

The Farm



Accident Situation in 1948

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Estimates contained in this article are based on three sample surveys conducted by the Bureau of Agricultural Economics of the United States Department of Agriculture. The surveys were designed to obtain various items of agricultural information in addition to accidents. The farms sampled were those found in a carefully selected cross-section of small areas throughout the country. In all, 35,892 interviews were made with farmers, each of whom was asked to report on the accident experience for persons living or working on his farm, during the part of the year immediately preceding the survey. A total of 1,927 accidents were reported. For the months October through December, data related to the year 1946 and for the other 9 months, to 1948. For simplicity, throughout this report, results are referred to as relating to 1948, as it is assumed that the accidents occurring in the last quarter of 1946 are representative of those for the same quarter of 1948.

Throughout this report, only injuries resulting in one day or more lost from regular activities are counted as accidents.

During 1948, at least one resident out of every six farms was the victim of an accident involving one day or more lost from regular activities, according to estimates of the Bureau of Agricultural Economics based on three sample surveys. The surveys also indicated that at least \$36,000,000 were spent last year for medical, dental, and hospital care resulting from accidental injuries to farm people. This estimate does not include the costs of accidents to people who were killed or who suffered permanent total disabilities, nor the value of lost time, which totalled about 17,000,000 days. Reports of time lost averaged about 20 days per accident. Medical care costs, as reported, averaged \$43 per accident, and about a fourth of such costs were covered by insurance.

Falls were reported as the leading type of accident to farm people in all regions. They accounted for a fourth of all accidents. Accidents involving machines and those involving animals were next, each accounting for about an eighth of all accidents to farm people.

Seventy-two percent of all accidents to farm people, it is estimated, occurred on the farm—16 percent in the farm home and 56 percent elsewhere on the farm. Of the 28 percent of accidents occurring to farm people off the farm, 11 percent occurred on roads or streets. The other 17 percent of accidents occurring off the farm included industrial accidents suffered by farm people who were working in factories and accidents suffered by children in games at school.

Fifty-four percent of the injuries reported were sustained while the victim was engaged in farm work. Farm

accidents reached a peak in September, when both farm work accidents and recreational accidents were sharply up. Six percent of all the accidents reported caused only 1 day of lost time, but another 5 percent resulted in more than 2 months lost each.

Males had an accident rate over three times as great as females, and males in the age group 25 to 44 years had the highest rate.

Regional Differences

The South showed the lowest rate of accidents with 27 out of every 1,000 of the farm population suffering a disabling injury at some time during the year. The rate for home accidents in the South, however, was about equal to the national rate. Hand tool accidents were the only type for which the national rate was exceeded in the South. The accident rate was slightly below the national level in the Northeast, and considerably above the national level in the North Central region and West. The North Central region had the highest rate for machine and motor vehicle accidents, and the lowest rate for hand tool accidents.

Average costs ranged from \$34 in the South to \$66 in the Northeast. The low average in the South was partly due to the very low incidence of motor vehicle and machine accidents in the South. These are the two most costly types of accidents. However, accidents of nearly all types were reported as having lower costs in the South and higher costs in the Northeast than elsewhere. The South was also lowest in extent of insurance, with 16 percent of medical costs covered, while the West, with 37 percent, was highest.

Farm Work Accidents

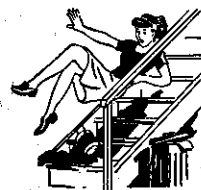
Of those accidents to farm people which actually occurred on the farm about three-fourths were accidents which happened while the person injured was engaged in farm work. Chores accounted for more than a fourth of the farm work accidents in the months from January through September, the only part of the year

for which separate information was obtained on chore accidents. When the farm work accidents are related to the number of persons working on farms, a rate of 44 disabling injuries per 1,000 working is obtained for the United States. The South was lowest with 35 and the North Central region highest, with 56 accidents per 1,000 working.

Among farm work accidents, the accident rate for falls exceeded those for machines and animals by only a small margin. Hand tools were fourth as a cause of farm work accidents. The accident rate per 1,000 working varied only slightly throughout the year but was highest in the July to September quarter.

Accidents by Type

1. Falls



Falls were first among the types of accidents in frequency of disabling injuries caused, and second in severity as measured by average time lost. Twenty-six per-

cent of all falls occurred in the home and 6 percent on roads or streets.

Falls from vehicles and those due to slipping or tripping were important categories for all age groups. Falls accounted for about 40 percent of accidents to children under 5, who usually fell from chairs, beds, moving vehicles, or by tripping over objects. Children 5 to 13 suffered most of their falls while playing. For those from 14 to 24 most of the falls also occurred during recreational activities such as bicycling, skating, and playing baseball or basketball. Older members of this group suffered falls from wagons, trucks, and hay mows.

Falls occurring on stairs or steps and those resulting from slipping on ice were a source of very few disabling injuries for those under 24, but were important for all age groups after 24, and made up a particularly large proportion of falls experienced by women. For persons of 25 to 44

years, over a fourth of all falls were from vehicles, usually trucks or wagons. For persons over 44, a tenth of all falls resulted from slipping on ice or snow and about a fourth were other falls which did not involve a drop from one level to another. Persons over 65 were the most liable to falls, with one out of every 75 such persons suffering a disabling fall sometime during the year. This was more than twice the rate for people under 45.

The large number of unclassified falls were cases where the report merely stated that the person fell. Probably most of these were falls not involving a drop from one level to another. Besides the falls classed as such, many falls are classed under other types of accidents. For example, those associated with machinery, animals, and moving motor vehicles appear under those types.

2. Machines



Machinery accidents in the youngest age groups involved children playing around machines of all kinds, usually when the machines were in operation. Tractors accounted for 28 percent of all machinery accidents in the surveys, and nearly 4 percent of all accidents to farm people. Cranking tractors was the action most frequently reported to result in injuries, usually sprained or broken wrists or arms. Following in order of frequency were injuries sustained while attaching other implements to tractors, being struck or run over by tractors that tipped over or reared, and jumping or falling off tractors. Combines and threshing machines accounted for about a third as many accidents as tractors. Corn pickers and corn shellers together accounted for 6 percent of machine accidents. Four of the corn sheller accidents resulted in loss of fingers or hands. Home machinery used chiefly by women accounted for only 3 percent of all machinery accidents.

The large category of other and unclassified machine accidents includes a variety of farm machines such as cultivators, ensilage cutters, corn elevators, manure spreaders, and various specialized harvesting machines, as well as the industrial machinery accidents occurring to farm people working off farms.

3. Animals



Horses and mules were exceeded only by autos and trucks among the specific agents causing farm accidents. They accounted for 7 percent of all farm accidents, and horses were responsible for by far the greatest proportion of this

total. Persons under 24 were most often riding the animals when they were thrown, fell off, or had the animal fall with the rider. Persons over 24 were more often handling the animals when injured through being kicked, having a foot stepped on or sustaining injuries trying to control runaways. Cows and steers accounted for 3 percent of all farm accidents. Kickings were the most frequent occurrence in accidents involving cows and steers, but many other kinds of injuries were also incurred in the handling of these animals. Bulls were responsible for less than 1 percent of all farm accidents. Dogs caused a still smaller number.

4. Motor Vehicles



About a tenth of all accidents to farm people were motor vehicle accidents, but these accidents accounted for 14 percent of the time lost and medical costs of

all accidents. Persons in the 14 to 24 year age group had the highest motor vehicle accident rate. Children were most often the victims of pedestrian accidents, which generally occurred when they were going to or from school. However, a third of the pedestrian accidents happened on farms, often when cars were backing or starting.

Only about two-thirds of the auto and truck accidents were reported in sufficient detail so that they could definitely be classed as pedestrian or nonpedestrian accidents. Of these, over three-fourths were nonpedestrian accidents, mostly collisions between two motor vehicles, but also including a considerable number of cases where cars or trucks overturned or ran off the road. About a seventh of the classified nonpedestrian accidents were suffered by small children falling from moving cars or by older persons falling or thrown from moving trucks. It is believed that the unclassified auto and truck accidents were chiefly nonpedestrian accidents.

5. Handling Objects

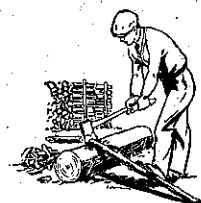


This type, of course, includes the handling of objects other than those covered more specifically under types previously discussed. Over half of the cases resulted from lifting heavy objects, such as logs, lumber or other construction materials, pieces of farm machinery, or sacks of feed. This category accounted for about 4 percent of all farm accidents, with back injuries resulting in a great majority of the cases. About one out of 15 of these accidents resulted in ruptures.

Sharp objects causing injuries covered a wide variety ranging from broken dishes to fish hooks. This is one of the few categories where breakage or defects in the item handled was responsible for a considerable number of injuries. About a

third of these accidents were the result of dishes or glassware breaking when being washed or handled. Rough objects causing injuries were chiefly wood and lumber.

6. Hand Tools



Axes were involved in nearly half of the hand tool accidents. It was most often reported that the person injured was engaged in chopping wood, when the axe slipped or glanced, or missed its object, causing many injuries to feet or toes. At least one out of every 10 accidents involving axes occurred when axes were not in cutting use, but were being carried or sharpened, or fell on people when they were apparently not carefully disposed of between usage.

Knives were second in importance among hand tools causing injuries, and pitch forks third.

Comments rarely indicated defective tools as the cause of hand tool accidents, but the inference generally was that the tools were not used with sufficient care or skill.

7. Stepping on or Striking Against Objects



Injuries from this type of accident were less severe than for any other type, but they nevertheless resulted in an average of 11 days lost per accident. One out of every six of these accidents occurred in the home. A considerable number of accidents caused by stumbling, jumping, and slipping are classified under this type because they resulted in sprained ankles rather than falls. Only about a third of the injuries in this type resulted from striking against objects.

8. Falling and Flying Objects



This type embraces subgroups of very diverse descriptions and includes a larger proportion of off-farm accidents than any other type, even motor vehicles. Accidents incurred in the cutting of trees and hauling or handling of logs or lumber predominated. About a third of the accidents involved in handling and hauling lumber occurred to farm people while they were working off farms, usually in saw mills or at lumbering. Falling tools, machinery, or equipment included several cases caused by jacks slipping from under farm machines or wagons, and also a number of industrial accidents. Injuries sustained when particles flew into persons' eyes also included a considerable number of off-farm work accidents.

9. Burns or Shock



Burns or shock were the least frequent type of farm accident, but these accidents were third in the average cost of medical care. Accidents of this type which occurred to the very young generally resulted from children playing around stoves or outdoor fires. Adults were most often injured when starting or tending stoves or oil burners. Often stoves exploded when being ignited with kerosene. Some explosions of gas stoves were also reported. All of the scaldings reported in the survey occurred to women or children. Sixty-two percent of all burns occurred in the home.

Sources of Error in the Farm Accident Surveys

Because of difficulties of remembering, the total number of accidents was undoubtedly underreported in the surveys, particularly those occurring to persons other than farm operators, those of lesser severity, and those occurring early in the reporting period. For these and other reasons the indicated total time lost, costs, and accident rates are probably too low, but it is believed that at least three-fourths of the accidents were reported.

In addition to the biases indicated in the preceding paragraph, results are subject to sampling errors which are greatest for categories having the fewest accidents. Thus, for example, the sample number of 476 falls has a sampling error of about 6 percent while the sample number of tractor accidents has a sampling error of about 15 percent.

Rates per 1000 farm population are based on January 1948 farm population, with age and sex composition taken from unpublished data relating to April 1948. Some inaccuracies in rates per 1,000 farm population result from the fact that the accident data are not exactly comparable with the farm population data, since accidents of nonresident farm operators and their families, as well as accidents happening to hired workers not living on farms, are included.

Separate indications of the numbers of fatal and permanent total disability accidents are not shown because there were only 23 fatal and 7 permanent total disability accidents reported in the surveys. These accidents were excluded from all computations of costs and time lost.

Farm Accident Survey Statistics

Table 1. Accidents to farm people and farm workers, 1948. Sample number of accidents, rate per 1,000 farm population, time lost and medical cost, by regions and by type of accident

Region or Type of accident	Sample number of accidents	Rate per 1000 farm population	Excluding fatal and permanent total disabilities			
			Days lost		Medical cost	
			Total 1,000 days	Average per accident days	Total \$ (000)	Average per accident \$
Region						
Northeast	159	29.5	1,480	22	4,490	66
North Central	697	37.6	6,320	20	14,390	47
South	867	26.6	7,770	21	12,940	34
West	204	40.3	1,660	18	4,200	46
United States	1,927	31.3	17,230	20	36,020	43
Type of Accident						
Falls of persons	476	7.7	5,020	24	9,490	45
Machines	248	4.6	2,150	20	6,710	61
Animals	233	3.8	1,930	19	3,730	36
Motor vehicles	179	2.9	2,410	31	4,930	64
Handling objects	159	2.6	1,170	16	2,140	30
Hand tools	150	2.4	880	13	1,710	25
Stepping on or striking against objects	146	2.4	740	11	1,220	19
Falling or flying objects	102	1.7	860	19	1,840	41
Burns or shock	81	1.3	630	19	1,690	50
Other or unknown	153	2.5	1,440	23	2,560	40
Total all types	1,927	31.3	17,230	20	36,020	43

Table 2. Percent of medical costs of accidents covered by insurance, regions.

Region	% of cost covered by insurance
Northeast	33
North Central	24
South	16
West	37
United States	26

Table 3. Accidents to farm people and farm workers, 1948. Rate per 1,000 farm population by age and sex.

Age	Males		Total
	Females	Total	
Under 14	23	11	17
14 to 24	56	12	35
25 to 44	64	14	39
45 to 64	55	21	39
65 and over	47	20	35
Total	47	14	31

Table 4. Accidents to farm people and farm workers, 1948. Rates per 1000 farm population by place and type, for regions.

Place of accident	Northeast	North Central	South	West	U. S.
Home	4.1	5.0	5.1	5.5	5.0
Elsewhere on farm	16.0	23.3	13.4	23.4	17.4
Road or street	2.8	4.2	3.3	4.0	3.6
Elsewhere or unknown	6.6	5.1	4.8	7.4	5.3
Total	29.5	37.6	26.6	40.3	31.3
Type of Accident					
Falls of persons	8.9	9.4	6.5	8.8	7.7
Machines	4.6	6.8	2.2	4.7	4.0
Animals	1.5	4.3	3.3	7.3	3.8
Motor vehicles	2.3	4.0	2.2	3.8	2.9
Handling objects	2.2	3.0	2.3	3.3	2.6
Hand tools	2.9	1.3	2.8	4.0	2.4
Stepping on or striking against objects	2.1	2.7	2.3	1.7	2.4
Falling or flying objects	1.5	2.1	1.2	3.1	1.7
Burns or shock	.6	1.5	1.3	1.5	1.3
Other or unknown	2.9	2.5	2.5	2.1	2.5
Total	29.5	37.6	26.6	40.3	31.3

Table 5. Accidents to farm people and farm workers, 1948. Sample number and percent by type and agent.

Type & Agent (or other sub-group)	Sample no. of accidents	Percent of total for type	Type & Agent (or other sub-group)	Sample no. of accidents	Percent of total for type
Falls of Persons			Stepping on or striking objects		
Vehicles	91	19	Stepping on nails	42	29
Stairs or steps	39	8	Stepping on other sharp objects	21	15
Home furniture	18	4	Stumbling, jumping or slipping (other than falls)	24	16
Ladders	18	4	Striking legs, knees or arms	24	16
Hay mows	16	3	Striking fingers or hands	14	10
Floor openings	14	3	Striking eyes, face, head	12	8
Scaffolds	13	3	Other or unclassified	9	6
Trees	9	2	Total for type	146	100
Others from different level	45	9			
Total different level	263	55	Falling or flying objects		
Ice or snow	38	8	Trees or logs—cutting	22	21
Others on same level	108	23	Logs or lumber—other handling	22	21
Total on same level	146	31	Tools, machines or equipment	24	24
Unclassified	67	14	Particles flying in eyes	24	24
Total for type	476	100	Accidental shootings	9	9
			Other or unclassified	1	1
			Total for type	102	100
Machines					
Tractors	70	28	Burns or shock		
Combines & thresh. machines	22	9	Stoves, oil burners, heaters	16	20
Haying equipment	17	7	Hot water	16	20
Power saws	15	6	Ironing & other cooking	8	10
Plows, discs, and harrows	11	4	Gasoline	8	10
Wagons	10	4	Welding	6	7
Corn pickers	9	4	Acids, caustics, poisons	7	9
Corn shellers	5	2	Other or unclassified	20	24
Wash. & other home machines	7	3	Total for type	81	100
Other or unclassified	82	33			
Total for type	248	100	Other or unknown types.	153	100
			Total all types	1,927	—
Animals					
Horses or mules	134	58			
Cows or steers	55	24			
Bulls	15	6			
Dogs	12	5			
Other or unclassified	17	7			
Total for type	233	100			
Motor vehicles					
Auto and truck total	149	84			
Pedestrian	18	10			
Non-pedestrian	62	35			
Collisions	37	21			
Running off road or overturning	17	9			
Passenger falls	8	5			
Unclassified auto or truck	69	39			
Motorcycle	10	5			
Vehicles not in motion	16	9			
Other or unclassified	4	2			
Total for type	179	100			
Handling objects					
Heavy objects	84	53			
Sharp objects	26	16			
Bulky objects	12	8			
Rough objects	11	7			
Other or unclassified	26	16			
Total for type	159	100			
Hand tools					
Axes	70	47			
Knives	32	21			
Pitch forks	12	8			
Hammers	8	6			
Hand saws	7	4			
Other or unclassified	21	14			
Total for type	150	100			

Table 6. Farm work accidents, 1948. Rates per 1,000 working, by region, person injured and type.

Region	Rate per 1,000 working
Northeast	48
North Central	56
South	35
West	54
United States	44
Person Injured	
Farm operators	45
Members of family	51
Hired workers	28
Total	44
Type	
Falls of persons	9.3
Machines	8.1
Animals	8.1
Hand tools	5.0
Stepping on or striking against objects	3.7
Handling objects	3.6
Falling and flying objects	2.3
Burns or shock	1.1
Motor vehicle	.8
Other or unknown	2.0
All types	44.0

Table 7. Accidents to farm people and farm workers, 1948. Rates per 1,000 farm population by age and by sex, for types of accidents.

Type of accident	Age group					Males	Females	Total
	Under 14 yrs.	14 to 24	25 to 44	45 to 64	65 yrs. & over			
Falls of persons	5.7	5.0	7.2	11.8	13.3	9.9	5.4	7.7
Machines	1.5	4.9	5.8	5.2	3.3	6.9	.9	4.0
Animals	1.9	3.9	5.2	4.1	5.6	5.9	1.5	3.8
Motor vehicles	1.4	4.7	2.9	3.9	2.0	4.0	1.7	2.9
Handling objects	.5	2.8	4.0	4.1	1.9	4.3	.7	2.6
Hand tools	1.2	3.1	3.7	2.1	2.3	4.2	.6	2.4
Stepping on or striking against objects	2.0	2.5	3.0	2.2	2.2	3.2	1.5	2.4
Falling or flying objects	.3	2.5	2.2	2.0	2.0	3.1	.1	1.7
Burns or shock	.9	2.2	1.6	1.1	.8	1.6	1.1	1.3
Other or unknown	1.6	3.6	3.2	2.4	1.4	4.1	.8	2.5
Total	17.0	35.2	38.8	38.9	34.8	47.2	14.3	31.3

Table 8. Accidents to farm people and farm workers, 1948. Type and place of accident by activity of injured person.

Type of accident	Sample number of accidents	Percent occurring in each activity				Total %
		Farm work %	House-work %	Recreation %	Other or unknown %	
Falls of persons	476	47	12	21	20	100
Machines	248	79	3	3	15	100
Animals	233	83	—	12	5	100
Motor vehicles	179	11	—	36	53	100
Handling objects	159	54	4	8	34	100
Hand tools	150	80	1	5	14	100
Stepping on or striking against objects	146	60	3	18	19	100
Falling or flying objects	102	55	1	9	35	100
Burns or shock	81	31	35	17	17	100
Other or unknown	153	32	3	31	34	100
Total	1,927	54	6	17	23	100
Place of accident ¹						
Home	308	25	33	19	23	100
Barn	417	89	—	6	5	100
Elsewhere on farm	659	82	—	11	7	100
Total farm (outside home)	1,076	84	—	9	7	100
Road or street	219	15	—	39	46	100
Elsewhere or unknown	324	11	—	25	64	100
Total	1,927	54	6	17	23	100

¹ The separation between barn and elsewhere on the farm is based on data for only the months January through September.

Table 9. Accidents to farm people and farm workers, 1948. Type of accident and activity of injured by quarters of the year.

Type of accident	Sample number of accidents	Percent occurring in each quarter of year				Total %
		Jan. to March %	Apr. to June %	July to Sept. %	Oct. to Dec. %	
Falls of persons	476	25	23	32	20	100
Machines	248	15	28	30	27	100
Animals	233	19	29	29	23	100
Motor vehicles	179	27	25	25	23	100
Handling objects	159	18	32	34	18	100
Hand tools	150	19	24	31	26	100
Stepping on or striking against objects	146	16	26	47	11	100
Falling or flying objects	102	25	31	33	11	100
Burns or shock	81	28	23	25	19	100
Other or unknown	153	34	17	23	26	100
Total	1,927	22	26	31	21	100
Activity of injured						
Farm work	1,054	19	26	33	22	100
Housework	110	20	26	25	29	100
Recreation	318	22	30	33	15	100
Other or unknown	445	31	21	26	22	100
Total	1,927	22	26	31	21	100

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