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THE THRASHING RING IN THE CORN BELT.¹

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FARMERS have long recognized the advantage of exchanging help as a means of securing larger crews than the farm affords. The plan of organizing definite thrashing rings or circles, which guarantee those inside the club the amount of help they need, has been tried in different sections of the Corn Belt during the last decade or more. At the same time, cooperative ownership and management of thrashing machinery has been tried with more or less success in many communities.

To learn the facts concerning ring ownership and management of thrashing machines as a scheme for saving labor and money, and to determine the present status of the movement, the writer visited several ring officers in the Middle West to secure first-hand information. Then letters were sent to manufacturers of thrashing machinery, requesting the addresses of ring secretaries who had bought outfits. In this way, over 700 names of ring members were secured, representing all the States of the Middle West. Some of the rings dated back 14 years, but most of them were organized within the last few years. A questionnaire was sent to 300 of these men, calling for information concerning their experience. Most of the 80 replies received came from Ohio, Indiana, Michigan, Illinois, and Iowa, where the results of this investigation are applicable.

OLD METHOD FAULTY.

The old practice of custom thrashing, as commonly followed in the eastern part of the grain belt, is often very unsatisfactory. The outfits competing for the thrashing work of a neighborhood may be inadequate, and some of them may be operated after they are practically worn out. As a re-

¹ Thanks are extended to H. R. Tolley, Office of Farm Management, for criticism and suggestions followed in the preparation of this article.

sult jobs are contracted a long time in advance, irregular runs are necessary, the manner of handling the work is often unsystematic, breakdowns due to poor equipment are frequent, and more or less dissatisfaction is general.

In reply to the question, "Why did you find it advisable to buy an outfit?" the following replies were most frequently given by ring members:

"Hard to get a good rig, and had to wait till it came."

"So we could thrash before our grain spoiled."

"To get our thrashing out of the way of other work."

"To save labor and shorten the thrashing season."

"Few good outfits in our neighborhood."

The first and second replies are the ones usually given, but all of them indicate that the conditions were unsatisfactory before rings were organized, and that the farmers were compelled to act. Cooperation in contracting the jobs of a given neighborhood is essential, otherwise the farmers do not know the plans of the neighbors with whom they exchange labor, and the thrashing rig may come and go several times during the season. This may make it necessary to shift a wagon box and a hay ladder, leave a home job incomplete, or otherwise change from one job to another several times, entailing a waste of labor and upsetting the farm schedule. The real difficulty comes, however, when two or more rigs are ready to thrash on adjoining farms and it is necessary to secure the thrashing crews with exchanged help.

Without cooperation, farmers are not in position to demand the services of a good custom rig at a definite time, and as a result much valuable time is lost through delay, and the grain must either be put in the barn or exposed to the weather for an undue length of time.

COOPERATIVE METHODS.

Most of the difficulties which usually cause communities to buy thrashing outfits can be eliminated when a man is selected to act as an agent for all the farmers of a given neighborhood. Such an agent can usually hire the services of a good thrashing rig and be in a better position than the individual farmer in demanding the best of service. In some instances that were reported, this was done, in others it was found to be impracticable, while in other cases the

farmers decided, without trying the collective hiring plan, that the purchase of an outfit was the only solution of their problems.

Thus there are two general methods of ring¹ cooperation. The more common method involves the hiring of the outfit, and the other its purchase. In either case a well-organized ring is essential, composed of a number of farmers working as a unit for the purpose of systematic cooperation in the busiest season of the year, when time is precious.

The possible advantages of ring cooperation are partially shown from some of the many replies from men with considerable experience. The following are typical:

“You can thrash when ready and get done earlier for fall work.”

“You know you will have your grain thrashed in good time. It draws neighbors closer together” (7 years' experience).

“Can thrash when ready” (6 years' experience).

“Can thrash sooner and always know whose turn comes next” (10 years' experience).

“We can thrash when we are ready and it does away with lots of help.”

SYSTEMATIC COOPERATION SAVES LABOR.

The advantages of systematic cooperation, as usually cited, whether the thrashing rig is owned or hired by the circle, may be summarized briefly as follows: (1) The thrashing order is so arranged that the least possible time is lost in moving from farm to farm. (2) As a job nears completion, the first men through, knowing their assignments and the next place, may go immediately and have the grain ready to thrash by the time the outfit arrives and is set. (3) No time is lost either in contracting an outfit or in securing a thrashing crew, for that is arranged for in advance. (4) Certain men may be utilized most efficiently by assigning them to one kind of work for the season. (5) Unless the weather prevents, the thrashing continues until all the jobs are completed in the circle; thus little extra work is required in

¹ In this article the word “ring” is used to designate the number of men or the farms required to supply the labor needed in running a thrashing outfit, regardless of its size.

shifting wagon boxes or hay loaders. (6) The labor of putting the crop in the barn can be dispensed with. (7) The thrashing season is greatly shortened. (8) The ordinary farm work is usually postponed until the thrashing is all done, and thus the farm labor schedule is not seriously interfered with. As a result, the oats stubble can be plowed considerably sooner, the seed bed for wheat can be more thoroughly prepared, there is more time to haul and scatter manure and to attend to early fall work, and thus the farmer has a better chance to keep ahead of his work.

SUCCESSFUL COOPERATION RELIEVES ANXIETY AND WORRY.

Membership in a thrashing ring serves to relieve the farmer of much anxiety and worry: (1) Each member is assured that a machine for doing his work has been arranged for. (2) The chances of losing his grain are reduced to a minimum and a smaller percentage is lost or damaged. (3) A member can calculate approximately his time to thrash, for he knows the order of thrashing and the acreage ahead of his, and the women can plan accordingly. (4) The plan usually guarantees him most of his necessary help. (5) The credit for labor differences may be properly adjusted. (6) The cooperative spirit may extend to other lines of work and its influence may be felt in a social way, as, for instance, the thrashing season in a number of rings ends with an annual picnic.

PROBLEMS INVOLVED IN RING OWNERSHIP AND MANAGEMENT.

The success of any cooperative movement depends largely upon the care with which plans for the organization are laid. The members must meet and discuss the business involved, and mutually agree upon the principal issues. Minor details can be decided easily from time to time. The ring as a whole acts just as a single individual. To be successful, each member must be willing to submit to the rule of the majority, and should know exactly what the plans are and what he is expected to do.

SIZE OF THE RING.

A circle should include at least as many farms as would be necessary to supply the hands needed to do a job of thrash-

ing most efficiently. That number will depend largely upon the capacity of the outfit. When the thrashing ring is one of the largest, and the farms have a very large grain acreage to thrash, the purpose of cooperation may be defeated, for the help can not be handled to the best advantage, the last jobs are too long postponed, and too much time is lost in exchanging help at a distance. In case the machine is idle, because of a breakdown or bad weather, too much time is lost with a large thrashing ring. Only a few of the very large rings have proved successful. In most cases circles with a combined acreage of 1,000 acres or more to thrash have found it advisable to reorganize in smaller units.

The variation in the size of the different thrashing rings can be best illustrated by the following classification, for which data are at hand from 70 rings:

Table showing relation of size of ring to acres of grain and size of separator and crew.

Size of ring.	Number of ring members.	Number of rings.	Total grain acres in ring.	Length of separator cylinder in inches.	Total number of hands.
Very large.....	15 to 20....	7	1,000 to 1,600..	36 or over....	30 to 40.
Large.....	12 to 15....	9	700 to 1,000....	32 to 35.....	25 to 30.
Medium.....	8 to 12....	28	400 to 700.....	28 to 31.....	12 to 20.
Small.....	3 to 6.....	26	160 to 300.....	Under 28....	6 to 9.

The above classification is only an arbitrary one, but it will illustrate the fact that thrashing rings do vary considerably in size, and that there are a number of important factors to consider when deciding the size of a thrashing unit.

Possibly the first step in ring organization is to decide which farms can best unite for thrashing work. The column headed "Number of ring members" shows the usual number of members or the cooperating farms belonging to the different-sized rings. The column headed "Total grain acres in ring" includes all the small grains to thrash. In some localities oats may make up the greater part of this area. The column headed "Length of separator cylinder in inches" shows the different-sized machines corresponding to the various amounts of grain to thrash, and the last column gives the total thrashing help generally used.

With the data given in this table, one should be in a better position to decide how to start a thrashing ring. For example, 7 neighbors are considering the purchase of a thrasher. Together, they have as a usual thing about 280 acres of small grains to thrash, and can furnish at least 10 men with their regular help. If one of them has a good farm tractor, then a small separator with a cylinder under 28 inches in length will handle their grain very satisfactorily. The number of farms and the total grain acreage is not sufficient to justify the purchase of a very large separator.

Another glance at the classification of thrashing rings shows that as a general thing a very large circle with 15 to 20 members, or that number of farms, has 1,000 or more acres of grain to thrash within the membership, which requires a large separator with a cylinder 36 inches or more in length, and needs 30 to 40 men to help to do a thrashing job.

Thus it will be seen that the size of a ring may be shown by the number of members, the amount of grain to thrash in the unit, the daily capacity or size of the separator, or the amount of help necessary to operate the rig. The size of a ring can be best governed by limiting the number of cooperating farms and by the selection of a separator to correspond.

Under the column headed "Number of rings" in the above classification of rings, it will be seen that out of the 70 rings, most of which bought outfits the last 3 years, only 7 belong to the very large, 9 to the large, 28 to the medium, and 26 to the small-sized rings. This shows that the present tendency is toward the smaller thrashing units.

Advantages of the smaller rings.—Many advantages are claimed for the medium and small rings. They may be summarized briefly as follows:

A small group of men can be managed more efficiently than a larger one, and the venture is less hazardous and more harmonious.

It is easier to find a capable manager. The ordinary farm business does not train farmers, as a rule, in the management of large numbers of men. Several rings which owned outfits run with 30 or more helpers failed for want of a manager capable of handling successfully so large a group of men.

With the small ring there is less loss of time when the rig is idle owing to a breakdown or to bad weather; the distance to go to return help is not so great; and the difficulties, in general, are considerably less.

The season's work is greatly shortened; the grain is not so liable to loss; the labor of putting the crops in the barn is saved; and the straw can be sheltered in better shape.

The investment in a large shed may be considerably reduced or dispensed with entirely.

The number of men to board is considerably less. All the men can sit at one table and the women's work is not so burdensome.

A small group of men can assemble more readily than a larger one, and fewer rules for governing the organization are necessary. In many of the small rings the members meet and mutually agree without any formal organization. This arrangement is possible when a small rig is owned by 4 or 5 farmers.¹

¹ As a further guide in the proper selection of the power to run a thrashing rig, the following information is inserted:

"On the basis of wheat yielding at the rate of 20 bushels per acre, and medium heavy straw, the maximum capacity of the different machines would be about as follows, and approximate power necessary to operate also as follows:

Approximate maximum capacity and power necessary to operate different sizes of separators.

Size of thrasher.	Bushels per hour.	Horsepower required.	Size of thrasher.	Bushels per hour.	Horsepower required.
18 by 36	60	6	32 by 54	150	16 to 18
22 by 40	75	8 to 10	36 by 60	175	18 to 20
24 by 42	100	10 to 12	40 by 66	200	20 to 25
28 by 48	125	10 to 16			

"There are records where much more has been thrashed in the time given, but for steady run, the above is a good average and aimed to be conservative." (National Gas Engine Association, Standards and General Engineering Data, Vol. I, page 5A.)

PROPERTY OWNED IN PARTNERSHIP.

The property owned in partnership varies for the different rings. The following list includes most of the machinery items that are ever owned in partnership, but usually not all of these are owned by any one ring: Engine (with water tank when steam is used); a separator and clover huller; corn sheller and ensilage cutter; hay baler; shed for housing the property.

The members must decide for themselves what property it is advisable to own in common. In several instances, the ring found it best to hire the services of an experienced man who furnished either the power or the thrashing machine, assumed the responsibility for the outfit, and paid half of the expenses for half of the receipts. All members paid the customary rates for thrashing.

Many of the Illinois rings did not buy clover hullers, as clover is not a very profitable seed crop there. In other cases, either a clover attachment for the separator or a clover huller was included in the outfit. Likewise, the practice of shelling corn is quite common in Illinois and Iowa, but uncommon in other States. The advisability of purchasing a corn sheller, a hay baler, or an ensilage cutter must be determined by the local conditions.

Several rings found it advisable to use large wagon covers made of heavy duck treated with a waterproofing solution. In some cases, these were bought in common, in others each member was required to furnish one. The tarpaulins are kept in boxes under the wagon rack. This makes it possible for the loading to continue as long in the evening as the thrashing, and the covered grain insures an early start the next morning. The coverings are helpful also in case of a shower.

Frequently each member is required to furnish 10 sacks in good repair for ring use; sometimes sacks are owned in common. As a usual thing it is more satisfactory for property of this kind to be owned and cared for by the different members, as the equipment required by the individual varies with the amount of grain he has to thrash.

THRASHING FOR NON-MEMBERS.

In response to the question, "Do you thrash for outsiders?" practically all rings answered, "Yes," but the acre-

age thus thrashed is rather limited. In most cases, outside work is done for accommodation or to enlarge the ring in order to secure all the necessary help. Rather than let a neighbor's crop spoil, the ring outfit may thrash for a few farms. Outside work is done at the customary rates.

USING THE RING PROPERTY FOR PRIVATE PURPOSES.

It sometimes happens that a member may desire to use some of the partnership property for personal use, for example, pulling hedge with the engine, or using the engine to bale hay or saw wood, when the baler and saw are private property. Questions of this kind arise occasionally, and the members usually agree on a fair price to charge for the use of the property in question. One ring charged \$5 a day for the use of the engine, with no oil or fuel furnished.

CAPITAL INVOLVED AND PLAN OF PURCHASE.

The amount of capital necessary to finance a ring depends upon the amount of equipment included in the outfit and the kind of machinery bought. When a ring buys all the machinery new—separator, power, huller, and possibly a corn sheller or a silage cutter—and builds a shed to house the same, the total capital required usually amounts to \$3,000 or \$4,000 under usual conditions. More capital is required at present, since the war prices of machinery are about 60 per cent higher than normal. In some cases reported the amount was less, as second-hand outfits were obtained at a very reasonable price.

When it is possible for the company to hire a good engine or some other part of the equipment it may not be advisable to buy. In some cases, the engine or separator is hired from an outsider, and the common investment is thereby lessened. Where a tractor is a part of the farm equipment, it is often used to supply the power. Then the purchase of a small thrasher, especially made for the purpose, requires but a comparatively small outlay and the total investment is not excessive.

In reply to the question, "What was your plan of purchase?" most of the rings reported that each member assumed an equal share and the note given in payment for the

outfit is signed by each. Sometimes the tenant and the landlord jointly purchase a share. In this way, there is no difficulty in financing the enterprise. In a very few cases reported, shares of different sizes were issued and the members bought them in unequal amounts.

Each member is usually charged the customary rates for thrashing, and the gross receipts represent all the money collected for the services of the outfit. After the ordinary expenses are paid, labor hire, repairs, fuel, and oil, the net proceeds are applied as payments on the note or given as a dividend after the note is paid.

PLANNING THE WORK IN ADVANCE.

It is customary in some rings to discuss the work of the season at the regular meeting before the thrashing begins, and definitely plan for it. The aim is to learn how each member can best help. Some are assigned to work in the field or on the wagons, others to handle the thrashed grain. Each man remains at his job throughout the season or is responsible for it. If he desires a change, he must find someone to take his place. Thus each one knows where he is to work and no time is required in making assignments at the different jobs. The same wagon beds or racks remain in use all season, and need not be transferred for each move. Usually each member agrees to furnish a water boy at his own place.

In some cases the members agree to begin work at 7 a. m. when the weather permits, have dinner at 12, and quit at 6 p. m., unless the job can be completed within half an hour.

The general practice is to charge the customary rates for thrashing, regardless of ownership. Those inside have the advantage of getting their work done first and of sharing in the dividends earned.

COOKING FOR THE HELP.

The old custom of boarding the help at the place where the machine happens to be at meal time is not satisfactory, especially when the whole crew can not sit at one table. The problem of cooking is not only a serious matter for the women, but the cost is no small item of expense. As a re-

sult of a breakdown or a change in the weather, the thrashing plans may be changed and the expense and work of preparing meals greatly increased. Several rings have discussed the meal question, and some have adopted the plan of carrying their dinner pails and horse feed. In this case meals are served to the machine crew only, though hot coffee is served to all hands. A number of others follow the plan of serving only the noon meal, all going home for supper. Any plan which will reduce to a minimum the expense, labor, and worry of thrashing should be worthy of consideration.

ARRANGING FOR THE THRASHING HELP AND SETTLING THE
DIFFERENCE IN THE LABOR FURNISHED.

The amount of help to be supplied by the different members is determined in various ways. Each one is usually expected to furnish help in proportion to the amount of thrashing he has to do. The number of men is sometimes based on a given grain acreage, for example, a man to 20, 30, or 40 acres. It is rather difficult to form a good working ring and have each member furnish precisely his proportionate share of help. It is more satisfactory to require each man to furnish a definite amount of help at each job, and then adapt some plan of settling the difference in the amount of labor furnished. In some rings the members are left to adjust that between themselves, each member endeavoring to furnish as much help as he receives, but this method is seldom entirely satisfactory.

The plan followed in a number of other cases calls for a timekeeper to keep a record and make a settlement for the members. Of several methods of doing this perhaps the easiest and most practical is as follows:

Each member is expected to furnish a given number of men and teams for each job in the ring, which may be based on his acreage to thrash. A day's work for a man shall be regarded as 2,000 bushels of oats and its equivalent in wheat or rye. (For practical purposes, to determine this equivalent, divide the oats yields by 2, for most outfits thrash oats about twice as rapidly as wheat or rye.) This plan of determining a day's work does not compel the timekeeper to keep tab of the hours of labor actually worked by the dif-

ferent members. He must keep or secure a record of the total grain thrashed for the different members, and record the number of helpers furnished on each job. In case of a breakdown, the loss of time is equally distributed, for the labor credit is based on the actual grain thrashed. The following model form shows the summary of a complete settlement of a season's work in one ring:

Summary of complete settlement of a season's work in one ring.

	Ring members.								Totals.
	King.	Ott.	Gray.	Kell.	Rowe.	Todd.	Eby.	Hill.	
Bushels of oats.....	1,800	750	1,150	620	1,360	1,800	1,200	1,000	9,680
Rye or wheat.....	600	420	560	460	510	640	700	600	4,490
Regular men furnished..	2	1	2	1	2	2	1	1	12
Total credit (days).....	18.6	9.3	18.6	9.3	18.6	18.6	9.3	9.3	111.6
Credit ^a	\$55.80	\$27.90	\$55.80	\$27.90	\$55.80	\$55.80	\$27.90	\$27.90	\$334.80
Debit ^b	54.00	28.62	40.86	27.72	42.84	55.44	46.80	39.60	335.80
Balance.....	+1.80	-.72	+14.94	+.18	+12.96	+36.00	-18.90	-11.70

^a For labor at \$3 per day.

^b For grain thrashed at 1.8 cents per bushel (for labor only).

It will be seen that the amount of grain thrashed for each member is placed directly under his name. For example, Mr. King had 1,800 bushels of oats and 600 bushels of wheat. The third line shows the regular men furnished at each job. Mr. King and three others who had large acreages of grain each furnished two men and the others one each. In the column headed "totals," the total amount of oats thrashed for all the members is 9,680 bushels and of wheat or rye 4,490 bushels, equivalent to 8,980 bushels of oats, or a grand total equal to 18,660 bushels of oats. Dividing this total by 2,000, the number of bushels considered as a day's work for a man, we have 9.3 days, which represents the time to do all the thrashing in the circle. Now since Mr. King and three other men furnished two men at each job, each should get a labor credit of 2 times 9.3 days, or 18.6 days, and the other members should get 1 time 9.3 days, or 9.3 days' credit each. This total credit in days is given in the fourth line.

The next line gives the credit in money for the time each one spent. While \$3 per day was the value of the harvest help last year, in normal times it is considerably less. Its value must be governed by the current wages, so that each member will be willing to supply his share of helpers. Thus, Mr. King got credit for \$55.80 ($\3×18.6), and the others accordingly. The total credit for all the labor is \$334.80. The timekeeper then charges each member according to the grain he has had thrashed. This is determined by dividing the labor credit (\$334.80) by the grand total of bushels of oats thrashed and its equivalent in wheat or rye. Thus each member is charged 1.8 cents per bushel ($\$334.80 \div 18,660$). From this is figured each member's debit for labor on grain thrashed. Thus Mr. King, having 1,800 bushels of oats, plus the equivalent of 1,200 bushels more in wheat (600 bushels wheat $\times 2$), would owe the ring \$54 for labor. But his credit for labor as given directly above in the same column is \$55.80. Thus he has no actual outlay in money; on the contrary there is due him \$1.80 for surplus labor. A glance at the various amounts in the same line will show how nearly each one supplied his share of work. Messrs. Ott, Eby, and Hill are in debt to the ring as shown by the minus signs, and after the timekeeper collects from them he can pay Messrs. King, Gray, Kell, Rowe, and Todd, who furnished more than their share of labor. The credit will equal the debit if the per-bushel charge is the result of an exact division. In this example the settlement shows a final balance of 98 cents ($\$31.22 - \30.24).

This plan necessitates the handling of a very small amount of money, in fact, only the amount which represents the balance of the labor furnished. The money handled in this way by the timekeeper must not be considered in connection with that handled by the treasurer.

Each ring must determine for itself the amount of grain to consider as a day's work and a fair value for the labor. To settle differences in the amount of horse labor furnished, a team may be given the same or half the credit as that of a man and be included in the record in the fifth line of the above model form.

MANAGEMENT OF THE MACHINERY.

In response to the question, "Do you hire an outsider to take charge of the outfit?" the replies show that the general practice is for the manager or captain to hire all the necessary help to operate the thrashing rig, to keep their time, and issue an order for their pay. When this is done, if the services of the men are not satisfactory, they can be dismissed without trouble in the circle. In several instances, however, the engine and separator are operated by members of the ring at a given wage, and each assumes the responsibility of his machinery. In other instances the manager operates the engine and hires outsiders for the other regular work. Whenever members are detailed with the outfits they are paid fixed wages and are expected to take better care of the property than would someone with no financial interest in it.

ARRANGING THE ORDER OF THRASHING.

The replies to the question as to how the thrashing order and route is determined may be summarized as follows:

"Alternate ends of run yearly."

"Quitting place, beginning place next year."

"Last in wheat run, first in oats."

"Skip four jobs each year."

"From 1 to 10—10 to 1 in the circle."

"Whoever is ready first."

The local conditions must be studied before the thrashing order and route can be best arranged. The first three methods above cited are the most common. It is not a difficult matter to make a good route when the farms are located on a road which incloses a section of land. Unless there is a considerable variation in the time when a certain grain crop can be thrashed, due to variety differences or soil conditions, the order should be definitely arranged beforehand so as to avoid trouble and enable the members to plan accordingly.

RING REGULATIONS.

Whether a ring owns its outfit or not, there is need of a written agreement among its members. For practical purposes, it should be brief. The main features in the agreements of cooperation are usually something as follows:

SECTION 1. That the name of this ring shall be _____.

SEC. 2. That the officers shall be president, secretary-treasurer, manager, and timekeeper, elected for one year.

SEC. 3. Duties of officers:

a. It shall be the duty of the president to call meetings and to preside at the same; to act as chairman of a committee to settle disputes which may arise between members, the other two committee members to be selected by the disputing parties.

b. It shall be the duty of the secretary-treasurer to keep a record of the business transacted at the regularly-called meetings in a book provided for the purpose; to keep an account of the number of bushels of grain thrashed on each job and to submit a statement of the thrashing bills at the second regular business meeting; to keep account of all money received and paid out and to keep receipts or bills for the same.

c. It shall be the duty of the timekeeper to keep a record on each job of the men and teams furnished by each member; to get from the secretary-treasurer at the end of the season figures on the total number of bushels of grain thrashed and to submit at the second regular meeting a statement showing the amount of credit each member may have for extra work or the amount he may owe when he has not supplied his share of help. [This is based on the prices given in section 6 and may be calculated according to the method described on pages 257 to 259.]

d. It shall be the duty of the manager or captain, when the rental plan is followed, to secure the services of the thrashing rig designated by the ring and to arrange definitely the time when it must begin work, or, if the outfit is owned by the ring, to be responsible for its management; to hire the men to operate the machinery in case they are secured outside the circle, to direct the work in all details—looking after the necessary supplies of fuel, oil, and repairs—to change men to different jobs if found necessary; to keep an account of the sacks, the canvas, or any property of this kind and to return the same to owners for repairs. He shall treat all members in a courteous manner and endeavor to avoid quarrels and disputes by just decisions and fair treatment.

SEC. 4. The owner of the grain shall be the sole judge as to the condition of his grain for thrashing.

SEC. 5. The per-bushel charge for thrashing grains shall be as follows, regardless of membership, unless otherwise changed: Oats, _____; barley, _____; wheat, _____; rye, _____, and clover, _____.

SEC. 6. That each member shall be given credit for man or team labor furnished at the rate of \$_____ per day each. That a day's work shall be based upon 2,000 bushels of oats or its equivalent in wheat or rye. Settlement for labor differences shall be made on this basis unless otherwise changed by the members.

SEC. 7. Wheat and rye shall be thrashed on the first round of the machine and oats on the second. Any member, if he prefers, may

wait and thrash all of his grain at the same time. The second round shall follow the first in reverse order unless otherwise changed. If a member for any reason loses his turn in either round, his turn shall come last, unless the members otherwise arrange.

SEC. 8. The thrashing order for wheat shall be as follows: -----
-----, and the reverse for oats.

SEC. 9. Three-fourths of the members shall constitute a quorum to do business, New members shall be elected by a majority vote of the total membership.

SEC. 10. Each member by signing the cooperative agreement of the ring thereby agrees to abide by the rules and regulations and will endeavor to work for the best interests of the club, and respond to a call for help from members in preference to outsiders. The penalty for violation of regulations may be the refusal of the other members to furnish help to the one in question. This action must be based upon the majority decision of the committee.

SEC. 11. Two regular meetings shall be held yearly, at -----, one the first Tuesday night in July and the other the third Tuesday night in September. The business of the first meeting shall be mainly that of formulating plans for the season's work. At this meeting the ring should (1) vote on the admission of new members, (2) arrange for the transfer of shares in case a member moves away, (3) make the necessary change in the thrashing order, and (4) make any desired change in the thrashing rates or the prices which govern the value of labor differences. The business of the second regular meeting shall be mainly the settlement of accounts and the election of officers for another year. The order of business should include: (1) The report of the secretary-treasurer, which may give a summary of all the grain thrashed and the total expenses and submit the accounts of the different members who are expected to pay cash or give a note for the same; (2) the submission of unpaid bills for payment; (3) the timekeeper's report on the total amount of labor furnished by each member and the account of each [a settlement for the labor difference is expected at this time or as soon as the work is all completed]; (4) miscellaneous business; (5) election of officers for the following year; (6) amendment of the regulations.

The above regulations embody most of the essential points covered in the different sets of agreements studied, and they are submitted mainly as a guide in getting a ring started. The duties of the various officers may be assigned as the members see fit. Likewise any of the provisions not applicable to a given organization may be modified or eliminated as the conditions may warrant.

RING OWNERSHIP AND MANAGEMENT OF THE THRASHING OUTFIT VS. RING HIRING.

Ring ownership necessitates more or less partnership capital with a financial risk, while the hiring plan requires no

investment whatever. Either form of organization demands a spirit of cooperation—the united action of several men engaged in the same business—which is the keynote of success in modern business. Any movement which encourages this tendency of cooperation among farmers is well worth while.

The ring-hiring plan of solving the thrashing difficulties is a very satisfactory method, providing a good outfit can be hired at the proper time, and providing it does not require the cooperation of too large a group of men. With the proper conditions, the ring can then secure most of the benefits of cooperation without any investment whatever, and the dissatisfaction which may arise from a common investment in property is eliminated.

RING OWNERSHIP OFTEN A NECESSARY MOVE.

The fact that ring ownership does involve difficulties which have caused several failures does not seem to hinder the spread of the movement at present. In many instances there seemed to be no other alternative, and during several years of experience many of the old difficulties of ownership have been overcome. The necessity for ring ownership in certain cases is evident from the following replies submitted in answer to the question, "Why did your members find it advisable to buy an outfit?"

"Unable to get an outside machine that was satisfactory."

"Hard to get a good rig and had to wait."

"Had to wait two or three weeks and then get a worn-out rig."

"Labor shortage to run a large outfit."

"To save the grain and thrash when it is fit."

In a number of instances, the farmers experienced the partial loss of a crop or had been seriously delayed in getting the thrashing done. Usually, it is not the high price of thrashing nor the desire to make it a money-making scheme that prompts the farmers to buy outfits, but a desire to own their rigs so they can thrash the grain when it is ready, save the larger percentage of it, put the straw under shelter in much better condition, and get the season's work finished sooner. This leaves more time for the regular farm work. If the thrashing can not be done cheaper, the difference is more than offset by the many advantages, and for this reason the farmers readily decide to make the venture.

USUAL OBJECTIONS TO RING OWNERSHIP.

No move which involves cooperation, even though no capital is involved, can be uniformly successful, for groups of men vary in their ability to hang together. The following replies received in answer to the question, "What is the worst objection to ring ownership?" show lack of complete harmony:

"Discord among members."

"Every member wants to thrash first."

"Letting the other fellow shoulder the responsibility and then finding fault with him."

"Too many members who are either kickers or slackers."

The 53 answers may be summarized as follows:

Lack of competent help, too large a ring.....	4
Dissatisfaction due to various causes.....	9
No objection with good management.....	2
No objection.....	38

The fact that 38 out of 53, or 75 per cent of the replies, indicated no objection to the ownership of rigs, is largely due to the more recent tendency to organize in smaller groups and thus avoid the main objections to the movement.

The one main cause of dissatisfaction has been too large a membership. This is shown in the following statement by the vice president of a large concern that manufactures thrashing machines:

"Where there is a large association of members, dissatisfaction of one nature or another usually arises, resulting in the splitting up of the association and the placing of the rig in the possession of good operators that are capable of doing custom work."

SUCCESS OF RING OWNERSHIP OF THRASHING RIGS.

It is impossible to determine what percentage of the ring purchases of thrashing rigs prove to be successful. The opinions of men vary. This is a recent statement of an official of another large thrashing machine concern:

"There are a good number of farm thrashing companies throughout the State of Indiana, and it is our opinion that 90 per cent of these companies operate successfully and satisfactorily. Occasionally you will find them where there is disagreement and the organization breaks up, the ring dis-

bands, and the thrashing is done by some custom operator. However, on the whole, we believe that it is a successful proposition."

The economical and financial possibilities of ring ownership are indicated by the experience of the following rings, which also represent three of the smaller-sized thrashing units.

1. *Example of a large ring.*—Up-to-Date Thrashing Co., Livingston County, Ill.; organized in 1914; 10 members, shares owned in unequal amounts; 15 farms in ring; partnership capital, \$3,275; equipment includes a 20-horsepower steam engine, a water tank, a separator with 34-inch cylinder, a corn sheller, and a second-hand silage cutter.

The practice thus far has been for the manager to hire outside help to run the engine and separator. The summary of the work during the first four years is as follows:

Summary of 4 years' work of a large ring.

Year.	Thrashing oats.	Shelling corn.	Cutting silage.	Gross receipts.
	<i>Bushels.</i>	<i>Bushels.</i>	<i>Tons.</i>	<i>Dollars.</i>
1914.....	46,339	10,128	515	1,207
1915.....	73,699	14,217	502	1,767
1916.....	43,301	26,643	496	1,245
1917.....	73,234	None.	940	1,756

The customary prices are charged for all the thrashing done. At the end of the fourth year the treasurer reported \$282 on hand. Out of the money ordinarily paid for custom work the outfit had met all expenses and paid for itself, and it was considered good for at least 6 or 7 years more service.

The total thrashing force usually employed in this ring for field work is as follows:

Ten men with teams to haul bundles; 5 pitchers in the field; 3 men with teams to haul the thrashed grain; 2 men to help unload grain at the barn; 1 man on the stack; 1 man to operate the stacker; 1 man to clean up about the machine; 1 water boy; 3 men with the outfit.

This represents a force of 27 men. A ring of this size demands good, capable management to insure success, and this company has been very successful and the members are well pleased with the results.

2. *Example of a medium-sized ring.*—Brush Ridge Thrasher Co., Marion County, Ohio; organized in 1905, 5 tenants, 8 landowners; original partnership capital, \$2,700; members signed notes in payment and let outfit pay for itself; equipment included a 32-inch separator, a clover huller, a 20-horsepower engine and a shed to house the outfit.

The work done the past two seasons is as follows:

Summary of 2 years' work of a medium-sized ring.

Year.	Oats.	Wheat.	Barley.	Clover.
	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>	<i>Bushels.</i>
1917.....	26,200	4,030	400	61
1918.....	27,163	5,224	568	40

A limited acreage of grain is thrashed for outsiders. The total acreage of grain thrashed averages about 650 acres.

The success of the outfit is indicated in the following statement by S. R. Reber, one of the officers of the ring:

“We bought our first outfit in 1905 and paid for that and bought another in 1913. We paid up the last note this last November, 1918, with a balance of \$13.67 in the treasury.”

This is a good example of the medium-sized rings. The help needed to run the outfit is not so large but that it can be managed successfully without great difficulty, and the acreage is large enough to make it a financial success.

3. *Examples of the small ring.*—Organized in 1918, Fayette County, Ohio; members, 3 landowners; partnership capital, \$1,000; this represents only the cost of a small 22-inch separator which has a clover-seed attachment; the power furnished is the 12-24 farm tractor used on the farms; grain acreage in the circle, about 400 acres; thrash for a few outsiders only.

The work done during the season of 1918 is as follows: 2,800 bushels of oats, 9,000 bushels of wheat, 100 bushels of clover seed.

The thrashing crew was as follows:

Five men with teams and wagons to haul bundles; no field pitchers, used bundle wagons; 2 men with 125-bushel wagon beds to haul grain 3 miles away; 1 man and a boy to manage outfit and to help some with grain.

Thus a total crew of eight men and a boy, with seven teams, successfully thrashed with this small outfit and de-

livered each day about 750 bushels of wheat to the elevator, 3 miles away. The use of a bundle wagon is not a very common practice in the Corn Belt, but this ring and several others in which it has been tried find it saves two or three helpers. The use of a gas engine also dispenses with the water boy, and the engineer has time to help considerably about the separator.

Mr. Edwin E. Sedwick, Alexis, Ill., and two others, with a total grain acreage of 180 acres to thrash, each have a 10-20 farm tractor, and last year they secured a 20-inch cylinder separator. Mr. Sedwick writes as follows concerning its success:

“Five of us, with my 14-year-old daughter to scoop back the grain, did all of our thrashing from the field in good shape in 11 days’ time. Each man pitched his own load. We think this plan far ahead of the old idea of exchanging help. We get our straw in the barn in good shape, which is a great saving. As we had a big job, we paid for one-fourth of our separator this year with the money ordinarily paid out for custom thrashing; I think there will be more outfits of this kind sold next year.”

Pasko, Armstrong, Sahr Co., Huntington County, Ind.; organized September, 1917; partnership capital includes a 20-inch cylinder separator, which cost \$900, a clover huller, corn husker, a hay baler, and a machine shed 27 by 34 feet; acreage of grain to thrash, 400 acres; thrash for no outsiders; the custom thrashing prices are charged.

The thrashing work done during the 1918 season was as follows: 14,000 bushels of oats, 1,400 bushels of wheat, and the net receipts were \$180.

The president of this company, Mr. Armstrong, also sent this statement concerning the success of the company:

“Using the farm tractor for thrashing helps to pay for it, and we can thrash when the grain is ready. There should be no more than 6 members in a ring, for 6 men can operate a small machine and more are apt to cause trouble.”

The officers in this company consist of a president, secretary, treasurer, and machinist, who also acts as timekeeper.

FINANCIAL RETURNS.

Out of the 70 replies from rings to the question, “Will the outfit pay for itself?” 52 said, “yes,” 16 said it would in 3

to 5 years, and the rest said "if not in cash, it will in saving the crop."

It is evident from these reports that a rig, when well managed, under favorable conditions, can pay for itself within 5 years, after which the cost of thrashing is very trivial. The life of an outfit depends upon its care and the extent of its use, but judging from the experience of several, it will give good service for from 10 to 15 years.

In several cases, 20 per cent to 25 per cent dividends were declared. When it is possible to find a manager who can handle a large outfit successfully, and thrash at least 800 acres of grain in the circle, the financial return can be much greater than that for a smaller outfit, no matter how successfully run. The difficulty lies in the trouble to find competent managers who will work for the best interests of a large group of men.

PRESENT TENDENCY OF THE MOVEMENT TOWARD RING OWNERSHIP.

During the past two or three years, the number of outfits sold to farm organizations has greatly increased, and the tendency at present is toward the formation of smaller co-operating units and the purchase of smaller outfits. This is largely due to two reasons, (1) the necessity for the more economical use of labor, and (2) advent of the farm tractor. This power can be well utilized to run a small thrasher, which, complete with a wind stacker, a self-feeder, and a weigher, costs about \$1,200. The present tendency of the movement is indicated by the following statement of a representative connected with one of the leading thrashing machine companies:

"Most of the farmer clubs consist of only just enough farmers to make one good ring, so that they can get all their thrashing done in about 15 days. All the thrashing is completed in seasonable time, so that all the grain may be saved to the best advantage. We believe that for 1919 the farmer club business will be increased considerably, especially a lot of the smaller-sized separators will be sold to 2, 3, or 4 farmers, or just enough so that they can be ready to operate and not have more than is necessary to make the full outfit so that they can do their thrashing in a short time, then immediately get busy with the rest of their farm work."