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BULLETIN 199

MAY, 1927

MUTUAL IRRIGATION COMPANIES IN UTAH

By

WELLS A. HUTCHINS

Associate Irrigation Economist
Division of Agricultural Engineering
Bureau of Public Roads
U. S. Department of Agriculture

(Based on work done under cooperative agreement between the Division of Agricultural Engineering, Bureau of Public Roads, United States Department of Agriculture, and the Utah Agricultural Experiment Station.)

UTAH AGRICULTURAL EXPERIMENT STATION

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FOREWORD

By

ORSON W. ISRAELSEN*

The people of Utah are justly proud of the successful practice of irrigation which has grown from the humble beginning of July, 1847. Since the founding of modern irrigation in America there have been remarkable advances in irrigation practices. Methods of dam construction have been improved, canal surveys and methods of construction have been bettered, wastes in the application of water to the farms have been decreased, and crop adaptations to agriculture under irrigation carried forward. But even more important than the many improvements in diversion, conveyance, and application of water is the development of organizations to make rules and regulations concerning the operation and management of irrigation systems—organizations that provide quality of opportunity and responsibility to water users and at the same time assure economic stability and contentment to each of the many communities which are dependent on irrigation. The irrigation organization now widely known as the "mutual irrigation company" has contributed much to the attainment of these desired relations among irrigators, particularly in Utah.

This bulletin reports an authoritative and thoro investigation of the growth and activities of these mutual irrigation companies in Utah. The investigations reported herein properly include a careful examination of methods adopted in early canal surveys and construction, and a study of land and water ownership and of early irrigation organizations. The author's clear, concise, and unbiased statements of the results of these studies will doubtless be of intense interest to the older people of Utah—those who early carried on the work begun by the pioneers. To the Utah irrigators of today, Mr. Hutchins' discussion of the adaptation of the mutual company to present conditions will prove both interesting and valuable. Directors of irrigation companies and water-masters will find unusual value in becoming fully familiar with the activities of mutual companies as herein reported. To those of other western states who are struggling with organization problems in irrigation, a knowledge of Utah's experiences as made available in the following pages will doubtless prove of much benefit.

Utah's irrigation task has by no means been completed. With the fullest recognition of, and the highest regard for, her achievements thus far, it may be said with emphasis that obstacles of relatively great magnitude must be removed before the state's water resources will be fully and economically utilized. Probably the most serious of these obstacles is the existence of a large number of small irrigation companies having a common source of water-supply, resulting in lack of coordination of effort and lack of efficiency in maintenance and operation of irrigation systems and distribution of water. The application of the knowledge made available in this bulletin will contribute much toward overcoming this obstacle.

*In charge of Irrigation and Drainage

TABLE OF CONTENTS

	Page
Introduction	5
Synopsis	6
Origin	9
Early environment	9
Construction of ditches	12
Ditch and land ownership	13
Organization changes	16
Earliest forms of organization	16
Control by town councils	19
Irrigation districts	20
Unincorporated associations	23
Incorporated companies	24
Consolidation of related organizations	27
Church financial assistance	28
Utility of the mutual company	29
Management	30
Extensions and improvements	30
New development	31
The corporation law	32
Articles of incorporation	32
Officers and powers	33
Stock	33
Consolidation	33
Dissolution	33
Exemptions	33
Management	34
Character of management	34
Stockholders' meetings	35
Officers	35
Executive committee	36
Board of appraisal	37
Distribution of water	37
Control of laterals	37
Finances	38
Capital stock	38
Assessments	41
Enforcement of collections	42
Expenditures	43
Dividends	43
Indebtedness	43
Extent of development	44
The cooperative effort summarized	44
Early complete cooperation	44
Later reservations	45
Modern tendency in financing	46
Success in relation to irrigation	47
References	49

MUTUAL IRRIGATION COMPANIES IN UTAH*

WELLS A. HUTCHINS**

INTRODUCTION

Cooperation has been an important factor in the development of agriculture under irrigation in Utah. The Mormon pioneers in the Great Basin were the first Anglo-Saxons to practice irrigation on an extensive scale in the United States; hence, it is significant that from the first their irrigation work was accomplished largely as a result of community effort. Private diversions of water there were, of course, even in the earliest times, but for years they were quite out of place in an environment that took quick toll of those individualists³ who scorned the protection of numbers and refused to cooperate. The irrigation institutions developed by the Utah pioneers had in their early stages many points in common with those of the earlier Spanish settlers in the Southwest, but finally brought forth a type of mutual organization fundamentally different in its legal and economic aspects from the Spanish-American "community acequia" or canal.

Community construction and control of irrigation works in Utah have been dominant from the beginning, but the changes in organization have been marked. The mutual irrigation company, which is the agency thru which even now about three-fourths of the irrigated land in Utah receives water, developed from the cohesion of small groups of settlers who were directed and often subsidized by the Mormon Church. To appreciate this development it is necessary to comprehend something of the social, religious, and economic conditions surrounding the pioneers and the inevitable changes that followed with the building-up of the country. Cooperative construction and control of irrigation works was only one phase of a great cooperative industry, which among other things embraced herds of stock, dairies, iron works, mills, factories, stores, and banks. Many such establishments have since passed into the hands of individuals gifted with greater business acumen than the average; but it is noteworthy that the determination of the church lead-

*Approved for publication by Director, 4 April 1927

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ers to prevent the growth of water monopolies, which they realized would be injurious to the welfare of their undertaking, has borne fruit in preserving the community irrigation institutions. Commercial irrigation, that is, the sale of water for profit, with few exceptions of consequence has never been of outstanding importance in the Mormon communities.

The mutual irrigation company as it exists today may be defined as a private association of water users, either incorporated or unincorporated, the purpose of which is to obtain and to distribute water at cost to the lands of members only. The origin of such a company, of course, does not determine its eventual character. The mutual companies of Utah often passed thru various stages of public and private ownership before becoming definitely private. The distinctive features of Utah's cooperative irrigation development have been its initiation and direction by the church and its evolution into numerous private groups of quite independent character⁽¹⁾.

SYNOPSIS

This bulletin presents the results of a study of the history, operation, and utility of mutual irrigation companies in Utah, prepared under a cooperative agreement between the Division of Agricultural Engineering (Bureau of Public Roads, United States Department of Agriculture) and the Utah Agricultural Experiment Station.

The mutual company of Utah had its origin in the small community canal built by the Mormon pioneers in their typical settlements, under the leadership and guidance of the Mormon Church, and with no organization other than the ecclesiastical. As cities became incorporated they frequently assumed control over the ditches, but have generally relinquished such control. Irrigation districts, authorized by early laws of the Territory, were widely formed for construction and operation of irrigation systems, but did not accomplish a great deal of construction work. Several county governments and the church appropri-

(1) The information contained in this report was obtained from actual field studies in a number of typical Utah communities, supplemented by unpublished material in the church library at Salt Lake City made available thru the courtesy of the officials of the Church of Jesus Christ of Latter-Day Saints, by published works listed in the appended "List of References," and by schedules of irrigation enterprises secured under a cooperative arrangement between the Bureau of Public Roads (thru the irrigation subdivision then in the Office of Experiment Stations) and the Bureau of the Census in connection with the irrigation census of 1910.

ated funds to assist in irrigation development. Changes in irrigation organization have been marked, but the general tendency is toward incorporation of irrigation companies. An important recent development is the consolidation of two or more companies into a single working unit.

The mutual irrigation company has proved well suited to the management of a going enterprise, particularly where incorporated. The incorporated company enjoys important practical advantages over the unincorporated association. The mutual company is an effective agency for making extensions and improvements to an irrigation system that can be financed locally, but is less effective in financing development that is beyond the immediate means of the present or prospective water users or their local borrowing facilities. The mutual company is not suited to the development of entirely new projects in an arid country unless the settlers can themselves finance the undertaking or can secure help from some agency willing to assume the risk of loss.

Mutual companies may be organized under the general incorporation laws of Utah. Articles of incorporation should be made definite and concise and should set out clearly the powers and functions of the company, including the fact that water is to be delivered to stockholders only; but should not include matters that may be left to the by-laws.

Efficient management means a real saving to the water users, who in case of a mutual company are themselves the owners of the irrigation system, and should be insisted upon by them. Stockholders of the larger systems operating upon a cash basis are in an especially favorable position to insist upon efficiency in management. The stockholders or members meet annually to elect officers and to decide questions of general policy, and may hold special meetings whenever necessary. Active management of an incorporated company is charged to a board of directors, and in case of an unincorporated association it is controlled by a board of directors or such other agency as the members see fit to set up. Experience has shown the mistake of having a large board of directors for the average mutual company in Utah. Furthermore, under ordinary circumstances an executive committee of the board of directors is cumbersome and not to be recommended. A board of three members is large enough in most cases.

The interests of owners of an incorporated mutual irrigation company are represented by shares of capital stock, evi-

denced by certificates, entitling the holders to stated amounts of water or to proportional parts of the total water supply. One share to the acre is a frequent basis of original capitalization, altho the shares are not as a rule located upon definite tracts of land. Stock may be divided into classes to represent different kinds or degrees of rights, but the distribution of both assessments and water is simplified by having one class of stock only. There is no necessary relation between par value and market value of stock, inasmuch as the market value depends upon the demand, fluctuates more or less, and often exceeds the par value many times over. Stock attached to definite parcels of land, however, has no market value apart from the value of the land. Free transfer of mutual company stock in Utah has seldom resulted in monopoly by speculators.

The revenue of the mutual company is derived primarily from assessments upon the capital stock. The corporation law fixes the limit of a single assessment at 10 per cent of the outstanding stock, but is silent as to the number of annual assessments or as to the date of levying. Any company may thus adopt the procedure best suited to its circumstances. Assessments are made payable in cash or labor, or both. Collections of delinquent assessments are commonly enforced by incorporated companies by sale at auction of the stock involved, or by refusal of water service. Collection by suit at law is seldom undertaken by corporations because of the expense and delay. Members of an unincorporated association are liable to each other for maintenance in actions for contribution, except where their rights and obligations are otherwise determined by a valid contract.

Several of the larger Utah companies have issued bonds, but the market has been quite limited and the practice has not been general. Money has been borrowed in some cases on notes secured by mortgages on the irrigation works. Money is commonly borrowed in relatively small sums for current expenses pending collection of assessments.

Of the total irrigated area of Utah in 1919, 74 per cent was included in cooperative enterprises, indicating a relative gain over the preceding census. In the same period there was an absolute gain of 47.6 per cent in irrigated areas accredited to cooperative enterprises.

The cooperative effort in Utah, which under the guidance of the Mormon Church dominated the settlement and much of the development of the state, was eminently successful in estab-

lishing many small irrigation systems independent of each other, but fell short of accomplishing a later coordination of all related irrigation interests. The cooperative spirit is, nevertheless, still pronounced, and if properly directed should continue to contribute much to the irrigation development of Utah.

ORIGIN

Early Environment.—The first Mormon company, led by Brigham Young, entered Great Salt Lake Valley in July, 1847, and established there the nucleus of a great colonization enterprise. These people were extremely poor and had to build up their subsistence supplies from the soil of a desert into which flowed a number of mountain streams and which produced little without the application of water. Agriculture under irrigation, then, necessarily became the pioneers' first industry, without which there would have been no means of absorbing the great immigration to follow. In other words, irrigation was the material cornerstone of the undertaking.

The season was well advanced when the first company reached what is now Salt Lake City. Therefore, no time was lost in making small ditches from City Creek to moisten the ground for plowing⁽²⁾ and to irrigate the seed potatoes and corn that had been brought across the plains. Thus, was the first step taken in the irrigation development of Utah.

With the incoming of additional settlers and exhaustion of local water supplies, it became necessary to push out the frontiers of the new civilization⁽³⁾. Accordingly, colonies were established by the Mormon Church in the valleys to the north and south and exploring parties were sent far afield to look for new

(2) Bancroft, H. H., "History of Utah", p. 261, states: "The ground was so dry that they found it necessary to irrigate it before ploughing, some ploughs having been broken; and it was not until after the arrival of Brigham that planting was begun." Wilford Woodruff is quoted as follows in "Official Report of the Irrigation Congress", Salt Lake, 1891, p. 43: "We pitched our camp, put some teams onto our plows (we brought our plows with us) and undertook to plow the earth, but we found neither wood nor iron were strong enough to make furrows here in this hard soil. It was like adamant. Of course we had to turn water on it." See also Whitney, Orson F., "History of Utah", Vol. 1, pp. 331-332.

(3) Adams, Frank, "Agriculture under Irrigation in the Basin of the Virgin River", in United States Department of Agriculture, Office of Experiment Stations Bulletin 124, states: "The spirit of colonization so pronounced with the leaders of the Mormon faith, coupled with a determination to make their new empire self-supporting, led them to push their borders 300 miles to the south within ten years after they first entered Salt Lake Valley".

locations⁽⁴⁾. Sites chosen for the settlements were usually close to streams where they left the mouths of canyons. Such sites had the advantage of being on relatively high ground and of being warmer, better drained, and more healthful than the lower valley lands, as well as providing readier access to water for domestic purposes and to supplies of timber and firewood. Another point was that ample fall was usually assured for the first short ditches. The lower valley lands were frequently used as common pasture ground.

Each company sent out by the church leaders to found a colony was composed of enough families to provide protection against marauding Indians and to accomplish effectively the necessary construction work. Families already equipped for such service were often "called" to go; in other cases the lacking equipment was provided by the church. In addition to livestock, wagons and implements, the company carried seed for planting and supplies designed to provide a frugal subsistence until the first harvest. On reaching a designated site, a fort was built, fences were erected, fields laid out and planted, and ditches dug by the community, the men often working with rifles close by and with guards posted to forestall attacks by the Indians. The first habitations were shacks, or in some cases dugouts within the fort enclosure. In certain settlements houses were built later over the dugouts, which then were made to serve as cellars. Church services were held in any available place, pending the erection of a meeting house⁽⁵⁾.

A settlement once effected became an outpost from which further colonization could be extended, families sometimes being called to leave their new homes and to settle in other places. Each original settlement, furthermore, was simply the nucleus from which a large self-supporting community was to grow, the population being augmented from time to time by groups of new arrivals as well as by births in the community. Newcomers were provided for until they in turn could become self-

(4) "Autobiography of Parley P. Pratt", p. 409, referring to an expedition in the winter of 1849-50: "We explored the best portions of the country south from Great Salt Lake City to the mouth of Santa Clara, on the Rio Virgin, which is a principal branch of the Rio Colorado". See also Young, Levi Edgar, "The Founding of Utah", pp. 167-175.

(5) Manuscript histories of Bear River City, Boxelder Stake, Hyrum Ward, Cache Stake, and Richfield Ward, Sevier Stake, in Church Historian's Office, Salt Lake City; Coman, Katharine, "Economic Beginnings of the Far West", Vol. II, p. 187; Burton, Richard F., "The City of the Saints", p. 353.

sustaining. The settlers did not live on the farms, but in the towns, both for common protection and for organization⁽⁶⁾.

The material as well as the religious welfare of the colonists was altogether sponsored by the Mormon Church. The early temporal influence of the church was a logical result of circumstances. The new country was not only a desert, effectively cut off from the previously settled portions of the United States, but contained many Indians who became openly hostile at the invasion of their domain. Scant supplies and the ever-present danger of starvation made it essential that all members of the community work together without stint under their local leaders, sacrificing for the time-being all that of individual gain. These compelling forces, coupled with the religious zeal of the colonists and the absence at first of civil government, made the ecclesiastical organization all-powerful. The church was the only authority, and at no time was this authority relaxed⁽⁷⁾. The colonies from the first were organized under the leadership of vigorous men who usually became the presiding church elders (bishops) in their respective settlements. Communities, therefore, were literally born and bred under ecclesiastical organization and law which proved quite effective while the people were of one faith. The civil government that followed was usually controlled by the dominant Mormon population and carried forward policies already well-developed⁽⁸⁾.

⁽⁶⁾Nelson, Lowry, "A Social Survey of Escalante, Utah", Brigham Young University Studies No. 1, p. 3, states: "The 'Mormon' village was definitely planned and established before the farm land was developed. That is to say, the first settlers, laid out the village site, and apportioned the lots, as their first act. They then surveyed the fields and apportioned them". Joseph A. Geddes, "The United Order among the Mormons", p. 93, states: "This plan of building cities, i. e., living in an organized town and farming the surrounding country with the town as a base, has been followed almost entirely by the Mormon people in their long history of successful colonization in the Western states. The method has made possible organized action as opposed to individual effort. The significance of this fact can hardly be over-estimated".

⁽⁷⁾Geddes, Joseph A., *supra*, p. 94, states: "Religion was the basis of organization, but, by this time, (1850 to 1870) the Mormon Church was well organized, and its machinery proved an effective means of using human energies of all kinds. Canals, roads, and railways were built. Sluggards found little room and scant solace in the ranks of these hardy men who were redeeming the desert with toil. Behind every movement which made for the growth of the country, the church buttressed itself solidly".

⁽⁸⁾The organization and development of Mormon colonies is discussed by Charles H. Brough, "Irrigation in Utah", pp. 14-34; Thomas, George, "The Development of Institutions under Irrigation", pp. 17-20, 27; Nelson, Lowry, *supra*, pp. 3-10; Young, Levi Edgar, *supra*, pp. 176-191; Tullidge's "Quarterly Magazine", Vol. 3, p. 233; manuscript histories of Logan Ward, Cache Stake, and Provo in Church Historian's Office.

Construction of Ditches.—It is apparent from the foregoing discussion that construction of a ditch was one of the first tasks in a new settlement. Whether the ditch was made immediately or delayed several months depended largely upon the time of arrival of the settlers. If they came in the spring, immediate attention was given to the ditch in order to make it possible to irrigate that season's crop, the settlers living for the time being in tents and wagon-boxes. If they arrived in late summer or fall, construction of the camp and fencing may have come first. In any event, the ditch was never delayed unnecessarily, and questions of water-rights and proportionate ownership were not debated. The need of immediate crop returns was too urgent.

Ditches were laid out under the direction of the community leader or someone appointed by him. Surveying instruments of precision were rare. With the adequate grade afforded in so many localities, however, effective leveling was done with such ready-made devices as a tin pipe or rubber hose two or three feet long, sealed to a bottle at each end and mounted on a swivel joint, water or tea being poured in and allowed to find its level in the two bottles; or a broad milk pan brimful of water for sighting across; or a straight-edged piece of wood with a groove cut in one surface and filled with water; or in some cases with a carpenter's level. Some canal lines were laid out solely by the eye and by carrying the water along to make sure of the grade. Workers at some settlements started in the morning by plowing a furrow to the diversion point, worked there during the day, and plowed another furrow on the way back to camp in the evening. Sometimes dirt was removed by drawing a board after the plow. In other cases all digging was done with picks and spades. There were not many spades or shovels in the early days. One exacting water-master tested the dimensions of his ditch by driving a wagon of the required width from one end to the other.

In some of the first settlements each able-bodied man worked on the ditch wherever directed, with no account kept of his time. On other occasions, particularly in the later settlements, all were given an opportunity to work equal lengths of time or to excavate equivalent sections of the ditch. Still later, particularly after land titles had become established, it was customary for each landowner to work on a new ditch in proportion to the area of land for which he wished to acquire water-rights, receiving certificates of credit as the work progressed. Whatever may have been the original plan, the

labor of the pioneers was the basis upon which they acquired ditch rights and the possession of land⁽⁹⁾.

The natural tendency was to develop first the lands most easily reached by the first short ditches and then to enlarge and extend the ditches to include more land. After all farm land under a ditch had been taken and further extension and enlargement of the ditch had become impracticable, the next step frequently taken by newcomers was to build a higher ditch to water the bench lands above. This process in course of time tended to raise the water-table of the lands originally farmed and often to render them unfit for cultivation.

The result of irrigation construction of this type was a multiplicity of small ditches having no dependence upon each other, in some cases for considerable distances often parallel and quite close to each other. A farmer might have land under several neighboring ditches and thus belong to the same number of separate organizations. Probably no other type of development could have conquered the wilderness, and certainly no other arrangement would have provided the nuclei of settlements on such a far-flung scale in the same length of time. But the weakness of the system developed with the refusal of the earliest settlers to coordinate their efforts with those of later comers even after they had become well able to do so, with much resulting duplication of effort and uneconomic use of water⁽¹⁰⁾.

Ditch and Land Ownership.—The pioneers were squatters. The land they settled upon was acquired by the United States from Mexico in 1848 by the Treaty of Guadalupe Hidalgo and included in part certain large and to some degree indefinite land grants. Spanish and Mexican titles, however, had little or nothing to do with the ultimate determination of land titles. The Mormon Church thru its president, Brigham Young, took

(9) Shoemaker, Joel, "Co-operative Irrigation", in "Report of the Utah Irrigation Commission to the Third National Irrigation Congress", pp. 73-77; Smythe, William E., "The Conquest of Arid America", pp. 57-59.

(10) Much information regarding the construction of early ditches was secured by the author from pioneers and the sons of pioneers in a number of Utah communities. Further data were secured from schedules taken in the irrigation census of 1910, and from various ward histories in manuscript in the Church Historian's Office, including Moroni and Mount Pleasant Wards, San Pete Stake; Pleasant Grove and Payson Wards, Utah Stake; Bear River City, Boxelder Stake; Hyde Park, Paradise, and Hyrum Wards, Cache Stake; Richfield Ward, Sevier Stake; and Cedar City Ward, Parowan Stake. The subject is also discussed by Charles H. Brough, *supra*, pp. 9-12, and by George Thomas, *supra*, pp. 17-28. Further details are found in Edward W. Tullidge's "Histories of Utah", Vol. II.

possession of the country, laid out townsites and farm sites, and allotted parcels to members of the church. In some cases city lots and farms were distributed by lot; in others, they were handed out definitely to certain individuals. The ownerships thus sanctioned by the church were thoroly respected by the members. Later, the Territorial legislature assumed jurisdiction over land titles, and finally, as shown below, it became possible to enter land under the Federal Homestead Act and Pre-emption Act and thus to secure undisputed claim to its ownership.

Small holdings were the uniform rule in the Mormon communities for several reasons, important among which were the following: To discourage speculation in land and its attendant evils⁽¹¹⁾; to conform to the requirements of irrigation farming, which is intensive and, therefore, limited to relatively small holdings; to permit of quickly constructed ditches diverting at the most favorable points, thus limiting the outside extent of the community; to insure common protection, with closely grouped dwellings and small-farmed areas where the workers could remain close to each other and could gather quickly in case of attack⁽¹²⁾.

Towns and fields were surveyed and platted according to a more or less uniform plan. Disposal of the various tracts in the early days was frequently subsequent to the construction of the ditch and to a large extent dependent upon it; in other cases the land allotment preceded the ditch work. In a typical community in the upper Sevier Valley, for example, each man was given an opportunity to complete a section of the canal 10 rods in length, in return for which he received the following: 1 town lot; 2½ acres of meadow ground; 1 share in the "calf pasture"; 5 acres of land close to the settlement; and 10 acres of land lying farther out. The parcels were drawn by lot, No. 1 being entitled to first choice, No. 2 second choice, and so on down. Later comers in many communities were assigned their respective tracts by the bishop (head of the local church organization) in proportion to their needs, in return for which they were expected to enlarge the canal if necessary or to work out their community interest in some other way. Local youths approach-

(11) Smythe, William E., *supra*, pp. 57-59; Young, Levi Edgar, *supra*, pp. 210-211.

(12) Nelson, Lowry, *supra*, p. 4; Kinney, Clesson S., "A Treatise on the Law of Irrigation and Water Rights", Vol. I, pp. 405-406.

ing maturity were granted land in the same way. The farmers thus built canals in payment for their farm land, and those of other callings acquired city property by building roads and fences or by working for it in other ways. There was at first practically no money in circulation and labor was the principal commodity. Ownership of ditches and possession of farm land were thus closely associated from the beginning, altho as a general rule the water was considered to be readily transferable from one piece of land to another. That no monopoly in either land or water developed in the early days was due to the fact that the church leaders were constantly on guard against it⁽¹³⁾.

Each settler's claim was noted on paper and the claims were bound together and made a part of the church records. The records were sometimes tied together with homespun thread. Land certificates were issued by county surveyors and approved by selectmen after the establishment of county governments. The land titles thus sanctioned by the church in the first instance became records of the State of Deseret, the Territory of Utah, and finally of the United States.

When Congressional legislation threw open the country years after the settlement of much of Utah, a situation arose that would have caused indescribable confusion and injustice had it not been for the strict discipline of the church and the loyal adherence of the members. Individual holdings had been kept purposely small—much smaller than the minimum requirements for entry under the Federal land acts. Consequently, within many units of Government land there were a number of different claimants who had been living many years on the land. The custom then was to select some responsible and trustworthy man living in a Government unit to enter the entire subdivision and after securing title to deed the separate parcels to the occupants, all sharing proportionately in the expense. The man to make the entry was selected by the persons directly interested or by the community. It was taken for granted that there would be full compliance with the rules under which the selection was made, and cases of bad faith, while they existed, are stated to have been extremely rare. Most of the disputes related principally to small portions of boundaries and to the possession of odd pieces of small area that were advantageous to the owner of an adjoining tract. The communities were too closely united in their religious faith and in the loyalty of members to their

(13) Brough, Charles H., *supra*, pp. 12-13, 23-24.

fellow-members to allow the perpetration of many cases of flagrant dishonesty⁽¹⁴⁾.

ORGANIZATION CHANGES

The earliest cooperative irrigation in Utah was part of an organized effort that extended to all branches of the community life and claimed no separate organization of its own. The church leaders directed the irrigation activities, as they directed all other forms of industry. Many of the leading pioneers, however, were from New England⁽¹⁵⁾ and were accustomed to surveys, deeds, and records, so that sooner or later in all the settlements there appeared a cleavage between religious and secular organizations in the handling of water. The bishop might still be the head of the irrigation organization, but not necessarily because of his church position. The development of separate organizations really preceded the coming of persons not of the Mormon faith. With the coming of such people, however, and as a result of other changes noted later, came the necessity for irrigation organizations of unquestioned legal standing and authority⁽¹⁶⁾.

Earliest Forms of Organization.—The first organizations for controlling the construction and management of community irrigation works were suited to the environment and were, therefore, quite informal as viewed from present-day standards. To some extent the practices varied in different localities, depending largely upon the time of settlement. However, the first

(14) The land question is discussed by George Q. Cannon, "The Mormon Land System in Utah", pp. 31-36, Wilford Woodruff, "My Twenty-Acre Farm", pp. 65-68, and Joel Shoemaker, "Co-operative Irrigation", pp. 73-77, all in "Report of the Utah Irrigation Commission to the Third National Irrigation Congress"; Brough, Charles H., *supra*, pp. 12-27; Thomas, George, *supra*, pp. 29-41; Coman, Katharine, *supra*, Vol. II, p. 177; Burton, Richard F., *supra*, p. 352. Manuscript histories of wards and stakes in the Church Historian's Office contain many interesting details.

(15) Woodruff, Wilford, "Official Report of the Irrigation Congress", Salt Lake, 1891, p. 43, speaking of the first company to reach the valley, states: "Of course all this company—nearly the whole of us were born and raised in the New England States, Vermont, Maine, Massachusetts, Connecticut. Of course we had no experience in irrigation". Burton, Richard F., *supra*, pp. 358-359, discusses the origin of early Utah residents.

(16) Teele, R. P., "General Discussion of Irrigation in Utah", in United States Department of Agriculture, Office of Experiment Stations Bulletin 124, pp. 19-22, 26. Judge Kinney, *supra*, Vol. IV, p. 3590, states: "Prior to the year 1900, with few exceptions, the canals and systems of ditches had been built by farmers and were controlled by them in every minute detail. The majority of the water disputes between the Mormons were settled in an arbitrary manner by the bishops' courts".

irrigation works built in new settlements in the earliest times were usually controlled by the bishop, under whose direction, or under that of a superintendent or water-master appointed by him, the ditch was dug and maintained and water was distributed to the various users. With more complete organization of secular activities, the water users, thru committees appointed by themselves or thru their local governmental officials, came to assume control over irrigation affairs. Where the bishop was of particularly forceful character, as the leaders of the early colonies usually were, his control over irrigation matters was apt to be more protracted⁽¹⁷⁾.

Too much emphasis cannot be laid upon the close association existing between the pioneer town, the farming community, and the irrigation system, similar in many respects to that found in connection with the Spanish-American community acequias in New Mexico. The people lived in the town, often within a fort, for common protection, and worked the surrounding lands watered by a ditch built by the townsmen-farmers. The community was isolated from other settlements and was necessarily self-contained. The townsmen, being themselves the water users, were vitally interested in the canal management. It was, therefore, natural that the local self-government should control the ditch as well as other municipal interests. Municipal control of irrigation ditches, as will appear later, is still found in some Utah communities.

In many of the outlying settlements the first step in taking control of the ditch from the bishop was to handle irrigation questions at mass meetings. Diverse community matters were often settled at the same meeting, it being customary in many communities prior to the establishment of civil government to appoint teachers, water-masters, and clerks at mass meetings⁽¹⁸⁾. An interesting phase of this development is found in the organization of the "School of the Prophets" at Cedar City about seven years after the first settlement there, and several years after the municipality had been established. This body was composed of all heads of families and was presided over by the bishop at regular weekly meetings at which there were debated and decided such matters of community concern as appointment of water-masters, nomination of school trustees, opening of roads, repair of fences, changing the course of ditches, chastisement of erring members, guarding of stock herds, directorship

(17) Thomas, George, *supra*, pp. 19-20.

(18) This fact appears frequently in the local histories of wards in the Church Historian's Office.

of the cooperative store, personnel of entrants under the Federal land laws, and other public questions⁽¹⁹⁾.

With the organization of counties and granting of city charters the next step often was to place control of the ditches under the county or town officials. The councils of many towns administered the affairs of the ditches not only within the corporate limits of the towns but thruout their courses, appointing water-masters and regulating delivery schedules. The county officials were active in granting water-rights and settling controversies over the use of water from streams, but seldom undertook to regulate the internal affairs of the embryo ditch companies. Recorded cases of the appointment by the county court of a water-master to supervise the construction of a new ditch grew out of the general irrigation powers exercised by the court. The county courts had jurisdiction over the organization of irrigation districts. Several counties appropriated or lent money to aid in the construction of ditches⁽²⁰⁾.

Gradually the interests of town and country became increasingly divergent. New ditches were built, and controversies arose between the various groups of water users, for with greater protection to life and property the original spirit of self-effacement underwent a marked change. The towns and cities grew and came to include among their inhabitants many who were not farmers and who had little interest in or even sympathy with farming operations. Hence, for most of the ditches separate organizations were eventually developed to include only the water users directly interested. An owner of 10 acres of irrigated land was considered to hold "10 acres of water-right" in the ditch; and when all land under the ditch had been taken he was considered to own a share in the ditch proportioned to the total area. With the introduction of deeds and records and greater formality in the administration of irrigation affairs, and particularly with the adjudication of water-rights and issuance of water-right certificates by the county selectmen, these ditch ownerships became crystallized into actual shares in the ditch, sometimes evidenced by certificates.

Under these several forms of control the water users cleaned and otherwise maintained their ditches in proportion to their irrigable land holdings, which in many communities were uniform in size at first but, of course, became unequal in course of

(19) Original minutes of early town meetings, in private possession, Cedar City.

(20) Teele, R. P., *supra*, pp. 22-23, 31, 42, 48-57; Thomas, George, *supra*, pp. 57-91; 138-151.

time, and later they labored in proportion to shares of ditch stock. The early settlers devoted their own labor to this work. Even after conditions had changed and hiring labor had become more or less common, the water users were still urged in most cases to work out their assessments.

Control by Town Councils.—The control of irrigation ditches by municipal councils forms an interesting chapter in the history of irrigation in Utah⁽²¹⁾. Owing to the united interests of town and country in the early days, this control was a logical step after the towns were incorporated. The councils passed ordinances governing the affairs of the ditches, appointed water-masters to distribute the water and superintend the annual maintenance work, and in some cases exercised active management thru the medium of committees.

In most of the larger places municipal and rural interests have become more or less separated and control of the irrigation systems has passed to the farmers organized into companies. There are, however, about a dozen cities still actively engaged in the distribution of water to lands within and in some cases without the city limits, which are often quite extensive. Of these the largest is Provo, where the city commission has jurisdiction and one of the three commissioners has among other duties active management of irrigation affairs. In Brigham City the city manager performs these duties, while in Springville, Spanish Fork, and other places the city council thru an irrigation committee has charge. Assessments upon all tracts and lots entitled to water are levied annually to cover the irrigation expenses and are collected and made available for expenditure thru the usual channels of city government. Business property is relieved from assessment upon voluntary relinquishment of water-rights.

City administration of irrigation affairs is satisfactory to both the city and the farmers under some circumstances only. The management is apt to be more satisfactory when under the control of one man, such as the city manager or a commissioner or councilman devoting all his time to city work than when the entire council takes the responsibility, and in several such cases the water users at present have apparently no inclination to seek a change. A council dominated by business or professional men is necessarily less sympathetic towards irrigation needs than

(21) In "The Development of Institutions under Irrigation", *supra*, pp. 92-116, Dr. Thomas discusses this feature at some length.

one composed principally of farmers and is consequently less acceptable to the farming element. Objections on this ground from the farmers, and the desire of the city councils to be relieved from the troublesome details of irrigation management, which are foreign in many respects to municipal interests, have resulted in the giving up of city control in several cases in recent years. City control, therefore, while a logical step in the development of irrigation organizations, has largely served its purpose and is being outgrown in the course of the changing relations between city and country.

Irrigation Districts.—The most formal organization for irrigation development in the early days was the irrigation district, first authorized by the Territorial legislature January 20, 1865. The law was amended and re-enacted from time to time and was finally repealed, without prejudice to existing districts, by the Revised Statutes which went into effect January 1, 1898.

The districts were involuntary public corporations. They resembled in many respects the irrigation districts of the present time created under State laws for which the Wright Act of California served as the model, but with the important differences that under the early Utah laws assessments were not and could not be made liens upon the land, inasmuch as land titles had not then been established⁽²²⁾ and that bond issues were not provided for. Even after the establishment of titles to land the situation remained the same, for a later amendment to the law⁽²³⁾ provided that no district tax should become a lien on the land, but should constitute a permanent lien on the interest of the taxpayer in the canal and his right to the use of water. The importance of these differences appears in the fact that the usual motive for organizing modern districts in Utah, as well as in other Western States, has been the issuance of bonds payable from the proceeds of assessments which when levied become liens on the land. The modern irrigation district, unlike the older type, is not a phase in the development of the mutual company in Utah, but occupies a different field.

The old districts were organized by the county courts to include land lying within designated boundaries after the citizens had petitioned for the formation of the district. Management was in the hands of elected trustees, and the tax levy was made subject to the approval of the electors.

(22) Thomas, George. *supra*, p. 120.

(23) Laws of Utah, 1882, Ch. XLVI.

Districts were organized on an extensive scale between 1865 and 1880 and to some extent thereafter⁽²⁴⁾. The time had come in many sections when legal standing, protection, and authority were desirable, and the irrigation district offered a definite form of irrigation organization. The reason for forming some of the districts was the feeling that by so doing the water-rights might become more firmly attached to the land, and in other cases the need of a method of compelling delinquent water users to share in the canal maintenance. Districts were organized in some sections for the original construction of irrigation works.

A curious feature of early irrigation district operation was the extension of control to the unallotted land as well as the water. The district law provided that the trustees might appraise any lands to be benefited which were "not legally claimed" and might sell the "possession" of such lands as opportunity afforded. At a public meeting held at Richfield, the unoccupied land and lots were placed in the hands of the district for disposal⁽²⁵⁾. The records of Provo Bench Irrigation District indicate that the district exercised the authority of parceling out land not theretofore taken up, issuing title to individuals who paid the district tax, and selling to the district any land already taken up on which the tax was not paid. Confusion apparently existed at that time as to the existence of a tax lien on the land, but as stated above this was later cleared up by statutory enactment. Early district taxes were paid in labor or materials furnished. Debts due to members from the district were apt to be paid in land or applied on district taxes. In some cases work was let out on contract and land given in payment for the work done⁽²⁶⁾. Owners of land which proved unfit for cultivation were allowed to petition the district for exchange for more suitable land.

Many of these irrigation districts were organized after the beginning or completion of construction of canals and thus for a few years served primarily as a means of management. On

(24) Brough, Charles H., in "Irrigation in Utah", (1898), p. 40, states: "There are today forty-one irrigation districts in Utah, located principally in the northern counties of Cache, Salt Lake, Utah and Weber, representing an area of about 70,000 acres". Referring to the total number created, Dr. Thomas, *supra*, p. 122, states that "it would be a conservative estimate to place the number of such organizations in the territory at about a hundred."

(25) Manuscript history of Richfield Ward, Sevier Stake, in Church Historian's Office.

(26) Original minutes of Provo Bench Irrigation District, in possession of Provo Bench Canal and Irrigation Company.

the whole, the districts did not accomplish a great deal in the way of actual construction. Some of the districts included several canal systems within their boundaries. Such attempts at consolidation of related interests did not achieve signal success, however, for the districts on dissolving usually disintegrated into their original component parts.

Most of the early districts were dissolved after a few years' operation. One of the principal reasons for dissolution was the objection of the older irrigators to being taxed to help maintain the newer canals or newer portions of original canals, for by this time the spirit of whole-souled cooperation was distinctly on the wane. In the case of *Harris v. Tarbet et al.*⁽²⁷⁾, it was held that all owners of property within the district were subject to the payment of an equal rate of taxation, and that the trustees had no authority to confine their management to parts of the district only. However, many years before this case came to trial, the inadequacy of the water-supply for all lands of a district was causing trouble and was leading to abandonment of the district form in order that the water might be divided into "shares" and a few shares be used on any part of a man's land without requiring him to pay taxes on his entire holding. Other district failures may be traced to inefficient management—specifically, to the inability of officers to make the district machinery effective in collecting taxes for running expenses, in spite of the lien granted by law against the interest of the taxpayer in the irrigation works and water-rights and the statutory procedure for selling such interest in case of delinquency. The remedy of shutting off water for non-payment of taxes was sometimes attempted, but in certain cases was postponed until so long after levying the tax that one or two irrigations had then been received by the delinquents and some of them paid no taxes at all. A further fact that appears in connection with certain of the districts, and which provided a strong inducement toward disorganizing, was the looseness with which records were often kept and correct procedure adhered to, with resulting uncertainty as to the legality of the district organization. During the past 15 or 20 years several of the changes have been due to a feeling that the old district type has outlived its usefulness and should give way to a more businesslike organization under which the handling of such matters as temporary loans for current expenses could be facilitated.

(27) 19 Utah 328, 57 Pac. 33, decided April 28, 1899.

All of the old districts have not yet been dissolved, but very few are left. Upon being dissolved a district was almost invariably succeeded sooner or later by one or more incorporated mutual companies. The "acres of water-right" in the district then became shares of stock in the new company or companies, the "certificates of water-right" issued by the district for the use of water for stated numbers of acres of land being the basis for the issuance of stock certificates for the same number or a proportionate number of shares in the new company⁽²⁸⁾.

Unincorporated Associations.—Many irrigation enterprises in Utah were never governed by town councils nor included in irrigation districts. However, a large number—probably the great majority—existed at one time or another as unincorporated associations of water users. Many irrigation districts were immediately preceded or succeeded, or both, by such associations. A number of enterprises, particularly of those originating after the peak of the great colonization era, started activities either as partnerships or as more or less formal associations, and many of these have never incorporated.

The unincorporated association is governed by the contractual relations of the members and the laws of co-tenancy or co-partnership, as the case may be. It is advisable that there be specific articles of agreement, signed by the original members, setting forth the purposes and powers of the association and the rights and liabilities of the members. Interests of individual owners are frequently divided into shares in the association on the basis of adjudicated water-rights, or according to areas of land for which the original appropriations were made, and may or may not be evidenced by transferable certificates. The members of the association meet when necessary to transact business and to decide questions of operation and maintenance, often appointing a water-master who may or may not receive compensation for his services. The larger and more formal companies sometimes elect other officers, such as president, vice-president, and secretary-treasurer. Each member does his proportion of the ditch work or hires it done. Assessments to raise money to pay the water-master's salary and to buy ma-

(28) The early irrigation districts are discussed by Thomas, George, *supra*, pp. 117-126; Teele, R. P., *supra*, p. 31, and "Irrigation from Jordan River", in the same publication, pp. 41-42; Adams, Frank, *supra*, pp. 236-238. The case of Harris v. Tarbet *et al.* is further discussed by Swendsen, George L., "Appropriation of Water from Logan River", in the same publication (Bulletin 124), pp. 311-314. Information relating to specific districts was obtained by the author from the county records at Logan and Richfield, from records of mutual companies which succeeded irrigation districts, and from 1910 census schedules.

terials are levied upon the members in proportion to their interests.

Such organizations are often found to give satisfaction so long as the members work together harmoniously and conscientiously—a condition more likely to be confined to the smaller groups of users. In such a situation the simplicity of the arrangement is a desirable feature. The weakness of the organization develops upon the refusal of one or more members to assume their fair share of the maintenance burden or to participate in the cost of needed improvements; for while all members are required by law to contribute to the operation and maintenance expenses, enforcement of collections from stubborn members is a troublesome proceeding, and attempts to force them to pay for improvements to which they object may be difficult and under many circumstances illegal. In other words, the direct remedies open to a corporation in such cases are not available to the ordinary unincorporated company.

Incorporated Companies.—The incorporated company, in which the stock is held by the water users, is the most prominent type of irrigation organization in Utah⁽²⁹⁾. While not so simple in form as the unincorporated association, there is yet nothing cumbersome about such an organization. On the contrary, it has proved well-adapted to the management of the Utah canal systems and to such modest construction work as the communities have been called upon to handle without heavy financing.

The Territorial legislature during the 50's and 60's created several canal companies by special acts of incorporation, most of the companies failing to accomplish much⁽³⁰⁾. Between 1865 and 1880 most of the organizing that took place was under the irrigation district act, which had been designated as "an act to incorporate irrigation companies". Prior to 1880 a few companies were incorporated under the general incorporation act of 1870, but it was not until the water law of 1880 called attention to the fact that companies might incorporate for irrigation purposes that the organization of such corporations really began. In the 80's and 90's many of the canals that had been controlled by informal associations and irrigation districts passed to the corporation plan, and the trend has continued to the present time. The incorporated mutual companies of today may have passed thru part or all of the stages of organization heretofore

(29) Teele, R. P., *supra*, pp. 31, 69-71; Thomas, George, *supra*, p. 52.

(30) Thomas, George, *supra*, p. 52.

described, or may have been formed in advance of construction of works. Those that have passed thru other forms are far more numerous than the last-named class.

The progression of irrigation companies from the informal to the organized phase is a reflection of the changes in social and economic conditions in Utah from the self-contained environment in which the pioneers lived. As stated heretofore, when the Mormons entered Utah they occupied a land where the church was the only authority and they consequently obeyed the church's instructions and abided by its decisions. If the bishop ordered a ditch cleaned, or a gate built, or a bridge repaired, while these functions were under his control, his orders were usually carried out without question, and those who refused to do their share of the work were likely to find their position in the community unpleasant. Controversies between members were settled by church trials in an endeavor to do even-handed justice to all contending parties. Even after the practical administration of the irrigation ditches had passed to secular organizations or groups the bishop still stood ready to order delinquent water users to assume their responsibilities⁽³¹⁾.

Ecclesiastical control over irrigation matters was effective only while the church was the sole authority and the people were of one faith. When non-Mormons came into the community in sufficient numbers to make their influence felt they refused to abide by the church's decisions. Likewise, there were influential men who would not follow the church in all its mandates relating to secular matters, even though they were themselves members of the church, and who held out successfully. So, in the course of time, it was found that some people refused to pay their assessments promptly, if at all, and it became necessary to formulate plans for enforcing collections and thus relieving the burden on the conscientious ones. The irrigation district plan did not prove altogether successful in this regard, and with the dissolution of a district the necessity for having a strong organization of some sort was even more urgent than before.

The growing independence of individual members of irrigation communities led to various reasons for the desirability of incorporating. One of the most impelling reasons was the need for a quick, simple method of enforcing collection of assessments. The sale of capital stock on which the assessment was delinquent provided such a remedy. In other communities the

(31) Thomas, George, *supra*, pp. 17-18; Teele, R. P., *supra*, p. 22; Kinney, Clesson S., *supra*, Vol. IV, p. 3590; Geddes, Joseph A., *supra*, p. 94.

desire for a more businesslike administration, and the chafing at having a few members refuse to share in the cost of needed improvements, led to the change. Another important factor in many cases was the increase in the demand for water and the growing necessity of protecting existing rights, which had not been a pressing matter while water was ample and easy-going methods were permissible. The incorporation of entire streams, which has been common on the smaller streams in several counties, is a phase of this situation, the stream itself often being considered the main ditch and the diverting canals the laterals, the jurisdiction of the company extending in many cases only to the stream. The wish to borrow money for new improvements has not been an important consideration in effecting the incorporation of old associations in Utah.

The length of time during which a community may have existed as an unincorporated mutual association has varied from a few years to a half-century or more, depending upon the state of harmony in ditch operation and upon outside influences. Water users who have been specially favored regarding location on the ditch and who from one cause or another have enjoyed relatively lower assessments than other members have been known to block all attempts at incorporation. On the other hand, some communities have incorporated in spite of the resistance of a few members, leaving the hold-outs to come in whenever they should find it advantageous to do so and in the meantime recognizing their right to receive water.

Companies which passed thru various forms of organization before becoming incorporated accomplished their original construction work and their extensions and improvements primarily by the labor of the water users, such work being usually of a type that called for a minimum cash outlay. Where the construction work was beyond the means of the individual members, assistance was frequently granted by the church and in a few cases by the counties⁽³²⁾.

Mutual companies which incorporated before undertaking construction work have been of two general classes: (1) Those in which the landowners worked out their stock subscriptions, and (2) those in which construction was accomplished by securing financial aid in the open market. The typical procedure in the first case was to subscribe for stock in the newly created irrigation company in proportion to the acreage each landowner

(32) See chapter on Church Financial Assistance. See also, in this connection, Thomas, George, *supra*, pp. 78-82; Teele, R. P., *supra*, p. 42; Adams, Frank, *supra*, p. 221.

expected to irrigate, to pay a small percentage of the subscription in cash or in building materials, and to work out the balance under the direction of a superintendent or water-master appointed by the directors. Instances of the second class have been quite rare. In one case an eastern bond house took individual mortgages on the land and issued bonds against them; in another, stock subscriptions were financed thru the sale of guaranteed mortgages to outside capitalists; while in a few cases bonds were issued by the companies to pay for larger construction than the settlers were able to handle⁽³³⁾.

Consolidation of Related Organizations.—A logical development of mutual irrigation organizations in Utah is the consolidation of related independent interests into one comprehensive organization. The incorporation of all ditches diverting from a stream is a phase of this movement and is undoubtedly a step forward. However, such instances in the main have been limited to the smaller streams and have usually included private and partnership ditches banded together for protection of their several interests rather than for greater economy in operation.

As a result of the construction of numerous ditches in relatively small areas, which as stated heretofore was common practice with the pioneers, there is a real economic need for the getting together of many of these groups in order to avoid the waste of water and duplication of effort necessarily involved. Opportunity exists in many sections of Utah for the merging of two or more companies into one. The initiative towards such pooling of interests has seldom come from the interested parties. In fact, these interested parties usually offer strenuous opposition to such a program on the assumption that their established rights may in some way become compromised. Some comprehensive consolidations of this character, but not many, have come about solely thru local effort.

In an effort to lessen the economic waste involved, and with the hope of setting a wholesome example, the Division of Agricultural Engineering of the Bureau of Public Roads and the Utah Agricultural Experiment Station have cooperated in recent years in bringing together the opposing interests in several communities, with slow but altogether encouraging results. This study began with a complicated water utilization problem in Beaver Valley, where water users of the 10 independent canal systems in question chose a committee to work with the Federal and

(33) Much specific information on the histories and present status of mutual irrigation companies in Utah was obtained thru actual field studies, as well as from the separate schedules taken in the census of 1910.

state representatives in preparing a complete plan of consolidation. Unfortunately, a law-suit initiated by certain interests on the river drew the entire stream into court and has thus far prevented the plan from being carried out. The effort at Daniel in bringing together 4 canal systems into a consolidated mutual company was successful, the oldest company being given a valuation rating of 100 per cent and the others being rated in proportion to that oldest system in determining the respective claims of individuals to stock in the new company. At Cedar City a program of consolidation of diversified irrigation enterprises has been successfully carried out, and definite accomplishments have been effected elsewhere⁽³⁴⁾.

The disinterested position of the Federal and state agencies has been of marked benefit in this connection. In general, the plans for consolidation include the dissolving of existing companies and the formation of a single corporation in which shares of stock are issued in proportion to the respective rights of all concerned. Once effected, such consolidation paves the way for the utilization of existing ditches to the best advantage of the community and with decreased costs of maintenance; for a more orderly and economic distribution and more complete use of water, involving the transfer of surplus water from low lands to bench line canals or the use of early high water thruout the system; for the incumbency of one set of officers instead of many; and for the greater buying power of the larger company in employing engineering talent and in the purchase of materials—not to speak of the social benefits arising from a united community in place of a number of conflicting interests.

CHURCH FINANCIAL ASSISTANCE

The development of cooperative irrigation enterprises in Utah has been furthered to a degree which cannot be reduced to exact figures, but which has been very great, by material and financial help from the Mormon Church. In the early days many settlements were assisted by the church in their several needs, including irrigation, the contributions consisting largely of seed, provisions, clothing, and implements. Had it not been for

⁽³⁴⁾ Winsor, L. M., Associate Irrigation Engineer, who has had much to do with this work, discusses the problem at considerable length in a report (not yet published) entitled "The Effect of Consolidation of Related Irrigation Enterprises on the Economic Utilization of Land and Water Resources".

such help, many of these settlements could not have survived⁽³⁵⁾.

Later the church assisted and still continues to assist various communities and irrigation companies in financing development too difficult of accomplishment without outside help. In some cases the church subscribed for canal company stock which was eventually re-sold or expected to be re-sold to the settlers. In other instances loans were made. In still other cases the assistance took the form of outright contributions. A partial list of such cases of assistance from 1902 to 1925, provided by the church authorities, shows 21 companies or communities in Utah, Nevada, Wyoming, Arizona, and Colorado that were financially helped by the church, in various amounts estimated to aggregate about \$300,000.

In addition to this, the church has stood behind its banking house (Zion's Savings Bank & Trust Company) in financing some of the larger irrigation companies thru the purchase of bonds or notes.

UTILITY OF THE MUTUAL COMPANY

In drawing conclusions as to the usefulness of the mutual company for irrigation purposes, it must be borne in mind that this type of enterprise, whether incorporated or not, is essentially private and voluntary and that its inception is dependent upon the consent of all who are to become members. The mutual company is, therefore, not an effective means of coercing a group of dry-farmers opposed to irrigation development, as is an irrigation district. It is possible to form a mutual company to include only part of the water users supplied from a common source, and this is frequently done; but in such case the rights of the others must be respected⁽³⁶⁾, and they cannot be required to join the company against their will. Within an incorporated company, however, the majority stockholders are in more

⁽³⁵⁾Thomas, George, *supra*, pp. 78-82; Adams, Frank, *supra*, p. 221. The manuscript history of Cedar City Ward, Parowan Stake, in Church Historian's Office, states: "Thousands of dollars had been appropriated by the territorial Legislature, other thousands were contributed by the Church mostly in clothing, groceries, boots and shoes and a general assortment of goods".

⁽³⁶⁾In *Bartholomew v. Fayette Irrigation Co.*, 31 Utah 1, 86 Pac. 481, it was held that a corporation which included the owners of the major portion of water-rights in a stream held in common by a number of persons had no right to control the manner of distributing the water to those who had not joined the corporation, without their consent; but that these others to the extent of their interest had an equal right to a voice in the proceedings at which matters of water regulation and distribution were determined.

effective control than are the majority members of an unincorporated association.

Management.—The **unincorporated** association can be as simple in form as the members care to make it. Simplicity is often desirable, provided efficiency in operation is not sacrificed to it. The principal objection to the unincorporated company is that it is weak in legal features. Due to the fact that suits must be brought to enforce collection of assessments, such an organization in its last analysis depends upon the continued good will of all members for satisfactory operation and, therefore, lacks the "teeth" of the incorporated company in insuring effective management and speedy collection of assessments. It is a satisfactory arrangement under exceptionally favorable circumstances which, however, may be altered at any time by changes in personnel or in physical conditions or thru the vagaries of human nature, and consequently is not generally to be recommended except as a temporary measure.

The **incorporated** mutual company, however, has proved well suited to the management of a going enterprise. The organization is easily formed and perfected at a relatively small cost, and the overhead can be kept within limits that compare favorably with other forms of organization under similar circumstances. The powers of such company are quite broad, its remedies against delinquent stockholders and stubborn minorities are direct, and the legal provisions governing it are sufficiently elastic to enable the officers to handle all ordinary matters without undue formality or delay. Furthermore, thru the stockholders' ability to remove directors from office whenever the occasion demands, the water users are able to exercise fairly direct control over the company policies.

Extensions and Improvements.—An unincorporated company may make enlargements and improvements which the members can pay for at the time, but cannot compel a member to contribute to their cost unless he has legally assented to the undertaking. Incorporation is a practical necessity before anything material in the way of financing may be undertaken, for the incurring of large indebtedness by an unincorporated group who own water-rights individually is a cumbersome process.

The mutual irrigation company is an effective agency for making extensions and improvements that can be financed locally, that is, thru the sale of additional capital stock, or thru cash or labor assessments upon the stockholders, or thru comparatively short-term loans from local banks. In such case the

irrigation system necessarily has already been developed to a certain point and consequently offers valuable security for a loan even without adding the value of the proposed improvements. The ready market for loans of this type is generally confined to local banking institutions familiar with the value of the existing system and the merits of the contemplated improvements; hence, the limit that may ordinarily be borrowed is relatively low.

On the other hand, the mutual company under ordinary circumstances is less effective in financing supplemental irrigation development that is beyond the immediate means of the present or prospective water users or their local borrowing facilities. First-hand knowledge of local conditions is seldom available to the wider markets that must then be looked to, and it is, therefore, more difficult to place a large loan. Bond issues serve to reach more investors than do ordinary notes, but their ready disposal outside of a limited range of informed investors depends upon the favorable reputation of the class of securities to which they belong. The bonds of mutual irrigation companies in Utah have been satisfactory investments but have not been sufficiently numerous to build up a reputation as a class. Consequently, the market for such bonds is limited.

New Development.—The use of the mutual company in accomplishing new development in an arid country is subject to even further qualifications. The history of irrigation in Utah shows clearly that it has been done under certain circumstances, namely, where construction was easy and could be performed by the labor and means of the water users themselves, under the protection and sometimes with the assistance of such an interested agency as the Mormon Church. However, the era of simple, inexpensive construction has largely passed and opportunities for unaided development, while they undoubtedly still exist, are becoming increasingly rare. New settlers as a class have not the wealth necessary to pay for expensive construction work. Therefore, outside help must be looked to for much future construction of entirely new projects. A project of this type has no immediate security to offer for a loan and cannot safely depend upon bond issues of such speculative character, particularly in view of the present limited market for even well-secured irrigation bonds. Hence, it may be stated as a general rule that the mutual company is not at the present time suited to the development of entirely new projects in Utah unless the settlers have themselves sufficient means to finance the whole

undertaking, which is seldom the case, or unless some outside public or private agency is willing to assume the necessary risk in financing the enterprise as a means of developing the country.

THE CORPORATION LAW

Mutual irrigation corporations may be formed under the general incorporation laws of Utah⁽³⁷⁾. The law itself should be consulted before any attempt is made to incorporate. In connection with the present discussion, some of the principal features of the law are briefly summarized.

Articles of Incorporation.—There must be at least five incorporators, who are required to enter into an agreement covering a number of specified points and such others as the incorporators deem necessary. Irrigation companies and water users' associations are granted certain privileges in connection with affidavits to the articles of agreement, as well as other exemptions noted later. The articles are recorded by the county clerk and a copy is filed with the Secretary of State. The articles may be amended in any particular by a majority of the outstanding stock, but a change in the original purpose of the corporation or in the individual liability of the shareholders requires unanimous consent. The life of a corporation may be not less than 3 nor more than 100 years.

Articles of incorporation should be made definite and concise, and particularly should set out clearly the powers and functions of the company. This is very important, for when any question arises as to the purposes for which a corporation has been formed, it is the articles that are looked to. For example, a corporation formed to divert water thru certain canals, no mention of storage being made in the articles of incorporation, was held to have no power to construct a storage reservoir⁽³⁸⁾. Matters that may be left to the by-laws, however, should not be included in the articles, for the articles are the harder to change and the inclusion of unnecessary statements may later prove embarrassing.

In order that there may be no question as to the mutual character of the corporation, it is advisable that the articles of incorporation set out clearly the fact that water is to be deliv-

(37) The full text of these laws is reproduced in a pamphlet entitled "Corporation Laws of Utah, 1917, as Amended 1919, 1921, 1923 and 1925", published by the Secretary of State, Salt Lake City, Utah.

(38) Seeley v. Huntington Canal & Agricultural Association, 27 Utah 179, 75 Pac. 367.

ered to stockholders only. This may be stated in connection with the business of the corporation, or the powers of officers, or description of the capital stock.

Officers and Powers.—Directors, who must be not less than 3 nor more than 25 in number, must be elected by and from the stockholders in the manner provided in the articles of agreement, and may be removed from office as provided therein or by vote of a majority of the outstanding stock at a meeting held for that purpose. By-laws, rules, and regulations may be made by the stockholders or by the directors, as the former may determine. Corporate powers which may be exercised by the board of directors include the power to enter into contracts to effect the company's purposes, to sue and to be sued, and to acquire and dispose of property.

Stock.—Stock is personal property, evidenced by stock certificates, and may be transferred from one person to another. Stock may be divided into different classes. Unless otherwise provided in the articles, shareholders may cast one vote for each share of stock held by them. Assessments on full-paid stock may be levied only to the extent provided in the articles of incorporation. The law outlines a method of levying assessments applicable to corporations, the articles of which have not provided a method, irrigation companies being permitted to omit publication of the notice of levy. Delinquent stock may be sold at auction for the amount of the unpaid assessment and charges, or the sale may be waived and legal action brought.

Consolidation.—Corporations of the same kind, engaged in the same general business in the same vicinity, may consolidate with the consent of a majority of the outstanding stock of each corporation. Consolidation may be effected either by joining together two or more existing corporations into a new company or by forming a new corporation to buy out the older ones, the effect being the same in both cases and the difference being only in method of procedure.

Dissolution.—Corporations may be dissolved upon application to the district court after a two-thirds vote of all stockholders and a showing that all debts have been paid.

Exemptions.—Mutual irrigation companies, including water users' associations on Federal projects, which are engaged in furnishing water exclusively to lands of members are exempted from making an annual report on their capital stock, from paying a fee for filing certified copies of articles of incorporation, and from the annual corporation license tax. They are, how-

ever, required to pay to the Secretary of State a fee of \$5 for issuing the certificate of incorporation and a further fee of \$1 for each amendment to the articles.

MANAGEMENT

Character of Management.—Efficient management has a direct bearing upon the cost of operation and, therefore, upon the annual cash outlay of the water users. The mutual company is not a profit-making organization. The owners of the irrigation system are themselves the water users, that is, the ultimate consumers, and, therefore, must absorb the entire cost of operation, whether economical or otherwise. The larger companies operating on a cash basis are in a better position to insist upon efficient management than are the small ones. The small companies generally operate with very little overhead, but in certain cases countenance slipshod methods of water delivery and water measurement that really tend to depreciate the value of the capital stock, for there is little incentive to acquire a large holding of stock without assurance that all the water it represents will be delivered.

Lavish expenditures are out of tune with the habits and training of Utah water users and are not the rule of the irrigation companies. This conservatism has been partly or wholly responsible for delaying some improvements that would have made for greater efficiency and economy of operation. On the other hand, it has doubtless been at times a safe bulwark against ill-considered investments.

Boards of directors are sometimes open to the criticism of being involved in too many details of operation and maintenance. This tendency is perhaps quite natural in the case of a mutual irrigation company, composed of members all of whom are so vitally interested in the water problem and its solution at the least possible expense, and it is more excusable with a small company of limited resources. With a large company, however, it may become a serious handicap on account of its greater interests and more complicated affairs. The board of directors is charged with the formulation of policies and is held responsible for proper administration; nevertheless, the execution of many policies can be handled better, and certainly more expeditiously, by the manager. Whether the president, or the secretary, or the water-master, or some other person shall act as manager is of far less consequence than is the delegation of managerial duties to someone especially qualified to discharge

them. It is not uncommon to find some one of the officers taking the lead and tacitly acting in this capacity.

Stockholders' Meetings.—The stockholders or members of the company or association meet annually to elect officers, receive the annual reports, discuss matters of import, and render any decisions required, and hold special meetings upon call. The rules of a few companies require the stockholders to authorize the amount of the annual assessment. This, however, is an administrative matter that belongs more properly to the board of directors. On the other hand, a special assessment for purposes other than operation and maintenance, particularly where the incurring of heavy indebtedness or some change in the basic policy of the company is concerned, is a matter that the stockholders are entirely justified in reserving the right to pass upon.

The amount of interest shown by the stockholders in the annual meeting usually depends upon the general state of the company's affairs. In one case, for example, where considerable apathy had formerly existed toward the administration, the exposure of certain fraudulent stock transactions has brought out representations of 80 per cent or more of the stock at the annual meetings. Where officers are chosen in alternate years, more interest is shown in those meetings than in the ones held in the intermediate years.

Officers.—The active management of an incorporated company is in the hands of a board of directors, and in case of an unincorporated association it is controlled by a board of directors, or by a committee of members, or solely by the water-master. The board usually consists of 5 or 7 members, tho occasionally more, and is elected every year or every two years. The president and vice-president are chosen from the directors, usually by the board but in some cases by the stockholders. The board usually appoints the secretary-treasurer, the water-master and his assistants, and such other employees as may be necessary.

The corporation law of Utah, as stated heretofore, places the minimum number of directors at three. In spite of the general tendency to have larger boards, it is an exceptional situation among the companies of Utah that really requires a number greater than the legal minimum. These organizations for the most part are small, compact, and of quite homogeneous character, and are usually in smooth running order. The process of bringing too many minds to bear upon the ordinary problems of management either delays matters unnecessarily

or resolves itself into one-man government with consequent defeat of the original purpose.

The board of directors is supposed to meet periodically, for example, on the first Saturday in every month. With most of the companies, however, there is not enough business to require a regular monthly meeting and in such cases the board meets only when necessary to transact some definite business. The secretary is on duty thruout the year, or at least is available at all times, and the superintendent or water-master is usually able to handle the customary work of operation and maintenance on his own initiative, consulting with the president or with individual directors on many matters of policy that do not require united action by the board.

The directors of the corporation levy the annual assessment for ordinary purposes. They may make contracts, incur indebtedness within limitations allowed by the articles of incorporation or the by-laws, and approve the expenditure of funds. Altho the boards of certain companies make no appropriations until after they have approved individual claims, a policy better adapted to the centralization of managerial duties is to authorize maximum expenditures for specific purposes and then to allow the superintendent or water-master a free hand in spending the money, provided, of course the board has sufficient confidence in his judgment. The directors are often authorized to make the by-laws, usually subject to approval by the stockholders.

Executive Committee.—Incorporated companies in some sections of Utah have as part of their organization executive committees for handling certain details of management, such as authorizing the issuance of stock, ordering water in and out of the canal, superintending the distribution of water, and for taking any action involving possibly some determination of policy that may be required on short notice. The executive committee is composed usually of directors or stockholders, three or five in number, and is appointed by the board. In one case this committee consists of two directors and the water-master. In another instance, three directors are elected from each of two canal systems operated by a company, and the seventh director, the president, is elected at large, the president and the three members from each system constituting an executive committee for the administration of the local affairs of that system.

The executive committee has often proved cumbersome, particularly where a tendency has existed to charge the committee

with duties which could equally well have been left to the president or even to the superintendent. Accordingly, the plan has been discontinued by some of the companies that formerly used it, and under ordinary circumstances has little to commend it.

Board of Appraisal.—This board is primarily of historical interest in connection with some of the ditches built by stock subscribers after the incorporation of companies, where, for example, a landowner subscribed for stock of the par value of \$100 and then contracted to work on a length of ditch estimated to cost about \$100. In such case, after completion of the work a board of appraisal, composed of directors or others, and which was sometimes the executive committee, appraised the value of the work and of materials furnished and credited the subscriber for such amount. If the appraised value was \$95 in the example cited, the subscriber could make up the difference in cash or in further work; if more than \$100, he was reimbursed to the extent of the extra amount or was credited with future assessments, or in some other way.

Distribution of Water.—Water is distributed to the users by the water-master or under his direction. The usual method of delivery is to rotate irrigation streams among the stockholders according to a fixed schedule. Deliveries on demand of the users are provided for on some of the more recently constructed systems, and are practiced on certain of the older ones also while the water-supply is ample. Continuous deliveries are very uncommon in Utah.

Control of Laterals.—As a rule only the main irrigation canals were built by the entire community, the laterals leading from the main canals to the farms being constructed by the individual farmers or by small groups of farmers directly interested. Such laterals continued to be operated and maintained by the local users. Where the laterals served relatively large acreages and presented increasingly difficult problems of operation and maintenance, they often came to be incorporated. Whether formally incorporated or not, however, it is not uncommon to find local water-masters in charge of the larger independent laterals.

Certain large organized laterals own blocks of stock in their parent companies; others are composed of members who own main canal stock as individuals. Where main canal assessments are payable in labor, it is sometimes customary to assign a block

of the main canal to a large lateral company for cleaning and repairing.

The agency for construction of lateral ditches was of little moment when the water users were themselves building also the main ditches. However, the situation has changed and greater coordination in construction and operation thruout the entire system is recognized as desirable. Consequently, in case of some of the later canal construction in Utah the parent company has built and has continued to operate ditches to reach the individual farms, and even with some of the oldest canals it has proved advisable for the central management to assume maintenance of all lateral ditches and supervision of the distribution of water to all users rather than merely to deliver water into the heads of the laterals.

FINANCES

Capital Stock.—The respective interests of the owners of an incorporated mutual irrigation company, as with other corporations, are represented by shares of the capital stock. Inasmuch as the shareholders of a mutual company are also the water users, stock ownership is coincident with the right to receive water. The share, therefore, may entitle the holder to a stated amount of water or to a proportional part of the total supply provided by the company, and may or may not have any reference to the area or location of land to be irrigated with such water. Obviously, the integrity of the share of stock can be maintained only so long as water deliveries are carefully and equitably made. Shares are evidenced by certificates which are transferable on the books of the corporation.

When the older associations became incorporated the members transferred their water-rights and shares in the ownership of physical ditch property and right-of-ways to the new corporation and received in exchange shares of its capital stock. A corporation when substituted for an old irrigation district issued certificates of stock in exchange for district certificates of water-right or other evidence of interest. When shares are originally spread uniformly over the area to be served, as is usually the case when a corporation is formed to take the place of an old irrigation district, the actual ratio of shares to the acre is an arbitrary figure that makes little difference. One share to the acre is a convenient unit and for that reason has frequently been the basis of original capitalization.

Stock is divided into classes where the water-rights repre-

sented are of different priorities, and sometimes where different geographical areas are involved. Convenient designations are Preferred and Common, or Primary and Secondary, or A, B, C, D, etc., where more than two in number. Some companies have as many as 11 or 12 classes of stock, but those cases are exceptional. The par value, rights, and responsibilities carried by the several classes are defined in the articles of incorporation. A share of second-class stock in a typical company, for instance, is assessable in one-fourth the amount levied upon a share of first-class stock and represents the right to use surplus water for pasturage only. More frequently it may simply indicate a secondary water-right usable for the irrigation of any crop. Stored water in the use of which only a part of the stockholders are entitled to participate often supplies preferential rights and, therefore, is not classed as subsidiary water, even tho the stock which represents it may be called "Secondary". Likewise, the several classes may refer to different ditches controlled by the company or to different subdivisions of one ditch system. Where a corporation has been formed to include all ditches diverting from a stream, the stock may be divided into as many classes as there are classes of water-rights on the stream, each class being entitled to water only after all prior classes have been fully supplied. After the improvement of the water-supply of one of the principal mutual companies of Utah, holders of Secondary stock were issued Primary stock at the rate of 1 share of Primary to 2 of Secondary, a process which if carried far enough would result in the practical elimination of a subordinate class of stock. Elimination of secondary classes of stock simplifies the distribution of both assessments and water, and for that reason is effected in the consolidation of irrigation enterprises discussed above.

The par value of the stock when multiplied by the number of shares is a function of the authorized capitalization. The original capitalization, which may be and frequently is less than that authorized by the articles of incorporation, theoretically represents an appraisal of the actual value of water-rights and physical properties at the time of incorporation. If further issues of stock are foreseen in the near future, some trouble may be avoided by making the authorized capital at the start large enough to cover the additional issues.

The market value of the stock depends upon the demand and, therefore, is often found to exceed the par value many times over. Appreciable fluctuations in the market price are sometimes incident to stock representing water-rights that are

not appurtenant to the land, the tendency being to rise in years of water shortage or of high prices for farm products and to become depressed under the reverse of such conditions. Stock that is attached to individual tracts of land and not readily separable therefrom has no market value apart from the value of the land.

As a rule, the shares of stock are not located upon definite tracts of land, for the usual practice in Utah has been to consider the water separable from the land at the will of the owner. As a practical matter, the use of water and the ownership of stock are generally confined to a limited area owing to the prohibitive cost of building conduits to carry the water very far away. The rules of certain companies, reflecting the water users' objections to transfers to outside lands, definitely provide that water may be used only thru the company's canal system, and those of other enterprises could be made to cover the same point if there appeared any danger of alienating the water. The rules regarding transfers of stock and of the water represented thereby from one headgate to another on the canal system are found to vary considerably with the amount of inconvenience locally occasioned by transfers; for some companies permit transfers freely, others forbid transfers after the season's schedule of water deliveries has been drawn up, and still others discourage any transfers from one piece of land to another unless in the opinion of the directors the situation justifies a change. The situation lends itself to easy regulation, and such transfers of stock as do take place are for the most part on a very small scale.

A possible result of the free transfer of stock of an irrigation company is the concentration of shares in the hands of speculators. That such tendencies have rarely developed, however, appears from answers to inquiries addressed to a number of mutual companies in the state, which indicate very few companies in which such monopolies have materialized and no situations that are regarded as really dangerous. The usual reason for acquiring additional stock in the Utah mutual companies is to improve one's own water-supply. However, the practice of renting water as between stockholders from season to season or for part of a season is quite common. Some companies also rent out the water represented by treasury stock.

Holders of capital stock exercise the voting power of the corporation. In companies having only one class of stock, suffrage is generally on the basis of one vote per share. Where

there are several classes, special voting privileges may, if desired, be given the preferred classes. For example, an arrangement of this character gives a vote to each dollar of the par value of the stock, so that a share of class A stock with par value of \$50 controls 50 votes, a share of class B stock at \$45 par controls 45 votes, and so on down.

Assessments.—The revenue of the mutual company for the payment of operation and maintenance expenses, the discharge of indebtedness, and sometimes the cost of new improvements, is derived primarily from assessments upon the capital stock. Where there is only one class of stock the assessment of course must be uniform upon all shares except those of treasury stock, which is non-assessable; where there are two or more classes, either the par value of the classes or the respective rates of assessment may be varied. The corporation law fixes the limit of a single assessment at 10 per cent of the outstanding capital stock.

There is no uniformity in practice as to the time of year at which assessments are levied. The general rule is to levy one assessment annually, but the date of levying varies from January to late in the fall. Fortunately, there is sufficient flexibility in the legal provisions governing the levying of assessments to allow any company to adopt the procedure best suited to its circumstances. If trouble is being experienced in collecting assessments, an early levy is effective in making possible the withholding of water from delinquents early in the season. If the important thing is to make the time of collection coincide with receipts from crop sales, the levy may be made during the summer. Uncertainty as to the cost of the spring canal cleaning has led some companies to defer the levy until after that work is over, but may also be overcome by making two levies annually—one in the spring to take care of the estimated cost of the annual cleaning, and a second in the fall to cover additional expenses and any deficit in the cost of cleaning. The assessment becomes delinquent upon a date which must be not less than 30 nor more than 60 days from the time of making the levy.

Assessments in actual practice are made payable in cash or labor or both. In the case of the smaller enterprises a labor assessment is commonly levied for the ditch cleaning, each stockholder working in proportion to the number of shares held by him, or hiring the work done, or paying a cash equivalent; and an additional cash assessment is levied to pay the salary of the water-master and to make such purchases as may be

required. In other cases the assessment may be levied in cash and the stockholders permitted or urged to work out the greatest part of it, each stockholder being debited with the amount of the assessment and credited with the value of work done. In line with the growing demand for more orderly and business-like procedure, the larger companies are coming to regard the assessment as purely a cash transaction—to this end employing stockholders where possible, or giving each one an opportunity to work out the amount of his assessment, but paying cash for work done and requiring the assessments to be collected in cash. Whatever may be the character of the individual transaction, it is, nevertheless, still the rule of most mutual companies in Utah that stockholders or members may pay for their water in labor so far as practicable.

Enforcement of Collections.—Collections of delinquent assessments are commonly enforced by incorporated companies in two principal ways: (1) by the sale at auction of the stock involved, and (2) by refusing water service to delinquents. Collection by suit at law is possible, but is seldom undertaken on account of the expense and possible delay involved. Withholding water is an effective remedy, if properly timed, that is authorized by the articles of incorporation or by-laws of some companies and is practiced without specific authorization by some others. The sale of delinquent stock is always available to the corporation and is frequently practiced, but can be and usually is carried out under circumstances that insure to the stockholder a fair opportunity to redeem. At the public sale, for example, the secretary or some other officer can bid in the stock and hold it a reasonable time for redemption by the owner, thus saving him from losing it thru possible inadvertence for the relatively small amount of the assessment. Under certain circumstances, such as in companies formed on Carey Act projects, and whenever the basic contractual relations of the members provide for it, the stock assessment becomes a lien upon the land.

The members of an unincorporated irrigation association are liable to each other, in actions for contribution, in proportion to their respective uses or ownerships, for the expense of operating and maintaining the irrigation works of the association. This does not apply to a case in which the rights and obligations of the parties have been determined by a valid contract⁽³⁹⁾.

(³⁹) West Union Canal Co. v. Thornley, 64 Utah 77, 228 Pac. 199; Thomas et al. v. District Court of Boxelder County et al.,—Utah—,242 Pac. 348.

Expenditures.—Disbursement of funds is under the control of the board of directors. In case of the larger companies, payment may be made by the treasurer on warrants drawn by the president and countersigned by the secretary. With many smaller companies, where these more elaborate methods are unnecessary, the secretary-treasurer simply draws a check on the bank where the funds of the company are deposited.

Dividends.—The articles of incorporation of some of the older mutual companies authorize the board of directors to declare dividends whenever funds are available for that purpose. The declaration of cash dividends by these companies, however, is seldom if ever practiced. The mutual company is essentially designed to operate at cost and hence to obtain by assessment only enough revenue to insure the payment of the necessary expenses for the year. Surplus funds left at the end of a season, therefore, are carried over to the following year and serve to that extent to reduce the following season's assessment. The mutual company's logical dividend is in water for irrigation.

Indebtedness.—Several of the larger Utah companies organized in comparatively recent years have issued bonds for financing improvements or for assisting in the completion of works, altho the market has been quite limited. The number of bonded companies is a very small percentage of the total, and the bonded debts per acre are seldom very large. The bonds have borne interest at rates varying from 6 to 8 per cent. A large part of the principal of these bonds has been paid off.

In some communities there is a strong sentiment against bonded indebtedness that results in the water users' doing their own construction work or leaving proposed developments undone until such time as they can be financed locally. The Utah mutual companies have been generally quite free from financial speculation and have enjoyed an enviable record in the matter of paying off such indebtedness as they have incurred.

Money has been borrowed in some cases for construction purposes on notes, secured by mortgages on the irrigation systems. These transactions have been local affairs or have been arranged with institutions familiar with local conditions. A typical example is a 5-year note, with option of a 5-year renewal, bearing 7 per cent interest.

It is common practice to borrow money from the local banks in relatively small sums for current expenses pending the collection of assessments. Interest on such loans is usually at the rate of 7 or 8 per cent, altho in recent years some companies

which have established excellent credit and have enjoyed exceptional banking facilities have been able to secure 6 per cent money.

EXTENT OF DEVELOPMENT

The extent of development by mutual irrigation companies in Utah, and the relative importance of such development as compared with the total for the state, may be appreciated by reference to the following table, which has been compiled from returns published in the Fourteenth Census of the United States, 1920:

TABLE 1.—Data from 1920 census showing relative importance of cooperative irrigation enterprises in Utah

	Cooperative Enterprises	Total for State
Acreage irrigated (1919).....	1,014,649	1,371,651
Capital invested.....	\$20,254,212	\$32,037,351
Cost of operation and maintenance (1919).....		
Total.....	\$ 895,509	\$ 1,122,456
Average per acre.....	\$ 0.87	\$ 1.08
Diversion dams (No.).....	1,017	1,479
Storage dams (No.).....	241	307
Main ditches (No.).....	877	2,381
Capacity (second-feet).....	21,502	29,447
Length (miles).....	3,758	6,343
Lateral ditches (No.).....	3,284	4,068
Length (miles).....	3,514	5,334
Reservoirs (No.).....	143	476
Capacity (acre-feet).....	763,299	1,600,505

The number of cooperative enterprises is not given in the returns. The number of enterprises of all types in the state is given as 2403.

Of the total irrigated area of the state in 1919, then, 74 per cent was included in cooperative enterprises. This indicates a relative gain over the preceding census, which showed 68.8 per cent included in this class of enterprises. An absolute gain in irrigated area of 327,389 acres, or 47.6 per cent, is credited to cooperative enterprises in 1919 over the figures for 1909. Much of this gain seems to have been at the expense of enterprises classed as "individual and partnership."

THE COOPERATIVE EFFORT SUMMARIZED

Early Complete Cooperation.—The earliest cooperation in Utah was fostered by the church leaders and was made possible because of the hazards of the early days, the religious zeal of

the settlers, the singleness of purpose of the Mormons in creating a commonwealth in the desert, and the strength and influence of the only authority—the church. At the first, competition was out of place in such an environment. The preservation of life and the creation of property values in those perilous times depended too much upon the whole-hearted working together of all members of the community. Everyone, therefore, worked against time; it was assumed that each would give his best efforts; and no record was kept of individual accomplishment in ditch construction. In the distribution of land and water all shared alike⁽⁴⁰⁾.

Later Reservations.—With the growth of the community and the creation of security and material prosperity, a change came over the original communistic spirit of the pioneers. Necessarily, all members of the community who came to share in the use of a ditch did not arrive at the same time. The ditch was originally built to carry more water than needed by the first company in order that newcomers could put in their crops immediately and earn their right to take water by working on the ditch later. This was a practicable method of “grubstaking” the later arrivals, but it permitted some of the newcomers to take advantage of the labor of those who came earlier. In any event, the human nature of the first arrivals in looking after their own interests asserted itself from time to time; for instances are recorded of the turning away of intending settlers on the ground (subsequently proving to be mistaken) that the whole water-supply was already appropriated, and of admonitions from Brigham Young regarding the just distribution of farming lands among later arrivals at a settlement⁽⁴¹⁾.

The growing disposition of the pioneers to hold firmly to what they had acquired extended to the communities as a whole and was made evident in their disinclination to pool their irrigation resources with those of other communities. After all, tho this attitude proved to be unfortunate, it is not difficult to understand. These people had fought against the destructive forces of nature and of savages to create their irrigation wealth; they had acquired a strong attachment for the visible evidences of their toil; and they were, therefore, disposed to resist bitterly any infringement of their rights or any movement that appeared to them to depreciate the value of those rights. What

(40) Geddes, Joseph A., *supra*, p. 94, states: “When extreme need appeared those who had shared with those who had not. Shortage in capital was largely offset by the organized use of labor power.”

(41) Manuscript histories of Mount Pleasant Ward, San Pete Stake, and Payson Ward, Utah Stake, in Church Historian's Office.

they had built they intended should endure. The first settlers had sacrificed for their neighbors and with them, but when the exigencies of the early days were no longer pressing they declined to extend the scope of their sacrifices. Consequently, there are found cases of dissatisfaction on the part of water users near the heads of ditches at being taxed to keep the lower parts of the ditches in operation, and of refusal on the part of irrigation communities to combine with other communities except where necessary to protect the respective interests of all. Nor were these isolated cases. The tendency seems to have been widespread.

The independence of the separate communities that asserted itself so promptly and so forcibly has been an outstanding feature of irrigation development in Utah and is apparently almost as pronounced now as it ever was. However, with the passing of the first settlers the problem of securing more efficient organization of irrigation interests is becoming less difficult to solve, for the successors of the pioneers, while quite jealous of their rights, have not the same close personal attachment for their ditches as had their fathers and are somewhat more willing to participate in changes for the better when convinced that their interests will be properly safeguarded. There are well-founded hopes, then, that the program of consolidation with which the Bureau of Public Roads and the Utah Experiment Station have had much to do may be effective in bettering the conditions on many of Utah's streams.

Modern Tendency in Financing.—A feature of the cooperative effort in Utah that is of great economic interest and importance is the modern substitution of borrowed capital for the early labor of the individual settlers in the construction of irrigation works. Some work that has been done in recent years, particularly in remote communities, has proceeded along much the same lines as did the earlier work; but in other cases the tendency has been to borrow money to accomplish it. The financial help given to certain communities by the church and by several political subdivisions of the state in earlier times was intended not as a substitute for the actual work of the settlers, but to supplement it where the local effort was proving inadequate or where the settlers had no money to buy powder or other materials. In certain modern cases the settlers have gone into debt for work that they could have done themselves.

There are several reasons for the new tendency, which altho by no means universal, is nevertheless in evidence. In the early days the only means the settlers had of accomplishing a thing

was to work it out themselves. There was little or no money in circulation, and the pioneers had no opportunity of borrowing money even if they had wished to do so. Pioneer construction was relatively simple, and such materials as were needed were procurable from nearby sources. Furthermore, community life was not complicated; each man had his community work and his farm routine fairly well blocked out. In the typical community the citizen earned his livelihood at home, and his farm was not so large or his other interests so great that he had no time left to work on the ditch.

On the other hand, except in isolated communities, rural economic life has changed greatly in late years and has brought to the farmer's attention new modes of living and new resources that have altered his ways of thinking and of doing things. Farm mortgages have become common, and from farm indebtedness to community indebtedness is only one step. Likewise, the farm work of many individuals has become more complicated and has left them less time to give to other matters, so that in established communities are found some recent improvements, less difficult than the earlier work done by the settlers, nevertheless, being financed on borrowed money. Furthermore, a large amount of new work is being done on a scale that is entirely beyond the unaided resources of the community to be benefited and that, therefore, requires the assumption of indebtedness. In the case of some smaller improvements that could be built by the water users, an undoubted factor is that the need for water is not the life-and-death matter that it formerly was and that the old community spirit is not so strong.

The importance of the "modern" trend is evident. It means on the one hand the possibility of irrigation construction beyond the immediate financial means of the persons to be benefited; the substitution of more effective and more economical distribution systems for the uncoordinated systems of the pioneers; the more complete utilization of land and water resources; and the enjoyment of greater comforts and conveniences by the present generation. It involves, on the other hand, the creation and sometimes the accumulation of indebtedness and interest charges and the shifting to posterity of much of the burden of paying it off.

Success in Relation to Irrigation.—The early economic history of Utah is the story of a great experiment in community or cooperative effort. The development of agriculture under irrigation, which is conceded to be the foundation of Utah's material prosperity, is one phase of this effort. To what extent,

then, has the cooperative movement in its relation to irrigation in Utah been successful?

While every individual had his place in working out the community problems, and while the collective will of the settlers was necessary to their solution, the part played by the Mormon Church in the cooperative movement is of primary importance. These cooperative undertakings were not spontaneous developments, but during their formative period were prescribed and carried out to the smallest detail under the supervision of a thoro and most efficient church organization. The church leaders had the foresight to realize that without complete cooperation their task of building an empire out of the wilderness would proceed along haphazard, unrelated lines, with no coordination of effort, and with difficulties increased manifold. They, consequently, applied strict discipline in the execution of their plans. Complete organization, supported by religious enthusiasm and the necessity for unity of forces in overcoming dangers and obstacles, made this great cooperation possible.

This effort covered a broad geographical area, but, so far as irrigation is concerned, was divided into numerous small communities—probably the only practicable way of utilizing the water-supplies under those adverse conditions which made it necessary to obtain water immediately in the easiest and cheapest way. These communities have held out strongly for their separate identities. It is only in recent years—50 to 80 years after the settlement of so many communities—that definite ground is being gained in bringing together enterprises having related interests and which by combining may improve their own welfare as well as that of the public.

The cooperative effort, then, was eminently successful in the establishment of many small irrigation systems entirely independent of each other, but fell short of accomplishing in later times a logical coordination of all related irrigation uses. This undeniable fact requires particular emphasis, not for the purpose of detracting from the splendid groundwork laid by the pioneers, but in order to lend support to the efforts now being made to bring about needed consolidations of enterprises. The cooperative movement in Utah has brought about a sound irrigation development of widespread proportions that has been an essential element in the growth of that commonwealth and that has served as a valuable inspiration and example to other states. There is still abundant vitality in the movement, and every promise that if properly directed it will prove the effective means of even further contributing to the public welfare.

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