drivers by their glare. Proper maintenance of all parts of the car is not difficult, and is most economical in the long run. If an accident happens because of the failure of any part of the car or its equipment, the owner is almost invariably to be blamed for his negligence.

As for the driver, he must know how to control his car and must be physically and mentally fit. Fatigue, illness, and liquor are notoriously incompatible with safety. The good driver knows the general rules of the road and all local regulations. These are usually available in printed form, obtainable from police officials or motor-vehicle authorities.

**DRIVING AFTER DARK.** Almost three-fifths of all fatal automobile accidents occur between dusk and dawn, according to the Highway Education Board, Washington, D. C., which sums up its suggestions for preventing such accidents in the following seven rules:

1. Slow down after dark. 2. Use the passing beam when meeting other cars. 3. Watch out for pedestrians. 4. Adjust and repair headlights periodically. 5. Keep headlights and windshield clean. 6. Don't drive when you're drowsy. 7. Stop well off the road at night.

**SPECIAL RULES OF THE ROAD.** Because of the high speed at which motor vehicles are driven, and the differing amounts and types of traffic on various roads and streets, special rules and regulations are often necessary to meet local requirements.

if e ie s.

d

er

es.

Traffic and highway engineers have devised a system of signs and signals as a guide to action where these special rules are in force or where special care must be taken.

A red traffic signal light means "STOP!" A yellow signal means "CAUTION." A green signal gives permission to proceed—provided it is safe to do so.

A STOP sign posted where a side road enters a main highway means exactly what it says—no less. After stopping, a driver may proceed when it is safe to do so. Since the driver on the main road expects other drivers to yield the right-of-way, disregard of STOP signs is a short cut to disaster.

Warning signs are posted on the roadside where special caution is required, as at railroad crossings, hills, curves, and narrow bridges. They are there because they are needed, and their warning should never be ignored.

Other signs give information regarding the nearness of schools, hospitals, and various places where vehicles or pedestrians are likely to congregate. Such places are to be passed carefully.

**SPEED.** The most important single cause of accidents is speed—too much speed in the wrong place. No one is justified in risking death or disabling injuries for the sake of saving a few minutes. The law may set a speed limit, but safety within that limit is still the responsibility of the driver.

A car traveling 40 miles per hour is moving as fast as if it had fallen from the top of a four-story building—and if it hits something solid the effect is just as bad. It should be remembered, too, that a car can be stopped in about 75 feet when traveling at 30 miles per hour, but it takes 225 feet to stop at 60 miles per hour. A mile-a-minute speed is equivalent to 88 feet per second, which means that in an emergency the car will travel 50 feet or more before the driver can move his foot to the brake pedal. If the driver will always choose his speed so that he can control his vehicle in any emergency, it is not probable that there will be any emergency.

It must always be taken for granted that the "other fellow" is thoughtless or irresponsible. Pedestrians are likely to blunder into the roadway, often because of advanced age, infirmity, or the inexperience of childhood. Special caution is called for when children are playing near the roadside. If an accident happens, it is only poor comfort to know that someone else was legally at fault. It is much more satisfying to avoid the accident, notwithstanding contributory negligence of the other party.

**PROTECTING THE DRIVER.** If the car driver has obligations toward pedestrians, the reverse is equally true. Pedestrians should walk on the left side of the highway, on the road shoulder if possible, but at least on the extreme edge of the pavement. In this position they can see approaching vehicles and step aside if necessary. Those who must walk on the road at night should wear light-colored clothing, carry conspicuously a white newspaper or handkerchief or, still better, carry a lighted lantern.

Horse-drawn vehicles and farm machinery should, of course, carry lanterns at night. A disabled vehicle should be moved off the pavement promptly or be protected by lanterns or flares.

Children should not be permitted to play on the highway. Livestock should be tethered or fenced out of the right-of-way. When cattle must be driven across a public road, the crossing should never be concealed from approaching traffic by hills or curves. If necessary, it should be moved to a point where a clear view can be had of it from both directions. Roadside market stands should provide parking space off the pavement.

Even so simple a thing as the cleaning of a fence corner may assist greatly in providing a safe view at an intersection and so prevent accidents.

#### GENERAL RULES OF THE ROAD

The common rules of the road for motor-vehicle drivers are:

- 1. Drive to the right when meeting vehicles or where approaching vehicles may be hidden from view.
- 2. Drive to the left when passing vehicles from behind.
- Do not pass a vehicle near the crest of a hill or on a curve where there is the remotest chance of finding the way unexpectedly blocked by another vehicle.
- Do not reduce speed suddenly or change direction without signalling.
- Always keep the car under control. A car out of control is like a run-away 'horse.
- Keep a safe, clear stopping distance ahead. If there is room to stop, there is no need to hit anything. Do not follow the car ahead too closely; it might stop suddenly.
- Proceed at a safe speed on the right side of the road when approaching hilltops, curves, or intersections where other cars, or stray livestock, may be obscured.

At night drive so that it is possible to stop within the distance clearly illuminated by the headlight beam. When the road is slippery cut down speed accordingly. Skid chains are often helpful. If all drivers scrupulously observed these common and general

rules, there would be need for few other operating regulations.

# THREE NATIONAL WEEKS

The three special weeks described below are high lights in the national farm safety program. It is obvious that unless some lasting and definite plans are drawn up and put into effect, farm safety will be forgotten soon after the three special weeks have passed. The most effective results from the national as well as the individual farmer point of view will be obtained by making these three special weeks the starting points for continuous programs extending throughout the 52 weeks in every year.

#### SPRING CLEAN-UP WEEK

(No definite national date. The exact week is set by local proclamation, ranging from early March in the Southern States to late May in the North)

This Week, sponsored by the National Fire Protection Association with the United States Department of Agriculture cooperating, is the focal point in a national campaign to prevent fire, accidents, and disease. As the name implies, its primary purpose is to urge everyone to clean up around his shop and home and remove those hazards that endanger his property, health, and well being. Farm people everywhere can make their farm grounds and home a safer and more pleasant place to live by cleaning up and disposing of the winter's collection of trash and debris during Spring Clean-up Week.

#### FARM SAFETY WEEK

(The last full week in July)

This national Week, proclaimed by the President of the United States each year, is sponsored by the National Safety Council in cooperation with the United States Department of Agriculture. Its chief aim is to educate farm people to work and live safely throughout the entire year. Through an intense publicity and informational campaign during the Week, farmers are aided in learning what accident hazards lurk in their everyday surroundings and what they can do to correct or remove them. Farm people are urged to participate in local activities and to do everything in their power to reduce the huge toll in property and lives claimed by accidents on the farm each year.

#### FIRE-PREVENTION WEEK

(The week including October 9, of each year)

This national Week annually designated by Presidential proclamation is sponsored by the National Fire Protection Association with the United States Department of Agriculture cooperating. This Week, observed in practically every city and town in the country, provides farm people with an opportunity to take part in the national campaign for fire safety. It also serves as a reminder to farm people to remove or correct those fire hazards that exist on their farms. Fire-Prevention Week, coming just at the beginning of the winter heating season, is an excellent time to check heating appliances and make certain they are in safe operating condition.

If each of the above three Weeks are not observed in your community, you may obtain additional information from either of the sponsoring agencies. You will be helping yourself as well as your community by taking an active part in organizing local programs for the three special Weeks as well as for the remainder of the year.

![](_page_35_Picture_0.jpeg)