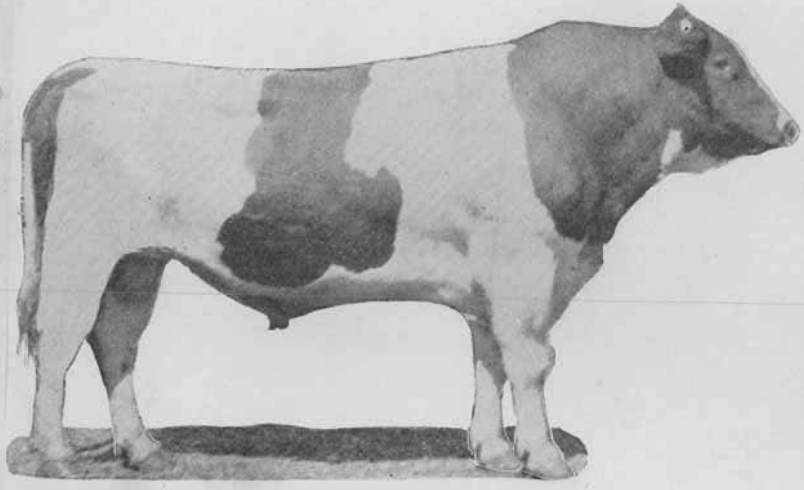
UNIVERSITY OF IDAHO
AGRICULTURAL EXPERIMENT STATION
Department of Dairy Husbandry

Study of Bull Associations in Idaho

By
H. A. MATHIESEN *and* F. W. ATKESON



Greenmoor Duke Pontiac 395991
Record of Dam: 33,110 pounds milk, 955 pounds butterfat
Owned by the Sugar City Holstein Bull Association

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9. Gooding Jersey Bull Association No. 1
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20. So. Jerome Guernsey Bull Association
21. Sugar City Holstein Bull Association
22. Teton County Holstein Bull Association
23. Weiser Valley Holstein Bull Association.

STUDY OF BULL ASSOCIATIONS IN IDAHO

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AND
F. W. ATKESON, Professor Dairy Husbandry
University of Idaho

INTRODUCTION

A standard cooperative bull association is a group of dairymen organized for the purpose of the joint ownership and use of three or more dairy bulls. Each bull represents a unit or block of the association and the bulls are rotated every two years.

Some of the assumed purposes of a cooperative bull association are to:

1. Furnish better quality bulls at a minimum cost, especially for herds too small to justify purchasing bulls of equal quality.
2. Reduce overhead cost in keeping bulls.
3. Establish a definite breeding program in the community.
4. Furnish a practical method of proving the breeding qualities of bulls.
5. Develop interest in better dairy practices in general.
6. Develop interest in better cows.
7. Develop cooperative spirit.

Cooperative bull associations of a somewhat similar nature have existed in Europe for many years. The first one in the United States was organized in Michigan in 1908 by the Michigan Agricultural College. Since that time the United States Department of Agriculture and many agricultural colleges have made it a part of their promotion work for better dairying. On January 1, 1925, there were in the United States 220 such standard associations, having a membership of 6,748 farmers owning 8,798 purebred cows and 33,261 grade cows, making a total of 42,568 cows. There were 1003 bulls in the associations. The average per association was 31.1 members, 4.6 bulls, 40.9

* The field data in this bulletin were obtained by Mr. Mathiesen who is employed on a cooperative agreement with the Bureau of Dairy Industry, United States Department of Agriculture.

purebred cows, 157.7 grade cows, or a total of 198 cows. There was an average of 6.8 members and 43 cows per bull.

Of the 39 states reporting associations, Idaho ranked first with 32, Pennsylvania second with 28, Minnesota third with 18, Kentucky fourth with 17, and Utah fifth with 14. None of the other states reported over 10, and 15 had two or one. Fifty per cent of all the associations in the United States were in the five leading states.

History of Bull Associations in Idaho

The first cooperative bull association in Idaho was the Payette Valley Jersey Bull Association organized in Payette County in 1919 by representatives of the Extension Division of the University of Idaho College of Agriculture. This association was organized June 11 and the bulls placed in service on November 1. Two more associations were organized in 1920 and three in 1921. In May, 1922, the dairy division (now the Bureau of Dairy Industry) of the United States Department of Agriculture, thru its western office in charge of Mr. J. E. Dorman, placed Mr. H. A. Mathiesen on its staff for the purpose of organizing bull associations in the western states. Immediately the University of Idaho Agricultural Extension Service took advantage of this opportunity and the two agencies began an intensive campaign for more bull associations in Idaho. The following table shows the number of associations organized by years in Idaho.

Table I

BULL ASSOCIATIONS ORGANIZED IN IDAHO BY YEARS

Year	1919	1920	1921	1922	1923	1924	1925	1926	1927	Total
Number associations organized	1	2	3	11	12	4	2	2	1	38

The above table shows the exceptional results obtained in this project during the years 1922 and 1923. On January 1, 1924, Idaho ranked first among all states of the nation in the number of bull associations. It became apparent that if this rate of increase continued it would soon be impossible to supervise the work properly, so from 1924 to date a very conserva-

tive policy has been maintained and no new associations were organized except where conditions were most favorable and the demand so insistent that a very high standard could be maintained. It seemed more important to supervise properly the existing associations so that they would be more certain of success than to constantly add new association while others were disbanding due to lack of attention.

In some cases two or more standard associations of the same breed in one county were later consolidated into one association for better handling of the blocks, as will be further discussed later.

Up to January 1, 1928, there have been 44 standard associations organized and reported, but due to consolidations these represent 38 associations as now reported. Sixteen associations have failed, leaving 22 associations in operation with 118 bulls owned by 532 farmers who have a total of 4,375 cows.

Reasons For Investigation

Very little information was available on the results obtained in improving the producing ability of dairy cows thru the use of better bulls in bull associations. Inasmuch as many states were spending considerable money in promoting this work, it was apparent that some study of the methods used in organization and management of cooperative bull associations should be made in order to be able to make sound recommendations. Already considerable difficulty has been experienced in many states in maitaining these associations.

The investigation was started in Idaho because the proposal or appeal came from the University of Idaho Agricultural Experiment Station and also because Idaho ranked high in number of associations and was very active in the work. The conditions and location of the associations in Idaho made them a representative and convenient group to study.

The project was started May 15, 1925, thru a cooperative agreement between the University of Idaho Agricultural Experiment Station and the United States Department of Agriculture. Mr. H. A. Mathiesen was appointed as project leader to conduct the investigation under the direction of Mr. J. E. Dorman of the western division of the Bureau of Dairy Indus-

try and Professor F. W. Atkeson, head of the Department of Dairy Husbandry, University of Idaho.

When the project was started the plan called for five years' investigation and more if deemed advisable. A very detailed study was outlined and 20 representative associations were selected for the project as it seemed inadvisable to attempt more than could be accomplished. Naturally as years go by the loss of associations will reduce this number but more may be added. The associations selected represented as nearly as possible all conditions such as well developed and undeveloped dairy communities, counties with and without county agents, counties with and without cow testing associations, old and new associations, associations in good and poor condition, well and poorly organized associations, good bulls and mediocre bulls, various methods of organization, etc.

The work of the project leader consisted of gathering detailed information by visiting officers of the associations, the caretakers of the bulls, and individual farmers. In addition some data are being collected on results obtained by representative farmers not in bull associations for comparison.

When the project was started the important phase seemed to be the gathering of data on herd improvement as measured by comparison of production records of the original cows with records of the daughters of association bulls. However, ample evidence gathered outside of bull associations is available to indicate that some bulls improve production while others do not and that the only sure method of improving production is by means of proven and tried sires. The data demonstrating the improvement to be expected in bull associations after several crosses of proven high quality sires have been used in ordinary herds will be very valuable but to collect it will require a period of years. Such information will indicate how high the production level can be raised and maintained within practical limits of commercial production.

As the study progressed the authors have become more and more convinced that the most fundamental and far reaching information to be gained, at least in the first few years of the investigation, is the study of the methods of organization and management in order to have sound recommendations that will

more nearly assure success. Of the failures in Idaho from known causes, practically all were due to poor organization or poor management. Mere growth in the number of associations within a state does not prove the soundness of the project. Associations organized on a standard plan lose the benefits derived from the use of proved high quality sires if they do not live longer than one bull exchange period.

Therefore, we must first determine the causes for the failure of bull associations and if possible change the plan to correct the faults before we are justified in pushing the project too extensively. Thus the study of organization and management has presented itself to the authors as the most important phase of the project demanding immediate solution.

Inasmuch as the Bureau of Dairy Industry of the United States Department of Agriculture and agricultural colleges in many states have cooperative bull associations as one of their projects in the dairy extension program, and since many of the troubles found in Idaho are common to all, it seems advisable to make a progress report on this investigation. All of the conclusions reported are not necessarily final but the demand for information is so universal that the report should have value since some definite information has been obtained.

RESULTS OBTAINED THRU BULL ASSOCIATIONS

Better Sires For Less Money

Investment in bulls per member for those farmers using bulls before organization was higher than after organization. A summary of the 20 associations studied is shown in the following table:

Table II

INVESTMENT IN BULLS BEFORE AND AFTER ORGANIZATION

	Members Previously Owning Bulls		Amt. Total Membership
	Before Organization	After Organization	After Organization
Number of bulls	116	112	112
Total investment in bulls	$9,500.00	$7,838.00	$23,864.00
Average investment per bull	$82.00	$68.00	$213.00
No. of members represented	116	116	682
No. of cows represented	1,174	1,174	3,748
Average investment in bulls per member	$82.00	$68.00	$35.00
Average No. cows per member	10.1	10.1	5.7
Average investment in bulls per cow	$8.09	$6.68	$6.36
Average No. cows per bull	10.1	10.5	33.4

Contrary to what might be expected in sections where the herds are larger, the 112 association bulls displaced only 116 bulls. In the associations studied the average size of all herds was 5.7 cows and 60 per cent of the herds contained five cows or less, and 87 per cent contained 10 cows or less. Only 17 per cent of the 682 members owned bulls before organization. The average size of the herds owned by members having bulls before organization was 10.1 cows. Before organization the farmers not owning bulls utilized any bull that was convenient, sometimes with, but many times without service fees.

The total investment in bulls was far greater after organization than before, being $9,500 before and $23,864 after However, the average investment per member among those owning bulls before organization was $82.00 while their investment after joining the association was only $68.00 or about one-sixth less for much better bulls. This was due to better distribution of investment.

Before organization members without bulls had no investment in bulls while after organization these members carried two-thirds of the investment. Also, by increasing the number of cows per bull from 10.1 to 33.4 the investment for bulls per cow was better distributed. On the per cow basis the investment per cow on bulls displaced was $8.09 before as compared to $6.68 after organization. Thus we find that altho association bulls cost $213.00 as compared to $82.00 for non-associa-

tion bulls, the service cost per cow was actually less for the farmer. The average investment after organization was $35.00 per member and $6.36 per cow.

Association bulls are not only cheaper in original cost than privately owned bulls, but the cost is distributed over a longer period due to the rotation of association bulls. In the case of the privately owned bull it becomes necessary for the farmer to dispose of his bull in some manner at the end of two years and replace him in order to avoid inbreeding. Usually the bull is sold at a great sacrifice and in many cases goes to the butcher, making it impossible to obtain him again regardless of how great his daughters may prove to be. Many great bulls have traveled this route.

The investment in bulls displaced averaged $82.00 per bull. When displaced they were sold for an average of $52.00 per head making a loss of $30.00 per bull, or 37 per cent of the original investment. The total loss on the sale of the 116 bulls was $3,483.

In the case of the association it is unnecessary to purchase another bull for six or eight years unless an accident happens to one of the bulls or unless he proves to be an inferior breeder. Even by reducing the expected period of service of association bulls to only four years, which means only two exchanges, the original investment can be cut in half, as compared to privately owned bulls, considering both to have equal salvage value. On this basis the investment for privately owned bulls was $82.00 per farmer or $8.09 per cow while the investment in associations bulls would be $17.50 per member or $3.18 per cow. This makes very cheap bull services from association bulls and of course if the association ran six years the investment would be reduced in proportion.

Less Risk of Capital

Should the privately owned bull die or become unserviceable the individual farmer must carry all the loss. In the case of the bull association, if one bull dies all the members in all the blocks are assessed, or money is taken from the reserve fund of the association to buy another bull. For example, if the block in which the bull dies contains five members and there

are five blocks with a total of 25 members the cost of another bull would be distributed among the 25 members in direct proportion to the number of shares held by each. Bulls are the property of the entire association and not the respective blocks. Therefore, members of the block do not lose their entire investment but only part of it and all members in other blocks help them carry the burden. Thus the risk of investment is far less than in the case of privately owned bulls. The bull association not only reduces the investment but reduces the liability of loss.

Less Cost of Maintenance

Maintenance cost of the bull per cow is directly proportional to the number of cows served. Because of greater investment per bull, bull pens, and possibly better feeding, maintenance cost may be higher for association bulls than for the class of bulls displaced. Since the maintenance cost for the bulls displaced was chargeable to an average of only 10.1 cows while the association bulls represented an average of 33.4 cows, it is evident that the maintenance cost per cow for association bulls is less. The costs were more equitably distributed among the dairymen of the community because before organization maintenance cost of each bull was borne by one man while after organization an average of four members carried the expense. Maintenance of a bull for herds as small as 10 cows makes too great an overhead cost per cow and per farmer. Data on the exact cost of maintainance of association bulls, everything considered, and of privately owed bulls, are now being collected in this investigation.

Better Quality Bulls

The bull association furnishes higher quality sires than were used previous to organization. The following table shows the kind of bulls displaced.

Table III

BULLS USED PREVIOUS TO ORGANIZATION OF BULL ASSOCIATION

	By Members Owning Bulls		By Members Not Owning Bulls		Total	
	No. of Bulls	Per-cent	No. of Bulls	Per-cent	No.	Percent
Purebred dairy bulls of same breed as association	48	42	97	23	145	27
Purebred dairy bulls of other breeds than association	3	2	7	2	10	2
Grade dairy bulls of same breed as association	22	19	33	8	55	10
Grade bulls of dairy breeds other than association	6	5	3	1	9	2
Purebred bulls of beef breeds	23	20	65	16	88	17
Grade bulls of beef breeds	14	12	205	50	219	42
TOTAL	116	100	410	100	526	100

Of the 116 bulls displaced, 64 percent were purebred and 36 percent were grade. However, only 44 percent were purebreds of the dairy breeds, the other 20 percent being purebred beef bulls. The beef bulls displaced, purebreds and grades, represented 32 percent or practically one-third of all the bulls. Of the bulls displaced 61 percent were either purebreds or grades of the same breed represented by the association organized in the community. Only two percent of the purebred dairy bulls displaced represented breeds other than that of the association, and of the grades and purebreds combined, 90 percent were of the breed represented by the association. This would indicate that the breed selected for the association was largely determined by the breeds of dairy bulls already in the community.

Of 526 farmers reporting 410 did not own bulls previous to organization of the bull association. Of these 410 members, 66 percent or two-thirds were using beef bulls, either grade or purebred. Thirty-four percent were using dairy bulls, but only 31 percent using purebred dairy bulls. Grade beef bulls represented 50 percent of the bulls used, and grade dairy bulls together with all the beef bulls 69 percent. Thus the members that did not previously own bulls were in far greater need of better bulls than those who did. This was due to small herds

and the fact that the farmer with no bull of his own was absolutely dependent on any bull available, which was usually a beef bull.

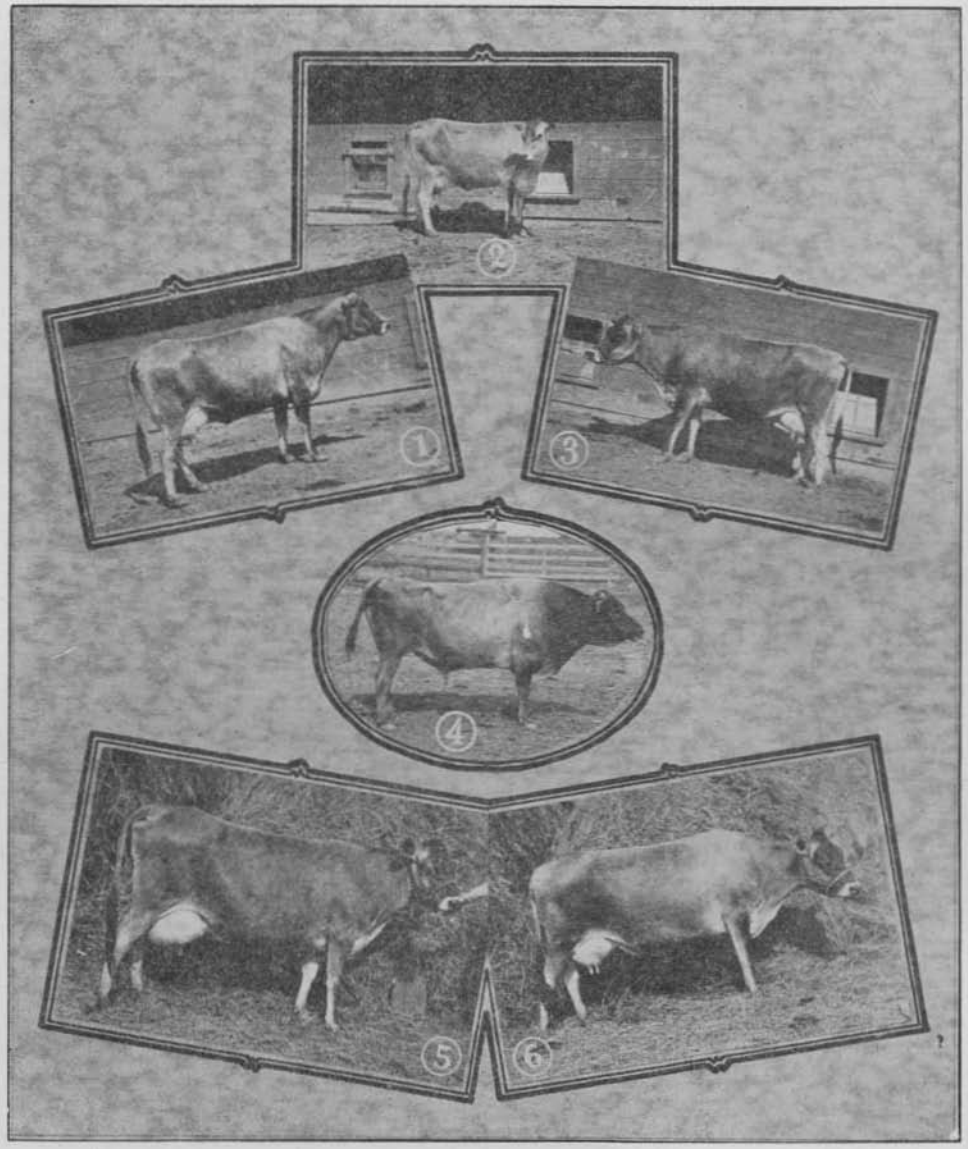
The fact that 59 percent of the members were using beef bulls and only 29 percent were using purebred dairy bulls previous to joining the association indicates that the associations were organized in communities where the farmers were changing from beef raising to dairying. These figures show that the farmer with a small herd is handicapped in improving his herd production and ilustrates the need for the association in the communities where organized.

Of the bulls displaced only 9 or 7.7 percent were out of cows with butterfat records. All of the 112 association bulls but 30 were out of cows with yearly records and of the latter one was a remarkable breeding proven sire which is even better than a bull from a record dam. Computing all records on a mature equivalent basis, 82 association bulls were out of cows that averaged 15,862 pounds of milk and 638 pounds of butterfat. Dams of the five bulls in one association had the remarkable average record of 849 pounds of butterfat and in three other associations the average was over 700 pounds of butterfat. Several associations had individual bulls out of cows with records of over 800 pounds of butterfat and one bull's dam produced over 33,000 pounds of milk.

Earlier in this bulletin the average investment in bulls displaced was reported as $82.00 while the investment in association bulls averaged $213.00 per bull. Altho the price is not necessarily a direct index to the quality of bulls, nevertheless the above description of the association bulls clearly proves them to be far superior to the bulls displaced. Thus, the associations placed bulls of very superior quality in the communities where they were badly needed.

Source of Proven Sires

One of the surest methods of increasing the production of dairy cattle is by using proven high quality sires. The bull association is so organized that bulls, thru rotation, are continued in service until their daughters are in milk, and their breeding qualities can be measured by comparing the records



Blossom's Count 147725, owned by the Payette Valley Jersey Bull Association, and five of his daughters that averaged 9,143 pounds of milk and 479.8 pounds of butterfat at maturity. Their dams averaged 7,632 pounds of milk and 392.8 pounds of butterfat, an increase of 1,511 pounds of milk and 87 pounds of butterfat due to this good bull.

of the daughters with records of the dams. As soon as proven, the bulls transmitting low production may be discarded and the bulls improving production may be used as long as serviceable. The bull association may be one of the most valuable sources of proved bulls. Most of the Idaho associations studied are less than six years old, and since it takes at least four years of association operation to prove a bull, very few are old enough to be proven. To date sixteen bulls have been partially proven in Idaho bull associations. More time will be necessary to study this phase of the work.

One of the main problems seems to be in keeping bulls serviceable after they are old enough to be proven. This is considered in another section of this bulletin. Just what percent of the bulls remain breeders after being proven will be valuable information in considering the importance of this advantage of bull associations.

Definite Breeding Program

One of the outstanding advantages of the bull association is the fact that it establishes a definite breeding program among the members for the entire life of the organization. A common impediment to progress among farmers is the constant changing of breeds in selecting bulls. For example, a farmer will use a good bull of a certain breed on a mixed herd and then, due to the temporary greater popularity of some other breed, or the demand of the market where he sells his products, or, more often, the hope or desire of combining the good qualities of all the breeds in one herd, he will purchase another good bull of different breed to cross on the daughters of the first bull. He may even make two crosses of bulls of one breed and get some very fine grade heifers before changing to another breed of entirely different characteristics. Thus he is constantly wrecking what progress he has made due to a mere whim or a temporary situation. This constant switching of breeds is one of the greatest factors in preventing progress in improving grade herds and is so common that it is almost as serious as the scrub bull.

Another serious situation is caused by fluctuation of quality of bulls used even tho the same breed is maintained all the

time. The farmer may select a very high class bull due to present enthusiasm for his dairy herd when the markets for dairy products are high and conditions are favorable, then later due to change in conditions, he may select an inferior bull or even a grade bull to cross on the daughters of the first bull. Thus he is constantly defeating his own progress by lack of a definite breeding policy. The bull association thru organization assures the continuous use of high quality sires and prevents crossbreeding or backsliding in the herd improvement program of an entire group of farmers. This service alone should justify the existence of an association when we consider how prevalent are the above described conditions.

Of the farmers in the associations 83 percent had no bull previous to organization and due to their small herds were forced to use any bull or bulls that happened to be in the community. If their neighbors changed breeds they were in most cases forced to abide by the change. Often there was very little opportunity for choice as only one or two bulls were maintained in the community.

Breed Standardization

The bull association has been a vital factor in establishing herds of uniform breed. The following table shows the results obtained in 18 associations in standardizing cows to the same breed as asosciation bulls.

Table IV

BREED STANDARDIZATION IN 18 ASSOCIATIONS

	At time of Organization		To Date	
	Number	Percent	Number	Percent
Cows of same breed as the association bulls	1,644	49.6	2,655	72.9
Cows of other breeds	1,671	50.4	986	27.1
TOTAL	3,315	100.0	3,641	100.0

These associations had operated for periods varying from two to seven years. The percentages reported are true averages and cover a period of operation of slightly over four years for all associations. The above table shows that at the

time of organization an average of only 49 percent of all the cows represented were of the same breed as the association bulls while after four years' time this was raised to 73 percent, or an increase in breed standardization during this period of 48 percent. Part of this was brought about thru the purchase of high grade or purebred cows and in a few associations by cattle exchange, that is, trading cows of other breeds for cattle of the same breed as the association bulls. Of course as years passed the increasing number of offspring from association bulls was a big factor in making the herds more uniform.

There was a noticeable interest on the part of some farmers to standardize their herds completely. This was largely attributed to interest in association bulls. Of 455 members now in the associations studied 113, or 28.7 percent, at the time of joining the associations had herds completely standardized to the same breed as the association bulls and 196 other herds, or 43 percent, included some cows of the breed of association bulls. Thus 71 percent of the members had cows of the breed selected by the organization.

In four years' time 134, or 68.7 percent of the 196 herds containing some cows of the breed of the association bulls had made progress in breed standardization. Of the 128 herds having no cows of the breed of the association at the time of joining, 101 or 78.9 percent have begun standardization. Since joining the associations 66 herds or 14.5 percent of the total herds now in the association have become completely standardized.

More Interest in Improved Cattle

Increased interest in better type cows of greater producing ability and the desire for more profitable cows have been noticeable. Twenty-two members in the 18 associations owned a total of 72 purebred females at the time of organization while at the present time 75 members own 240 purebred females, in spite of a loss of 55 purebreds thru members leaving the associations. Of those members now owning purebred females 52.6 percent stated that their membership in bull associations has been largely influential in their obtaining 70

of the purebreds, indicating that membership in bull associations has increased the number of purebreds by 30 percent.

Twenty members stated that they intended to procure one or more purebred females during the coming year. Twenty-one percent reported that it is their ambition to have only purebred females in their herds in the future. Since becoming members 5.25 percent have procured 38 high quality foundation grade females. These include only foundation grade cows and not the total number of grades added.

Practically all foundation female stock added, both grades and purebreds, have been purchased thru county agents by cooperative purchases from herds known for their high quality type, breeding and production. It may be assumed that there would have been some increase and improvement without organization, but it is certain that it would have lacked organized effort, and that the members would have lacked the vision created by the organized breeding program. The better the quality of association bulls the more general was the interest in purchasing purebred females. The usual reaction of the farmer is that he wants better bulls to improve his cows, then after getting high class association bulls he feels that he should have a few high quality females to breed to them in order to make more rapid progress.

Increased Value of Offspring

The attitude of the members of the associations toward the offspring of the association bulls and the general improvement made is shown in the following table.

Table V

ATTITUDE OF MEMBERS TOWARD THE OFFSPRING OF ASSOCIATION BULLS

	Improvement in type over that of dams	Improvement in type over offspring of bulls used previous to joining Assn.	More salable than those by other bulls now in community	Present herd improvement in type over herd owned previous to joining, due to breeding to Assn. bulls.	Present herd increased in value over former herd, due to Assn. bulls
Affirmative	82.0%	81.5 %	81.0%	76.0%	75.0%
Negative	1.0%	1.0 %	1.0%	1.0%	1.0%
Offspring too young to judge	2.6%	2.6 %	2.6%	8.3%	9.3%
No female offspring to date	14.0%	14.0 %	14.0%	14.0%	14.0%
Undecided	0.4%	0.9 %	1.4%	0.7%	0.7%

Only 1 percent of the members did not believe that considerable improvement had been made, and in most instances those represented cases where the association bull was not of satisfactory quality.

An attempt has been made to measure the results obtained thru the use of association bulls by determining the actual selling price of the offspring of association bulls compared to the price received for the offspring of other bulls of the same breed. To date only 136 female offspring of association bulls have been sold by a total of 40 members. The selling price compared to other cattle of the same breed and age in the community is shown in the following table.

Table VI

SALE PRICE OF ASSOCIATION BULLS' DAUGHTERS

Number Sold	Average price received for daughters of association bulls	Average price received for daughter of non-association buls
	Under one year	
40	$19.96	$10.71
	Yearlings	
59	$39.19	$15.51
	Two years old or over	
37	$78.00	$49.83

Altho the average prices represent relatively few animals, they at least indicate greater invoice value for the offspring of the association bulls. If these figures are representative the increased value per heifer calf sired by association bulls would be $9.25, which if no difference is allowed on male calves, would make the average increased value of $4.63 on all calves born, male or female. Conservatively estimating only 30 calves born in a year sired by the association bull, the increased invoice value of his calves would be $138.90 per year. When it is considered that the displaced bulls were valued at $82.00 and that the association bulls were valued at $213.00, a difference of $131.00, it is apparent that association bulls more than pay for the difference in investment each year in invoice value of calves. It must also be remembered that the bulls displaced were in herds averaging 10 cows, thereby having fewer calves and only two years in which to pay for themselves, while the association bulls served many

more cows and had five or six years in which to pay for the difference in investment. The probable difference in the producing ability of the cows sired by the two classes of bulls should add to the advantages of the association bulls thru the greater profits over feed costs.

Increase in Production

To date not many comparisons have been made on the butterfat production of association bulls' daughters with that of their dams. This is partially due to the association members having small herds and not belonging to cow testing associations and also to the fact that many of the association bulls have daughters just coming into production.

Comparisons have been made on 48 daughters of a total of 16 association bulls. The results are in the following table.

Table VII

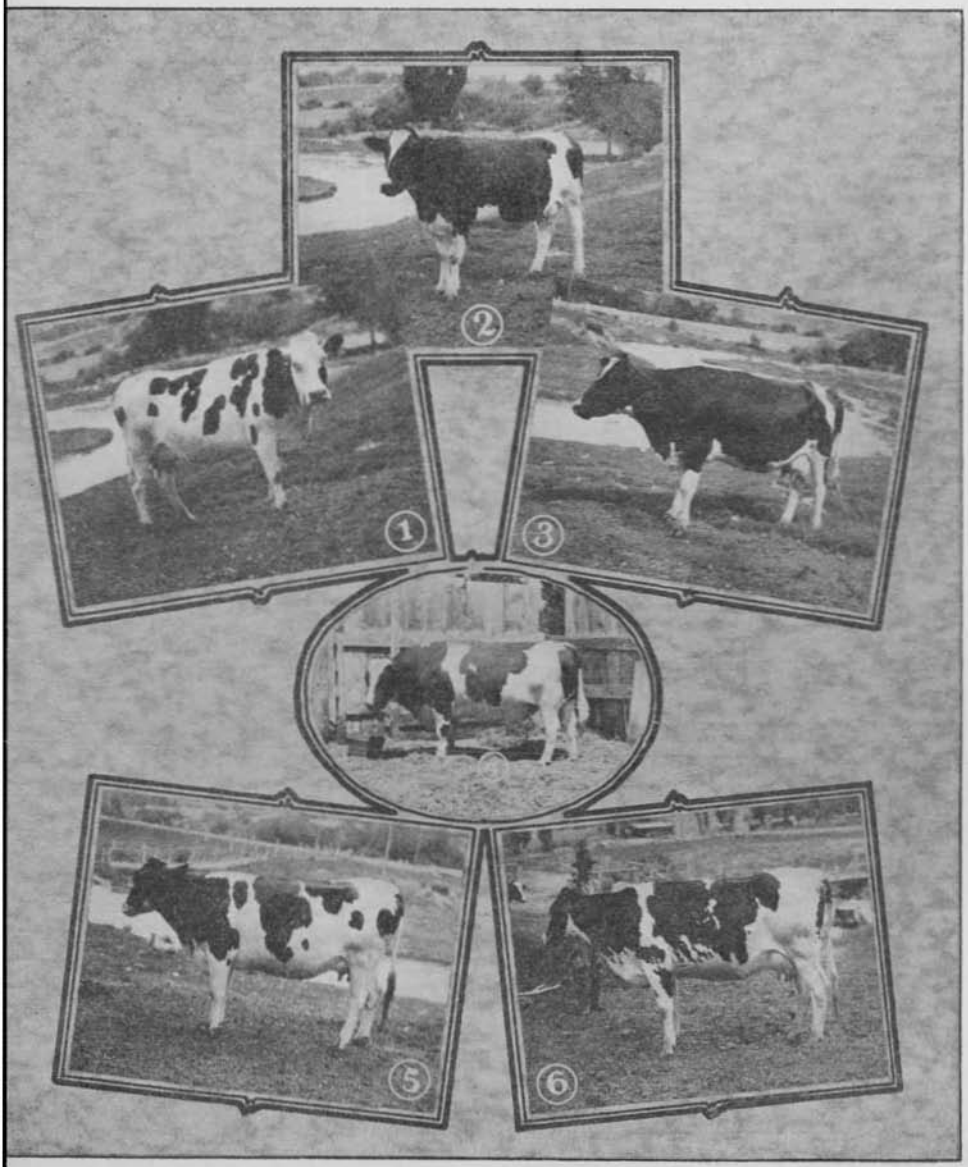
PRODUCTION OF ASSOCIATION BULLS' DAUGHTERS COMPARED WITH DAMS

	Milk	Fat
Daughters	9,183 lbs.	407.6 lbs.
Dams	8,118 lbs.	330.8 lbs.
Pounds increase	1,065 lbs.	76.8 lbs.
Percent increase	13.1	23.2

Considering the quality of the dams the increase made is excellent.

Developing Better Dairy Practices

The bull association tends to develop a program of better dairying among its members. This is partly due to the educational work done thru the organization and partly to the fact that members realize that the breeding program is constructive, thereby offering some incentive for better dairying. Data are presented below on some of the dairy practices among the members at the time of joining and after being in the association for an average of four years.



DeKol Colantha of Ida. U. 337496, owned by the Gooding County Holstein Bull Association, and five of his daughters that averaged 10,312 pounds of milk and 426.1 pounds of butterfat at maturity. Their dams averaged 8,539 pounds of milk and 305.2 pounds of butterfat, an increase of 1,773 pounds of milk and 120.9 pounds of butterfat due to this good bull.

Table VIII

DAIRY FARM PRACTICES BEFORE AND AFTER JOINING BULL ASSOCIATION

		At time of joining association	To date in 4 years' period
Herds tested for tuberculosis (percent)		48.0	88.6
Herds in cow testing associations (percent)		3.6	30.0
Average number of dry rest weeks per cow		6.3	6.4
Average months of age of 1st freshening		23.6	24.8
Herds fed grain during winter (percent)		41.5	60.0
Herds fed succulence in winter (percent)		21.5	30.0
Season of Freshening	All seasons (percent)	61.1	55.8
	Fall (percent)	27.2	36.6
	Spring (percent)	7.0	5.0
	Spring and fall (percent)	4.6	2.6

The above figures indicate that association members have made great progress in ridding their herds of disease and in improving their feeding and management. At the time of organization 24 percent of the blocks, or units, of the associations reported that abortion was present, whereas four years later only 20.5 percent of the blocks report abortion present. This does not mean very much except that it tends to verify observations that in no case has it been possible to prove that abortion was spread by the bull. Spread of infectious abortion is partially controlled by the regulations laid down in the by-laws of the associations.

Development of Cooperative Spirit

Bull associations have given the farmers experience in cooperative effort and have clearly demonstrated which farmers are the real leaders in the various communities. The more successful associations have been led to attempt other enterprises of cooperative nature thru their organizations. These efforts include dairy cattle shows, dairy tours, and the associations in some instances have been quite a factor in encouraging tuberculosis eradication campaigns, winter dairy schools, and other educational features. The associations have also taken the leadership in the promotion of the breed of cattle represented and have thru their publicity had a very definite influence on the minds of non-members with respect to the importance of having a bull from a cow with a high yearly

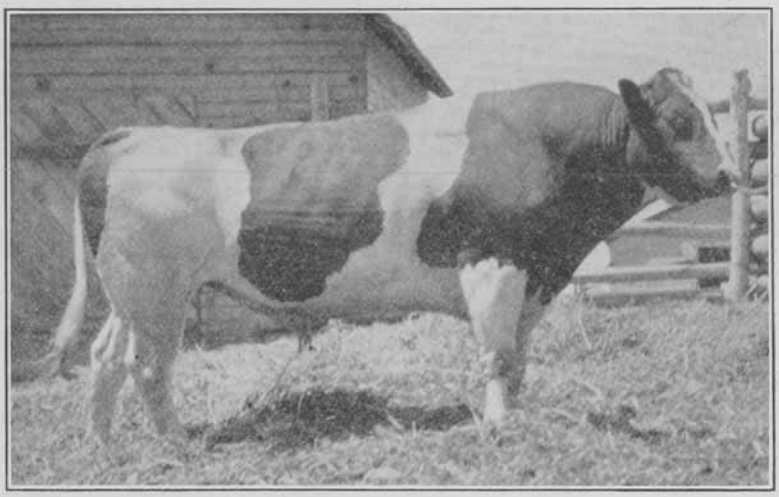
butterfat record. The attitude of the farmers of the entire community toward the selection of a herd sire has been changed.

MANAGEMENT PROBLEMS

There are two general types of problems influencing the results obtained in a cooperative bull association. These are management problems and organization problems. They are so interlocked and interdependent that it is difficult in some cases to separate them but an effort to do so will be made for the purpose of organization of the material.

Effect of Quality of Bulls on Management

The study in Idaho has shown that the quality of bulls in the association greatly influences the success of the organization. The first and most important qualification for the con-



Representative Holstein Bull owned by the Bonneville County Holstein Bull Association

tinuous success of a bull association is that the bulls possess extraordinary merit. They must be of much higher quality than can be owned by practically any of the members, otherwise the members who are more prosperous will realize that

the association does not have sufficient to offer and that leaving the association will be of no great personal loss. In addition the bulls must be of sufficient quality to continue giving satisfaction as the best herds are improved. The purpose of the bull association is not merely to give bull service but to give superior service.

The average fat production of the dams of bulls placed in associations in Idaho was 637 pounds. It was felt at the time the bulls were placed that they were of sufficiently high quality for an indefinite period. The results indicate, however, that it would have been a mistake to have had the standard lower. The best results were obtained in the associations with the highest quality bulls.

The quality of the bulls and their offspring is reflected by the interest of the members in the success of the association. Further evidence of this interest is shown by the care given the bulls and by the desire to add high quality purebred and grade female foundation stock. Of the 33 associations that have been within the scope of the study two have failed entirely due to mediocre bulls. Four asociations now operating will probably be short lived due to having obtained mediocre bulls. High quality bulls are the best antidote for membership losses.

Feeding and Management of Association Bulls

The feeding and management of the bull is important because if he is improperly cared for his period of usefulness may be greatly reduced, thereby proportionately increasing the cost per cow for services, considering the money invested. The condition in which the bull is kept also affects the attitude of the members toward the bull and as a result influences the general condition of the association. Therefore, it is important that good caretakers be selected. The best method of governing the feeding and management of the bulls is by setting forth in the by-laws of the association regulations covering everything as much as possible in detail. Another essential is that the officers make frequent inspection trips to determine the condition of the bulls and to make recommendations on feed and care.

In the Idaho associations, especially those in the irrigated sections, where alfalfa hay is cheap and plentiful, there have not been many cases where bulls were not kept in a thrifty condition. However, there has been a tendency to feed the bulls on alfalfa hay exclusively, which develops too much barrel and makes the bulls slow in service. Grain feeding with a limited amount of alfalfa hay is recommended. When possible the bulls should be provided with some green feed and of course provision should be made for plenty of salt and fresh water. Due to the exclusive hay ration commonly used, it has been found that when bulls were placed in an association at less than breeding age there was a tendency not to grow the bull to normal size. Young bulls should be placed with care.

The feed cost of maintaining association bulls was available on 31 association bulls. Due to the difference in feed costs, especially the price of hay, the annual feed cost was considerably higher in northern Idaho which is cutover land than it is in southern Idaho which is an irrigated section. The data are presented in the following table.

Table IX

FEED COST OF KEEPING ASSOCIATION BULLS

Feed	Average for state	Average for south Idaho	Average for north Idaho
Hay	$60.40	$50.57	$79.00
Grain	$19.10	$16.59	$17.15
Total	$79.50	$67.16	$96.15

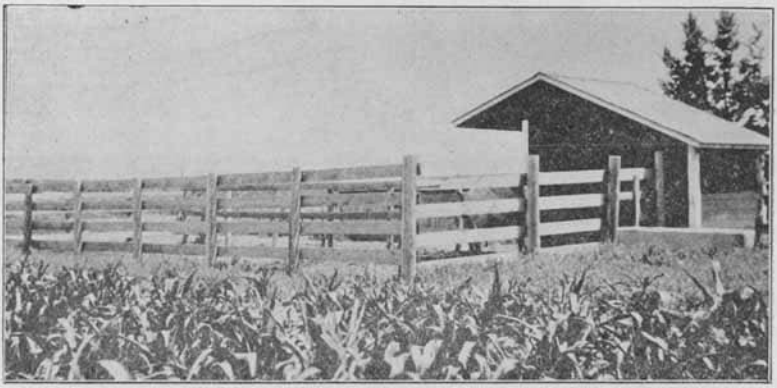
The above table shows the feed cost averaged $79.50 per bull during the past year. In southern Idaho the cost averaged $67.16 per bull while in northern Idaho it averaged $96.15 per bull. The 31 caretakers reported an average cost in labor of $29.00 which, added to $79.50 makes an average feed and labor cost of $108.50. In a study of the costs and depreciation of all bull pens and sheds in the associations, it was found that the average depreciation was $6.00. By adding the average depreciation on pens and sheds to the average feed and labor costs, the average maintenance cost would be $114.50 exclusive of depreciation on the bull and interest, insurance, etc. However, in considering costs to the caretaker the only

costs included should be feed costs because the labor of caring for the bull is greatly offset by the labor of the other members in leading their cows to the bull.

Bull Pens for Association Bulls

It has been the policy in Idaho to advocate the use of a pen used exclusively for each association bull in order to insure safety for the bull and the caretaker and to provide exercise for the bull. Of the 97 bulls now in the associations, 64 or two-thirds of them have specially built pens. Probably one-half of these pens have the "safe-keeper" feature built in. A shed is also provided so that the bull can have shelter.

Pens have varied in size from 20x30 feet, or 600 square feet, to 100x100 feet, or 10,000 square feet. The majority



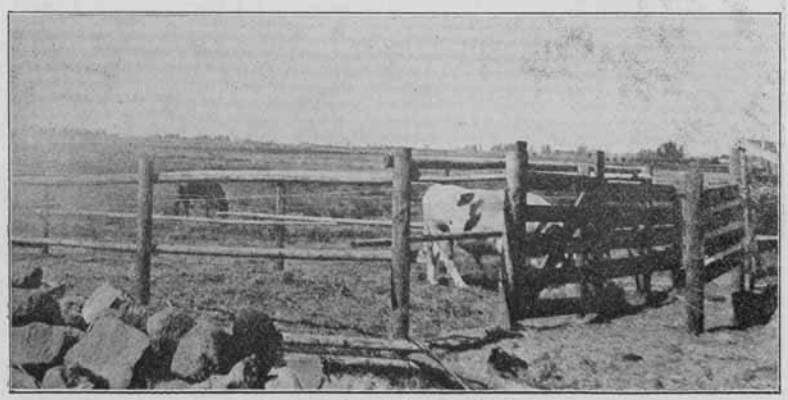
Well constructed shed and plank pen.

have been around 1,800 square feet—about one-twenty-fourth of an acre, since that has been the minimum recommended. Observations seem to indicate that this minimum is too low especially after bulls have become mature and have a tendency to take less exercise.

The thing that keeps the size of pens down is the cost of construction. Practically all of the pens in Idaho have been constructed cooperatively by the members. In some cases the association officers have ordered enough lumber to build all the pens and have arranged to have it delivered to the caretakers' farms. By ordering in carload lots they were able

Inexpensive shed constructed of railroad ties.

to save money. Then members of each block constructed the pens according to standard specifications. In some instances the cost of pens was figured in the investment in bulls and the value of shares rated accordingly so that when the money was collected not only the money for the bulls was available but the money for pens and sheds as well. This organized effort has proven by far the most satisfactory. In Idaho many of the pens were constructed from poles cut in the mountains and in these cases the members of each block contributed their time in cutting the poles and building the pen and shed in their respective block. In all cases the work has been completed with less annoyance to all concerned where the pen and shed were built before or soon after the arrival of the bull.



Pen made of barbed wire

If the matter is delayed it takes considerable pressure from the officers to get the block members to get the work under way.

The material used for pen construction varied considerably. The following shows the number of each type of construction.

Number of pens	Kind of Material
27	Poles
15	2"x8" lumber
5	2"x6" lumber
5	Log slabs
4	Barbed wire
4	Boards 1" material
2	2"x10" lumber
1	2"x"12" lumber
1	Heavy plank
64	

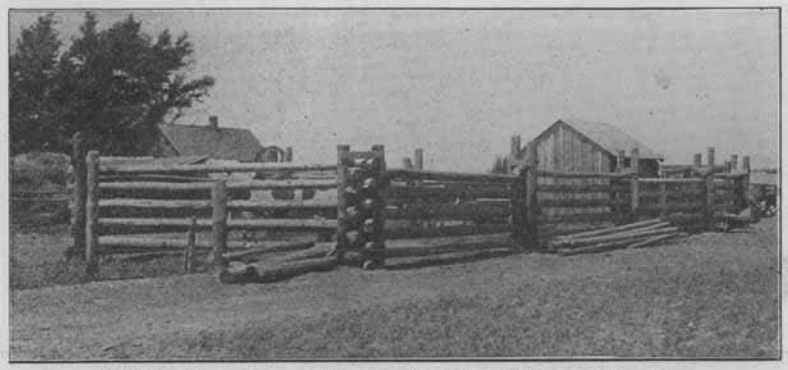
Pole shed and pen under construction by block members

The most satisfactory material has been poles and second best has been the 2"x8" lumber.

Cost of the pens has varied a great deal according to the kind of material used and the size of the pen. In estimating

the price of the pens the poles were figured at the prevailing price, delivered, but actually the cash outlay was not that much because the members gathered the poles themselves. Costs reported on pens in all cases are for material and do not include the labor of the members in construction. The costs varied from $5.00 to $75.00 and the average was $31.06 for 24 pens where the pen costs were reported separately from the shed.

The sheds in most cases were closed tight on three sides and open on the other. They were of very simple construction and were usually about 10x12 feet in size. The costs reported



Economical shed and pen showing pole construction

for 19 pens and sheds combined varied from $20.00 to $130.00, averaging $93.42.

By cooperative effort the expense can be kept down but the cost will vary according to the kind of material used and the size of the pen and shed.

Method of Payment of Caretakers

The association bull must be properly fed and managed in order to insure continued successful service from him and in order to keep down dissatisfaction among the members. Regardless of the quality of the bull, if he is kept in poor condition the block members soon lose their pride in him and their enthusiasm for the association. In order that the bull will be well cared for, the caretaker must be satisfied with the arrangements of payment for his labor and feed required.

The method of payment of the caretaker is quite a problem and it is difficult to recommend any single method that will be universally successful under all conditions. Several methods have been tried in Idaho and all have some objectionable features. One of the simplest solutions of the problem is to place the bull on the farm of a man who owns a large herd and to let him keep the bull at his own expense for the privilege of having the bull convenient and to eliminante the necessity of leading so many cows to the bull. As a non-member he

Pen made of upright planks

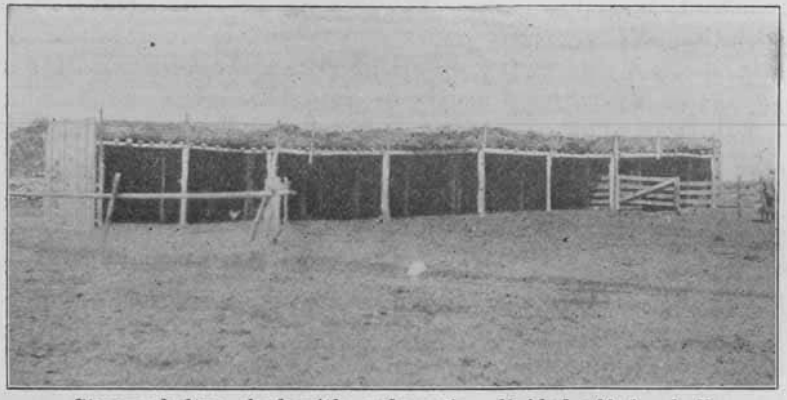
would usually be forced to keep a bull of his own and by joining the association he gets a higher quality bull for less money and the inconvenience of having his neighbors' cows brought to his place to be bred. It is often difficult, however, to find a man centrally located in a block with sufficient cows to justify this arrangement especially where the herds are small.

Another arrangement is to locate the bull at a central point and then have the members contribute feed for the bull. This plan calls for no cash outlay on the part of the members and seems on first consideration to be satisfactory. It was tried in quite a number of cases in Idaho but has not proven successful. It is difficult to get members to contribute feed regularly and the feed furnished is not always of good quality.

The experiences in the associations studied indicate that this method seldom works for any considerable period of time.

Another arrangement is to have the bull rotated to different farms, thereby reducing the burden on any one farmer. This has also been tried but has not proven successful because, first, the members do not always know where to find the bull when they want him; second, it is difficult to keep the bull at a central place constantly; third, the farmers' care of the bull varies too much, almost invariably causing poorer management; fourth, the bull is more apt to become vicious; and last and most important, it is impossible to keep the bull in a good pen where he will be safe and get enough exercise. This system has proved uniformly unsatisfactory. The only case where a variation of this system might work is where the block consists of large herds with the members some distance apart and where two bull pens can be provided with the bull kept in each at definite periods.

Another arrangement is to pay the caretaker a flat rate



Straw shelter shed with end section divided off for bull

per year from the association treasury. This has the advantage that the care of the bull is more directly under the supervision of the officers who can demand proper methods. The disadvantages are that it depletes the treasury and that it is difficult for the association to make a contract that is just to all and at the same time one that can be carried out over a period of years. Once the price is set it is difficult to change

and the associations vary in condition so much with respect to the number of members, cows and shares, and also financial conditions that making a flat rate contract is dangerous. The associations that have tried this method have had difficulty in carrying it out over a period of years.

In some cases a service fee is charged on every cow bred and all or part of the fee is kept by the caretaker for his services. This is not entirely satisfactory because of the variation in the number of cows. The number does not vary so much from year to year in an association or a group of associations, but the variation may be great in certain blocks and the difficulty become acute. For example, if there are 40 cows in a block and one member with 10 cows sells out or for some other reason quits the association, one-fourth of the revenue for maintenance is lost. However, this system has been more satisfactory than some of the others mentioned.

The system which has been tried of late is to make an assessment of a stipulated amount on all shares for the maintenance of the bulls. The advantages of this plan are that the association officers have more control of the caretakers and that the shares do not vary so much as the number of cows bred. It seems to have some advantages over the other methods but the annual levy of assessments may be a disturbing factor in associations that are not in good condition.

In Idaho at the present time the prevalence of different methods of paying the caretakers is expressed in the following percentages: Service fees, 43.4 percent; caretaker, only member in block, 22.7 percent; caretaker furnishes everything for bull, 14.4 percent; bulls rotated among members to distribute costs, 11.3 percent; caretaker furnishes roughage, association furnishes grain, 5.2 percent; members of block furnish feed by contribution, 3.0 percent.

This problem is not solved and justifies further study. The experiences with the various methods in Idaho should be of value especially when it is considered how important it is that the bull be well cared for and the caretaker well satisfied. Whatever system is adopted it is essential that the bull be kept at a central point in the block and that a standard pen be provided.

Records Kept by Caretaker

In addition to the proper feeding and management of the bull the caretaker must be responsible for a complete record in permanent form of all cows bred and all moneys taken in, and must be prepared to make a yearly report to the secretary-treasurer of the association at least 15 days before the annual meeting. By summarizing the reports of all the caretakers the secretary can make a report for the annual meeting which will give a true picture of the progress of the association as a whole and by blocks. In the past it has been difficult in Idaho to get these reports from the caretakers. Complete records furnish the best methods of determining such things as breeding troubles in a block, what members are not using the bulls, what members are using more services than represented by shares, etc.

Disease Control

Due to the prevalence thruout dairy herds of the country of sterility, shy-breeding, and abortion, complaint is rather common that cows do not conceive after service to the association bull and inasmuch as the cows must be led to the bull, the bull is usually accused of being the source of the trouble. Nothing develops dissatisfaction in a block as quickly as failure to get the cows with calf. The members become disgusted, seek bull service elsewhere and are weaned away from the association. The great difficulty is the fact that the average farmer is very reluctant to agree that the trouble lies with his cows.

This situation can only be met by having very hard and fast rules regarding it in the by-laws of the association and by enforcing these rules rigidly. Briefly, these rules require that all animals be tested and found free from tuberculosis and that no cows having a vaginal discharge be served. Any cows served more than three different heat periods must be examined by a licensed veterinarian. These may appear rather rigid regulations but when we consider the prevalence of sterility their enforcement is really a great help to the farmer in correcting troubles in his cows before they become chronic

If the complaint about lack of conception is general it is

much better to determine the truth and either exonerate the bull as the source of trouble or condemn him for impotency. This can be done by having a competent person take a sample of the semen and examine it for motility and vitality of spermatozo, and for the presence of pus forming organisms.

Information was gathered during the past year on the number of heat periods the cows were served by association bulls. The results obtained on 2,624 cows are shown below.

Table X

SERVICES PER COW SERVED BY ASSOCIATION BULLS

Number times served	Cows Served		Number times served	Cows Served	
	Number	Percent		Number	Percent
Once	2,624	100	Once only	1,723	65.6
Twice	901	34.3	Twice only	537	20.5
Three times	364	13.9	Three times only	192	7.3
Four times	172	6.6	Four times	172	6.6

The above table shows that 34.3 percent of the cows came back for second service, 13.9 percent for the third service, and 6.6 percent for the four services. However, of the cows served 65.6 percent were served once only, 20.5 percent were served twice only, 7.3 percent were served three times only and 6.6 percent were served four times. The farmers reported 124 cows that did not conceive or 4.7 percent of the total. That would leave by deduction 48 cows, or about 2 percent of the total number, that conceived on the fourth service or on later services.

These figures were gathered from 455 farmers and represent cows bred only to association bulls. It is possible that the cows were bred later to other bulls and conceived but the results up to the first three or four services should be quite accurate. Computed on the basis of the first four services, 53 percent more services were required than the number of cows, making about 1.5 services per cow. This does not include services later than four periods.

Exercise of Association Bulls

As stated before, the policy in the management of association bulls has been to keep the bull in a pen specially built for

the purpose. In the beginning pens of at least 1,800 square feet (30x60 feet) were recommended, but observations of results obtained have convinced the authors that the pens should be larger in order to reduce some of the chances for trouble. It has been conclusively proven that exercise is one of the most important factors in keeping bulls potent*. Under farm conditions provision must be made so that the bull will take exercise without any effort on the farmer's part. In the case of old bulls, which are the proven bulls in some cases, it has been quite a problem to make them take enough exercise to maintain high breeding efficiency. In a few cases as a last resort quiet bulls have been turned out with the cows on pasture and cows in heat kept in the barn. This has proven efficacious as a corrective in bulls not too low in breeding efficiency but of course it is dangerous and not generally a desirable practice. The problem of exercise is serious and must be met in some practical manner under farm conditions. To date seven bulls have become impotent necessitating that they be sold for beef. The ages of these bulls were from about four to nearly eight years, averaging 5.5 years. This problem will become more and more important in Idaho associations due to increasing age of the bulls.

Use of Association Bulls

Of the 455 members belonging to the 18 associations studied, 336 or 74 percent used association bulls exclusively during the past year. There were 92, or 20 percent, of the members that used the association bulls only on part of their herds, and 27, or 6 percent, did not use the association bulls at all.

Reasons given by the 92 members for using association bulls on only part of their herds are listed below:

* Page 22, Bulletin 167, Washington Experiment Station Report 1921.

Members		Reason given
Number	Percent	
*43	46.7	Too far to lead cows.
*18	19.5	Needed more shares in association.
14	15.2	Failure of cows to conceive.
5	5.4	Cows bred to bulls of same breed when different from breed of association bulls.
3	3.4	Lack of interest.
*2	2.1	Association bull too young for service.
*2	2.1	Association bull receiving poor care.
*1	1.1	Bull had been used to limit.
*1	1.1	On account of association bulls not having been rotated.
1	1.1	On account of there being more interest in beef.
1	1.1	Heifers bred on range to beef bulls.
1	1.1	New members, cows bred before joining association.

*Directly attributed to organization and management.

Thus we find that 81.4 percent of the reasons are in the first three listed and distance to lead cows if combined with the one case of lack of time, represents the reasons given by one-half the members. The reasons directly attributed to organization and management of the association represent 71.6 percent of the members. Some of the other causes could be eliminated by more educational work and better follow-up methods.

The reasons given by the 27 members not using the association bulls at all during the past year are as follows:

Members		Reasons
Number	Percent	
*7	26	Had no bull in block during year.
*6	22	Too far to lead cows.
4	15	All cows bred accidentally.
*3	11	Bulls not good enough.
2	8	Failure of cows to conceive.
*2	8	Association bulls too young for service.
1	4	Member absent from farm during year.
1	4	New member, cows bred before joining.
1	4	Cattle dealer (buys and sells cattle.)

*Directly attributed to organization and management.

Of the reasons, 67 percent could be attributed to organization and management. In general the same type of reasons are given as in the cases of only partial use of the association bulls.

Since joining the associations, 7 percent of the members have purchased bulls of their own and almost two-thirds of them gave as their reason the distance cows must be led to the bulls.

Information gathered on the service of 3,407 cows in the association showed that 2,624 or 77 percent were bred to association bulls and 783 or 23 percent were bred to non-association bulls. Of the cows bred outside of the association, 681 or 20 percent of the 3,407 cows were intentionally bred to other bulls and 102 or three percent of the total were accidentally bred to outside bulls.

Distance to Lead Cows

It has already been shown that the distance the farmer is required to lead his cows to the bull is one of the common criticisms of the bull association. Therefore, the distance the members are from the caretakers' farms deserves careful study.

As might be expected, great variation was found in the distance the various farmers were content to lead cows from various sized herds. This variation was due to differences in quality of bulls and in interest shown by farmers in better

breeding. A summary of distances of herds from caretakers' farms is as follows:

Table XI

LOCATION OF COWS AND HERDS FROM CARETAKER'S FARM

	On Caretakers farm		Others within 1-half mile		Within 1 mile		Wihtin 1 mile including caretakers'		Over 1 mile	
	No.	%	No.	%	No.	%	No.	%	No.	%
Cows	1,476	40.5	959	26.3	1,435	39.4	2,911	79.9	730	20.1
Herds	118	25.9	145	31.2	228	50.1	346	76.0	119	24.0

The above table shows that in 18 asosciations after an average of four years' operation 25.9 percent of the members were caretakers of bulls and that they owned 40.5 percent of the cows. Including the cows on the farms of the caretakers 80 percent were within one mile of the bull. These cows represented 76 percent of the membership. Of the cows that had to be led to the bull 44.3 percent were within one-half mile, 66.3 percent were within one mile and 33.7 percent were over a mile. Of the members that had to lead their cows to the bull, 43 percent were within a half mile, 67.7 percent were within a mile and 32.4 percent were over a mile from the bull. The following table shows the number of cows bred to the association bulls that were led different distances.

Table XII

NUMBER AND PERCENT OF COWS BRED TO ASSOCIATION BULLS THAT WERE LED TO THE BULLS

	Herds represented		Cows represented		Herds using association bulls		Cows bred to association bulls		Percent of cows represented that were bred to assn. bulls
	No.	%	No.	%	No.	%	No.	%	
Within one-half mile	145	43.0	959	44.3	133	42.7	652	46.1	68.0
Within one mile	228	67.6	1435	66.3	211	68.1	1002	71.0	69.8
Over one mile	109	32.4	730	33.7	99	31.9	410	29.0	56.2
Total	337		2165		310		1412		

The above table considers only cows that must be led to the bull and does not include caretakers' cows. Of the cows within a mile of the caretakers' farm about 70 percent were bred to the association bull, while only 56 percent of those over a mile from the bull were bred. Thus only 80.5 percent as many cows over a mile from the bull were bred to association bulls as were bred when the cows were within a mile. In other words, for every five cows bred within a mile, only four were bred when the distance was over a mile. The study revealed that 82 percent of the cows on the caretakers' farms were bred to association bulls. Assuming this to be the normal. or 100 percent, we find that of the cows led to the bull within a radius of one mile, 85 percent as many were bred as on the caretakers' farms while of the cows led over a mile only 68 percent as many were bred to association bulls as on the caretakers' farms.

The percentages bred in all classses, especially the caretakers' herds, seem low but it must be considered that these figures include new caretakers, new members and cows bought, in all of which cases the cows might be already bred to other bulls. They also include accidental breeding, etc. The percentages given are for cows bred to association bulls and do not indicate the percentage of breeding efficiency of the herds. However, the figures are comparable and clearly show that distance is quite a factor in the extent to which association bulls are used by members.

Size of Herds

Size of herds and distance necessary to lead cows are two very closely related factors in the success of an association. As mentioned before there was considerable variation in the distance members would lead cows, depending on the quality of bulls and the interest of the members. The same applies to the size of herds. The size of herds varied from one animal used as a family cow to large herds. Experiences in Idaho associations indicate that as a general rule members owning one or two cows have very little interest in developing a herd of high-producing cows and for that and other reasons they are apt to drop out and merely make the organization

unwieldly and unstable. There are exceptions but in general it appears doubtful whether these small herds are desirable material for bull associations.

Quality of Dairymen Selected

From the standpoint of permanence and success of the associations some care should be exercised in the selection of members when organizing. Associations have been organized by intensive campaign methods in some communities while in others thru educational programs the demand for associations has come from the dairymen. Experience indicates that the most permanent and successful members are the farmers who have already made some progress and keenly appreciate the opportunity for improvement that the bull association offers. Farmers who join associations due to the enthusiasm of a campaign are more likely to lose their enthusiasm and drop out, thereby embarrassing the association as a whole. Altho most farmers need help it is not advisable to jeopardize the success of the bull association by including the wrong type of members. A small association that is successful and permanent is far better than a large one that is short lived or constantly on the verge of dissolution. Not only men permanently in the dairy business but men permanent in the community should be selected. In Idaho 92 percent of the present members of associations own their farms, indicating that farm owners rather than renters are attracted to the bull association project.

The following table shows the turnover in membership and in the number of cows:

Table XIII

SIZE OF HERDS OF MEMBERS REMAINING AND MEMBERS LOST IN EIGHTEEN ASSOCIATIONS

	Original members at time of organization				New members added since organization				Total members that have been in association	
	Members		No.	Av. No.	Members		No.	Av. No.	Members	
	No.	%	Cows	Cows	No.	%	Cows	Cows	No.	%
	633	100	3609	5.7	160	100	820	5.1	793	100
Lost	290	45.8	1604	5.6	48	30	212	4.4	338	42.6
Present	343	54.2	2790	8.1	112	70	851	7.6	455	57.4

Of the 633 original members, 343 or 54.1 percent are still in the asociations after four years of operation. Of these 236 have increased their herds an average of 4.3 cows, while 55 members have decreased their herds 4.4 cows per herd and 52 herds made no change, making an average increase of 2.4 cows for all the original herds. Of the original members in the associations, 45.9 percent have dropped out while of the new members added 30 percent have dropped out. Of all the members that have been in the associations 42.6 percent have been lost.

The average size of the herds in Idaho at the time of organization of the 18 associations was 5.7 cows while now it is eight cows. In the beginning 87 percent of all herds were composed of 10 cows or less whereas at present only 73 percent are in that class. Sixty percent of the herds had five cows or less at the start and now after four years of operation only 40 percent are of that size. These figures indicate a general tendency toward larger herds.

Lack of Shares

The constitution and by-laws adopted by the associations provide that members could breed cows for which no shares were held by paying double the regular breeding fee. This has apparently reduced the number of shares owned as well as the number of cows bred. At the time of organization the members owned 18 percent less shares than cows of breeding age; after an average period of four years they own 27 percent less. Sixty-seven percent of the members needed 87 percent more shares than they owned. Of the members that reported using the bulls on only part of their herds, 19.5 percent gave as a reason the lack of sufficient shares. One of the important factors in the success of an association is to maintain maximum use of the bulls, in order to better distribute investment and overhead costs, thereby keeping the association better financed. The above data indicate that much attention must be given to keeping the shares sold up to an amount the association can handle. It seems probable that the best solution of this problem is to require in the constitution and by-laws a share for each cow bred to the association bulls.

Town Blocks

In several cases town blocks have been organized in an effort to form standard associations of at least three blocks or to organize large associations. A town block is one in which the bull is kept in or close to a town to take care of family cows. This type of association block has given considerable trouble and most of them have dissolved. The following table gives data on five town blocks that disbanded.

Table XIV

TOWN BLOCKS COMPARED TO THE AVERAGE BLOCKS OF BULL ASSOCIATIONS

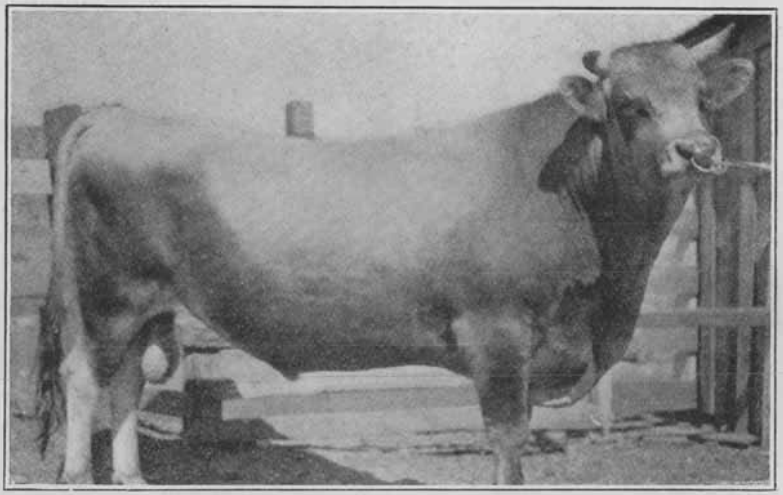
Name of Block:	A	B	C	D	E	Ave. of 5 town blks.	Ave. of 110 blks
No. Cows	26	42	36	37	24	33	33
No. members	13	16	9	10	11	11.8	4.1
Ave. No. Cows per member	2	2.6	4	3.7	2.1	2.8	8.0
No. Cows owned by caretaker	2	3	5	2	1	2.6	12.1

The above table shows that town blocks averaged the same number of cows as all the blocks in the association. There were 12 members per town block as compared to four members per block for all the blocks. In town blocks the average number of cows per member was 2.8 compared to the average of eight cows for all members of the associations, and the caretakers in town blocks averaged only 2.6 cows while the average for all caretakers in the associations was 12.1 cows. Town blocks had too many members with too few cows per member and no one had sufficient cows, not even the caretaker, to be vitally interested and act as a leader in the affairs of the block. Except under very favorable conditions, town blocks are difficult to handle and are too loosely organized to justify forming a part of a bull association. It would seem more desirable to merely organize a bull club for the one bull rather than add such a burden to an otherwise successful bull association.

Rotation of Bulls

The by-laws of the organization should indicate the blocks of the association by number and the bulls should be rotated

numerically except in unusual circumstances. Several times trouble has arisen because the decision as to the way the bulls should be rotated is left until the time for rotation. Invariably differences of opinion develop as to the comparative value of the bulls. This is due to differences in records back of the different bulls, type of the bulls, condition due to feed and care, relative tractibility, etc. Some members have dropped out due to such situations and in a few cases members have become so enthusiastic over one bull that they refuse to rotate. In the first place, bulls must all be of sufficient quality that



Representative Jersey Bull owned by the Bliss Jersey Bull Association

any of them will improve the herds and, second, the members must be impressed with the fact that all the bulls belong to all members of the association, and no one bull belongs to the members of any particular block.

Loss of Membership

Maintaining the membership and the number of cows up to standard is very essential in the proper financing and operation of a bull association. The associations studied had 633 members at the time of organization. In four years' time 338 members have been lost and 160 new members added, making a total of 455 members at present.

Of the 388 members lost 169 were losses to the dairy industry in the community and 169 were losses to the bull associations but not to the dairy industry of the community. Losses to the dairy industry of the community include such cases as members who have left the farm, moved to other communities, or quit the dairy business, members who have died, and individuals who took shares at the time of organization purely because of community pride. The community pride group did not expect to use its shares but believed the bull association was a good thing for the dairy industry in the community and therefore took shares to help finance the association and get it started. These community pride shares represent some farmers but in many cases they represent bankers, merchants, service clubs, etc.

Table XV

MEMBERSHIP LOSSES AND REASONS FOR SUCH LOSSES IN 18 ASSOCIATIONS SINCE ORGANIZATION

Reasons	No. Members Lost	Percent
Total losses to the dairy industry in the community		50%
Left farms	99	29.3
Returned to beef cattle	20	5.9
Died	8	2.1
Sold cows	25	7.3
Community pride	17	5.1
Total	169	
Losses to bull associations but not to dairying		50%
Unavoidable		15.4%
Disliked leading cows	3	1.0
Breeding troubles	6	2.0
Not interested in breed selected by association	5	1.6
Refused to pay assessments	10	3.0
Not interested in better breeding	21	6.2
Dissatisfied care given bull	1	.3
Disliked association bull	1	.3
Expelled	1	.3
Total	52	
Avoidable (Due to either faulty organization, management or follow-up work		34.6%
Enlarged herd and purchased own bull	7	2.0
Too far to lead cows	70	20.6
Dissatisfied with block management	3	1.0
Disbanded blocks (3)	37	11.0
Total	117	

The above table shows that of the members lost to the dairy industry of the community almost two-thirds were members leaving the farm. Losses due to members quitting dairy industry in the community varied according to local conditions.

Of membership losses attributable to the bull association operation two-thirds were due to what appeared to be avoidable causes. Over 40 percent of the avoidable causes were due to members having too far to lead cows. Of the unavoidable losses about two-thirds were due to lack of interest in better breeding. A study of the table indicates that with proper organization, good management and continuous follow-up work of an educational nature a large percentage of the losses might be avoided. The average loss of membership has been 10.6 percent per year over the four-year period. It seems evident that associations must expect some loss of membership regardless of how well they are managed, and provision must be made for adding new members or increasing the shares of the original members in order to maintain the association up to the original standard number of cows and thus properly finance it.

Loss of Blocks

Up to date 22 blocks or 20 percent of the original 110 blocks have been lost. Ten were lost in two associations where the organization consisted of members who already owned bulls but signed an agreement to exchange bulls by rotation. Six of the blocks were lost because members were closed out and forced to leave the farm, two were not interested in better breeding, and two were poor cooperators. Two blocks were consolidated with other blocks due to the death of the bulls. Further discussion of the type of organization composed of single member blocks will be found in the section on organization.

The other 10 blocks lost were scattered and four of them were town blocks, which have not proven successful as has been mentioned before. One other block lost consisted of one member who sold his cows. Two blocks were lost when members returned to a different type of farming. One block failed because a large number of farmers moved out due to an alkali

condition of the soil and the failure of the other two blocks was due in one case to lack of payment of service fees and in the other to the caretaker being a poor cooperator. Since organization, seven new blocks have been added, leaving 13 less at present than at the time of organization.

Loss of Bulls

In the 18 associations studied 111 bulls were owned at the time of organization, 31 or 28 percent of which have been lost to service in the associations during the four-year period. Sixteen of the 31 lost have been replaced and two other blocks consolidated with existing blocks, making 15 less bulls at present in service in the associations than at the time of organization. In only two cases has the death of the bulls been a contributing factor toward the failure of a block. By bulls lost to service in the association is meant bulls removed from any cause. The folowing table shows the reasons for disposal of the bulls lost to service in the associations:

Table XVI

REASONS FOR DISPOSAL OF BULLS REMOVED FROM ASSOCIATIONS

Reason For Disposal	No. of Bulls
Bull died or injured making unserviceable and requiring slaughter	12
Sold out of association when member left association	7
Impotent	6
Poor quality of offspring	4
Butchered by caretaker	1
Sold because of viciousness	1
Total	31

Of the 31 association bulls removed from service nine died and three were made unserviceable thru injury, making a total of 12 bulls removed due to death or injury. Members leaving the association accounted for the disposal of seven bulls, and in most cases these were blocks of one member only. Six bulls became impotent and four sired undesirable offspring. One bull became so vicious that the members changed him for another, and in one case the caretaker who was the only member of the block became dissatisfied and sold the bull to the butcher.

The number of bulls lost from the associations has not been as high to date as might be expected in the future, due to the fact that most of the associations have been in operation six years or less and most of the bulls are not very old. Proven sires constitute one of the goals of this project, but the difficulties in keeping old bulls serviceable make it important to know under farm conditions how many years of service can be expected after the bulls become old enough to be proven; that is, five to seven years of age. Information will continue to be gathered on this subject in the future and it should be of value.

ORGANIZATION PROBLEMS

Organization problems and management problems are closely related since many of the management problems develop thru improper organization. It has already been shown that many of the difficulties in management could have been avoided thru proper organization. To avoid repetition, no mention will be made of the factors discussed under management, altho they may directly affect the organization process.

In the past enthusiasm has led to an attempt to organize as many and as large bull associations as possible. Experience has proven that it would have been more wise in many cases to have been more careful in selecting members, even tho fewer bulls were placed. The possible good to be derived from a bull association is too great and the association means too much to a community to justify courting failure by allowing enthusiasm to sweep aside better judgment.

After the members have been signed up and bulls provided, the job of perfecting an organization with satisfactory methods of regulating operation is at hand. The members should be organized on a truly cooperative basis and experience dictates that the association should be incorporated under the laws of the state as a non-profit sharing corporation.

The officers selected should have the confidence of the people, should be capable business men, and, if possible, good dairymen. They should be tactful in their dealings with the members but should be aggressive and determined in the administration of the constitution and by-laws or any other regu-

lations agreed upon by majority vote of the members that are for the welfare of the association at large. In other words, they should be real leaders in the community and willing to exercise this leadership to make the association succeed.

The constitution and by-laws are one of the most essential factors in the success and life of the organization. There seems to be a natural and universal dislike among farmers for lengthy constitutions and by-laws and these seldom receive the consideration that their importance justifies. However, this antipathy must be overcome if many of the future problems are avoided. The constitution and by-laws can hardly be too detailed or too explicit. Each member should be required to sign the constitution and by-laws and be furnished with a copy. Care must be exercised to see that each member understands all provisions in order to prevent future misunderstandings.

One thing that is important is that the administration of association affairs, except those presented at a meeting, be relegated to an executive committee of the board of directors, the committee to be guided by the board of directors. In large associations the board of directors is too large for efficient administration and there is too much opportunity for division of responsibility and consequently lack of leadership.

A copy of the constitution and by-laws found most satisfactory in Idaho will be sent on request.

Number of Blocks

In several instances in Idaho a number of three-block associations of the same breed of cattle have been organized within a county. Two or three separate standard associations in the county make the report on the project look more favorable, but it has been found that the bull association project within the county made more progress when one large association for a breed was maintained in preference to several smaller associations. In most instances the associations of the same breed within a county have been consolidated into one association unless they were widely scattered. More blocks in one association reduces the risk of investment for each member, thereby reducing the assessment per member

for bulls removed from the association for any cause. The most important reason for consolidation is the difficulty of finding for each association a capable set of officers to take active control of the organization. An executive committee of three very able men selected from the board of directors will be more successful in directing the affairs of all blocks than several sets of less capable or less active officers.

Single Member vs. Group Blocks

The average number of members per block was 4.1 for all of the 18 associations. However, quite a number of blocks contained only one member. Often a farmer having a sufficient number of cows would agree to come into the association and form a block by himself, thus eliminating the necessity of buying a bull every two years. In other cases, the farmer would buy more shares than he needed in order to get into the association as a separate block. As previously shown, single-member blocks account for a big proportion of block losses since the life of the block depends solely on one member. While a single-member block eliminates some of the objections to bull associations, such as leading cows to the bull and the dissension among block members, at the same time the block lacks community interest. Also this type of block has been a little more difficult to manage with respect to bull pens, feeding of the bull, etc. There has been more of a tendency on the part of the single-block members to feel that they have exclusive rights to the bull on hand, which develops lack of unity in the entire association.

Two associations composed entirely of single-member blocks were studied. Both were formed by getting dairymen owning good bulls to agree to exchange with each other every two years in order to eliminate the necessity of buying new bulls and to preserve the present bulls until their daughters reach producing age. This was a worthwhile move toward proven sires and reduced bull costs but altho the members signed a constitution and by-laws, the organization lacked the true cooperative effort and government and if one member decided to withdraw he did so. Therefore, many blocks of the original associations were lost due to members selling their

herds and bulls or merely refusing to cooperate. This type of association has the advantage of simplicity of operation but really amounts to little more than a tentative agreement to rotate bulls when the time for exchange arrives. It lacks many of the influences for betterment of the dairy industry of the community which the more cooperative associations with several members per block have.

Bull Clubs vs. Bull Associations

A bull club is a group of farmers who buy one bull cooperatively. The bull club lacks many of the most important advantages of a bull association because it is necessary to buy another bull every two years and provision is not made to keep the bull in maximum service after the first two years and to preserve him until his breeding qualities are proven by the production and type of his daughters. It has the advantage over private ownership of reduced bull cost but cannot furnish the other benefits of a bull association because it lacks organization to perpetuate itself.

Methods of Financing Bull Associations

In financing a bull association the three most important needs for money are: first, the purchase and delivery of bulls and furnishing of sheds and pens; second, payment of caretaker; and third, development of a sinking fund to replace bulls lost. The purchase of bulls, delivery costs and sheds and pens in which to keep the bulls are all initial costs in the starting of an association.

These initial costs are usually met by the sale of shares. Prices and descriptions of bulls should be obtained by the organizers from many sources and a liberal estimate made on the cost of delivering bulls of the quality desired. Then a minimum number of shares per block, usually forty, is decided upon and the par value of the shares set. If 40 shares at $10.00 each are sold in each block, $400.00 will be available for the purchase and delivery of a bull. All the bulls need not cost the same amount but fairly uniform quality is desirable. The costs of the bulls delivered are averaged as all the blocks are interested in all the bulls. In some cases al-

lowance for cost of material to construct a shed and pen of a standard type is included in the estimate of par value of shares. This system has proven more satisfactory than assessing each block for money to build a shed and pen after the bull has arrived. In Idaho the value of shares sold has varied from $4.00 to $10.00, averaging $6.00. In recent years the policy of advocating $10.00 per share has made possible the purchase of better quality bulls and also has eliminated many undesirable members that would not join for this amount.

Many different schemes have been tried in handling the purchasing funds and in some cases much grief has resulted. The only safe way is to have all the money deposited in the bank in the name of the association before any purchasing is done. Borrowing part of the money from a bank in the hope of selling future shares can only lead to trouble. No association can expect to succeed unless it at least starts with no obligations.

The raising of the initial funds for placement of the bulls is relatively simple compared to obtaining money for the other two needs mentioned. The method of payment of the caretaker has already been discussed under management problems. Assessments should be avoided as much as possible as the members dislike continually being requested for more money even if the amount is small.

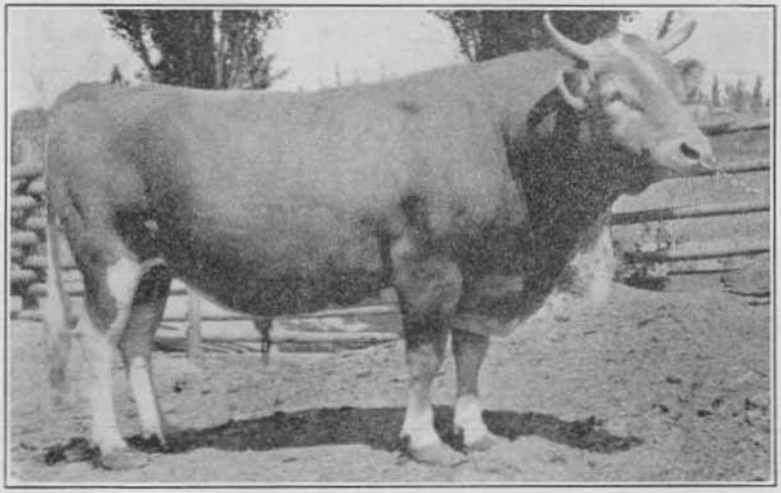
Creating a Sinking Fund

Some organized method of developing a sinking fund for the association should be adopted. This fund should accumulate as time passes in order that any bulls removed from the association for any cause may be replaced. If a bull dies or becomes impotent the members quite readily vote to buy another provided sufficient money is in the treasury. However, if the treasury funds are low the purchase of another bull becomes not only a problem but sometimes an issue among the members and gives the impression to all that the association is in bad condition. Also where bulls are purchased for replacement experience indicates that there is great possibility of sacrificing quality by buying cheaper bulls with the

money available. Nothing speaks for the success of the organization among the members like a good bank account.

The three usual methods of obtaining money for the association treasury are assessments, breeding fees and the sale of undesirable or unserviceable bulls. Assessments, either annual or special, should be on the share basis rather than per member. Assessments leave the impression of an appeal for help, are not welcomed by the members, and are not good for the reputation of the association. This method of raising money is not advocated except in case of necessity.

Service fees for cows bred to association bulls bring regular income and are not objected to by the farmer. This need for service fee must be explained on the basis of association maintenance. If a farmer purchased a bull privately he would,



Representative Guernsey Bull owned by the South Jerome Guernsey Bull Association

in addition to paying for the bull, be forced to maintain him. Likewise the association members cooperatively purchase bulls and thru breeding fees cooperatively maintain them; the maintenance cost per farmer being directly proportionate to the amount he uses the bull. It is a mistake to set the breeding fee too low as at least one-third to one-half of the fee should go into the sinking fund. A breeding fee scale should

be adopted whereby cows represented by shares are a certain amount, cows not represented by shares but owned by members of the association probably twice as much, and cows owned by non-members three times as much. In this way the cows represented by investment in the bull have cheapest service fee, the members breeding extra cows are encouraged to buy more shares to prevent paying double, and outside farmers are penalized for not belonging and thereby are encouraged to come in. The breeding fee per cow for non-members should be almost equal to the cost of a share to represent the cow. In other words, the members thru their responsibility and risk of bringing the bulls to the community receive more benefits than farmers not contributing to the project.

The amount of money accumulated for a sinking fund thru breeding fees will vary with the various communities but this seems at present to be the best method of creating such a fund. The sale of bulls displaced for causes other than death, such as impotent bulls sold for beef, will furnish some supplementary money for the sinking fund but this will not remove the need for an organized method of creating this emergency fund.

Maintaining Interest in Association

In order for an association to be successful over a period of years, the interest of individual members must be maintained. Satisfactory officers are essential but the officers alone cannot keep the association in good condition. The members must be actively interested and willing to help make the association succeed. Keeping the members interested deserves serious consideration because in the last analysis lack of interest is the source of most of the difficulties, regardless of the contributing causes.

As mentioned before, the quality and condition of bulls directly effect the enthusiasm of the members. Another factor in maintaining interest is a very complete constitution and by-laws uniting the members into a truly cooperative organization. Wherever associations have been rather loosely organized, having very few meetings and allowing each block to completely govern its own affairs, trouble has arisen. Members must be impressed with the fact that all of the bulls

belong to the entire membership and no one block is independent in the management of its affairs. Efficient officers should head the organization and they must justify the confidence of the members by closely supervising the management of the various blocks and by insisting that regulations agreed upon be fulfilled.

Due to detailed regulations covering management and to the fact that the organization was for a period of six or more years, it was thought at first that the associations would require less supervision by members of the extension division than would cow testing associations since the latter are organized for only one year at a time. Experience has shown. however, that continuous supervision is essential in most cases for success of bull associations. A rather systematic educational program should be conducted in each association. The educational plan is most effective when it requires unity of effort on the part of members.

One of the most effective educational features is a dairy tour at least once a year. Successful breeders, state officials, breed association representatives and members of the agricultural extension division and others should take part in the tour. Thru proper publicity every member should be encouraged to attend. All association bulls should be inspected and any other farms with outstanding herds or farms where good examples of breeding efficiency of bulls can be demonstrated thru their daughters should be visited. These tours may wind up in a short dairy meeting with a few speeches, or the speeches may be made at the various farms visited. All speeches should stress better dairy methods and the members should again be impressed with the advantages of the bull association and the quality of bulls that they own. Praising of association bulls by visitors does much to stimulate interest. Tours also have the wholesome effect of making the caretakers either proud or ashamed of the condition of their bulls in comparison with the others. Tours have been very useful methods of developing interest in Idaho associations and they are annual affairs in most associations in the state. They also draw public attention to the associations and interest other dairymen in becoming members.

Another method of developing public and membership interest is to hold a community dairy show of the breed represented by the association. The members arrange and manage the show. As many of the association bulls as possible and as many of the daughters with their dams as can be assembled should be exhibited. In Idaho dairy shows have developed in the larger associations where there are large numbers of cattle to choose from. In many cases the shows have been outgrowths of tours. These shows are more educational than commercial and very little stress is laid on prize money.

Either of these methods demands collective activity by the members which develops cooperation and much inspiration and education are derived from them. Advantage should be taken of every opportunity to take people to inspect the bulls.

Each caretaker and if possible each block member should have a pedigree of all the bulls. Probably not over five percent of the members actually know anything about the bulls other than that they are supposed to be good ones. Members should be encouraged to subscribe to breed magazines and dairy papers. The association may possibly foster a dairy school in the community, arranging subjects that apply to the problems of the members.

Achievement days do more than any other thing to put new life into an association in bad condition; or develop more enthusiasm in a successful one. Occosional visits by the state exsion dairymen help to iron out little difficulties that may later develop into real grievances. One of the most essential things to the proper operation of an association is to have a county agricultural agent in the county. By having the county agent on the job all the time, many of the problems are easily solved and most of the complaints stopped before they become chronic. This point cannot be stressed too strongly because in the Idaho associations in counties without county agents have been the ones having the most trouble and demanding the most help. The thing to bear in mind is that it is far easier to prevent trouble than to correct it.

Annual Meetings

The annual meeting is a very important and necessary part of the annual activities of any bull association. It affords an opportunity for completely analyzing the progress of the association during the past year and for making future plans accordingly. It makes possible the finishing of old business and starting the new year on a firmer business basis. It also can serve as a clearing house for all unsettled problems or differences of opinion among the members. Leadership among the members is developed thru annual meetings. The officers should emphasize the right of every member to a voice in the meeting. However, the officers must be careful in handling the meeting to prevent some member from causing dissension over some trivial question which is probably only a personal matter.

Annual meetings offer an excellent opportunity for creating enthusiasm for the association and pride in the bulls. It seems impossible to maintain interest unless members are regularly reminded of the advantages of the association and of the quality of the bulls owned. One of the best times to have the state extension dairyman present for an address on better dairy methods is at the annual meeting. This is a critical time in the association and if possible the extension dairyman should be there to offer some guidance. The annual meeting if properly handled can be the source of much good to the association, but if personalities and trivial prejudices are allowed to creep into the proceedings, much harm may be done. All members should be urged to attend and under no circumstances should any money be collected as this will affect attendance at future meetings.

The spirit of give and take must prevail and the fact recognized that the bull association cannot be handled to the absolutely perfect satisfaction of all any more than in any other organization. The ultimate good to be attained must be kept foremost in the minds of all members and any slight differences of opinion that do not vitally affect results must be overlooked.

SUMMARY

A study was made of 18 cooperative bull associations in Idaho to determine the results obtained in improving dairy herds.

Cooperative bull associations reduced investment in bulls per man and per cow. Altho the average investment per bull was $82.00 for those displaced compared to $213.00 for association bulls, the average investment for farmers previously owning bulls was reduced from an average of $82.00 per man and $8.09 per cow represented to $68.00 per farmer and $6.68 per cow after organization. The cost per farmer for all the association members, including farmers not previously owning bulls, was $35.00 and $6.36 per cow.

Bull associations reduced risk of capital. Before organization each bull was owned by one man while after organization there were an average of four farmers per bull.

Maintenance cost per bull was reduced. Before organization the maintenance cost of each bull was charged to one farmer owning an average of 10 cows while after organization the maintenance cost was charged to an average of four farmers owning a total of 33 cows.

Bull associations supplied better quality bulls. Previous to organization 59 percent of the farmers were using beef bulls, 12 percent were using grade dairy bulls, and 29 percent were using purebred dairy bulls. Of bulls displaced only 7.7 percent were out of cows with butterfat records while 82 of the association bulls were out of cows with an average record of 638 pounds of butterfat.

Bull associations tend to standardize the herds to one breed. At the time of organization 49 percent of the cows were of the same breed as the association bulls but after operating an average of four years this was increased to 73 percent. Of 455 herds 29 percent were standardized to one breed in the beginning. In four years 14.5 percent of the other herds were completely standardized. Interest in improved cattle was shown by the purchase of purebred and high grade females for foundnation cattle.

Heifer calves sired by association bulls sold for $9.25 more per calf than calves by other bulls in the community.

The production of 48 daughters of 16 association bulls was 76.8 pounds of fat, 23.2 percent greater than that of the dams.

Bull associations tend to develop better dairy practices such as tuberculin testing, membership in dairy herd improvement associations, better feeding and management.

The quality of bulls selected and their condition as influenced by feeding and management were vital factors in the progress of the association.

The average annual feed cost for an association bull was $79.50 which together with labor costs of $29.00 and shed and pen depreciation of $6.00 made a total annual cost of $114.50.

Results indicate that bull pens of 1800 square feet or less were too small. Size of pens is kept down by cost of construction. The cost of materials for pens varied from $5.00 to $75.00, averaging $31.06. The cost of materials for pens and sheds combined varied from $20.00 to $130.00, averaging $93.32.

A completely satisfactory method of payment of caretaker of the bull has not yet been devised but the use of service fees is the most common. This is an important problem.

Of the 455 members, 74 percent used the association bulls exclusively during the past year, 20 percent used them only partially and 6 percent did not use them at all. Organization and management accounted for 72 percent of the reasons given for only partial use of association bulls, and 67 percent of the cases where the bulls were not used at all. The biggest single factor in the failure to use association bulls was the distance necessary to lead cows.

Caretakers represented 26 percent of the members and owned 41 percent of the cows. Of the other members, 43 percent were within a half mile of the bull, 68 percent within a mile and 32.4 percent over a mile. Only 80.5 percent as many of the cows over a mile distant were bred to association bulls as were bred within a mile.

There has been a tendency for the size of herds remaining in the associations to increase. At the time of organization, the average size of herds was 5.7 cows while now it is 8.0 cows. The proportion of herds of 10 cows or more has increased.

In the beginning 67 percent of the members lacked enough shares to represent all their cows of breeding age and now 87 percent have insufficient shares.

Town blocks have not proven successful due to small herds and lack of interest.

The average annual loss of members has been 10.6 percent. One-half of the lost members quit the dairy business or left the community. The other losses were listed as two-thirds from unavoidable causes. Over 40 percent of the avoidable causes were given as distance necessary to lead cows.

To date 20 percent of the original blocks have disbanded and of these nearly one-half have been in single member blocks.

Of the 111 original bulls 31, or 28 percent, have been lost to service in the associations to date.

Such factors as incorporation, constitution and by-laws, and selection of officers are very important in organization.

Large bull associations have been more successful than several separate associations of the same breed in a county.

Single member blocks may be organized but the chance of loss is greater than in blocks composed of several members.

Proper financing of an association in the beginning is important to its success. A sinking fund should be created to insure continuous operation.

Maintaining the interest of the members in the association is one of the most important factors of success. This can be done by tours, shows, and meetings. Annual meetings are essential in an association to keep the members advised of progress made and discuss problems of management and outline plans for the future.

CONCLUSIONS

In Idaho cooperative bull associations have provided higher quality bulls at lower cost per member and per cow than were available previous to organization. The maintenance cost has been more equitably distributed and the risk of loss of capital has been reduced.

The methods of organization and management have proven to be very important factors in the success of an association. More attention must be paid to these factors in the future if the bull association is to be made a part of a constructive dairy extension program.

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