



PROCEEDINGS
29th ANNUAL MEETING

Western Snow Conference

Spokane, Washington – April 1961

Mount Spokane, Photo Courtesy Washington Water Power

PROCEEDINGS
of the
WESTERN SNOW CONFERENCE

Spokane, Washington

April 11-13, 1961

TWENTY-NINTH ANNUAL MEETING

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FOREWORD

This publication reports the available papers and formal discussions presented at the Twenty-ninth Annual Meeting of the Western Snow Conference. On this occasion the Conference convened in Spokane, Washington, on April 11-13, 1961. It is hoped that the various reports and discussions presented in these Proceedings will be of value to those concerned with snow and water in their several forms and many important uses and will be an inspiration to vigorously continue research, development, and application in this field of science.

Correspondence regarding these Proceedings or other Western Snow Conference matters should be addressed to Jerry van de Erve, U. S. Weather Bureau, Box 227, Sacramento 1, California.

The publication of this report is made possible through dues and registration fees from individual members and the following organizations who hold corporate memberships or have purchased copies of former Proceedings.

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Director, Meteorological Branch, Department of Transportation, 315 Bloor Street West, Toronto 5, Ontario, Canada
The Metropolitan Water District, c/o Mr. C. C. Elder, 306 West Third St., Los Angeles 13, California
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Upper Colorado River Commission, Salt Lake City, Utah
Washington Water Power Company, Spokane, Washington
Water Resource Development Company, Denver, Colorado
West Kootenay Power and Light Company, Ltd., Trail, B. C. Canada

A P P E N D I X

Minutes of Executive Committee Western Snow Conference April 11, 1961

A meeting of the Executive Committee of the Western Snow Conference was called to order at 8:00 P. M., Tuesday evening, April 11, 1961, in Spokane, with the following constituting a quorum in attendance:

Francis Mayo	Wilbur Simons
Jack Washichek	Mel Ord
Ashton Codd	Donald Kuehl
Morlan Nelson	William Lang
Earl Neff	Francis Blanchard
Frank Stermitz	Jerry van de Erve
Oliver Johnson	Fred Strauss
Manes Barton	

Ashton Codd reported on the status of the bibliography. He has been organizing material and has had forms mimeographed. The format as used in the Sipre (Snow, Ice, Permafrost Research Establishment) Report #12 is being used as a guide.

Manes Barton, as Chairman of the Church Award Committee (with other committee members, Lang, van de Erve and Strauss) reported on the Committee's activities to date. The Committee recommended that a medal and certificate award be given annually to an outstanding science student of the Reno High School as named by the head of the High School Science Department. It is understood that the Reno High School is receptive to the thought behind the award with the resultant publicity and mention of the work of Dr. Church. The award would be presented each year before the graduating class and the large audience of parents and friends. It was approved that the Committee would continue work in furtherance of this.

There was a brief discussion of the Coleman Award Fund to which the Snow Conference contributed. It was reported that the student aided need not be from or attend the University of California.

The Chairman of the Awards Committee, William Lang, recommended and received approval for the award of a life membership to Harold C. Troxell.

The financial report was received and approved. Publication costs had risen to about \$1.35 each for Proceedings (800 printed) and 50¢ for the Forum (1300). It was recommended that the price of Proceedings be increased to \$3.00 and for copies of Forum to 50¢ each. However, an individual member paying the regular \$2.00 annual dues will continue to receive both Proceedings and Forum without additional charge.

In discussion, it was shown that corporate memberships have dropped through normal attrition. Action to recruit more corporate members was thought desirable. An offer by Arch Work to head such a Committee was accepted. He was authorized to name his own Committee to work with and through the area chairmen. Although preparation of literature or a brochure to explain purposes and work of the Snow Conference was authorized, it was agreed that such documents must have unanimous approval of all four area chairmen prior to publication.

The Editorial Committee of Wilbur Simons, Jack Washichek, Homer Stockwell, Jack Hannaford and Jerry van de Erve, ex-officio, made recommendations as to length of papers. It was approved that a policy is to be prepared for guidance of authors for the 1962 meeting limiting length (for printing) of papers and discussions.

The North Continental Area's recommendation that the 1962 meeting be held in Cheyenne, Wyoming was accepted; (Tues., Wed., Thurs., April 17, 18, 19, 1962).^{*} It was recommended that this matter be referred to the business meeting and that the dates be recommended. The South Pacific Area was named as the location for the 1963 meeting and the representatives indicated that an invitation will be extended at the 1962 meeting.

Francis Mayo's committee recommended the Constitution be amended to provide for a secretary. After due discussion, the necessary amendments were recommended for action at the business meeting. The changes proposed follow these minutes.^{*}

It was approved that the meeting be adjourned.

Fred A. Strauss

^{*} Dates were changed at business meeting; final dates selected: Mon., Tues., Wed., Apr. 16, 17, 18, 1962.
^{*} The entire constitution, as amended, follows. Newly revised sections are underlined.

MINUTES OF BUSINESS MEETING
OF
WESTERN SNOW CONFERENCE
April 13, 1961

A business session of the Western Snow Conference was held at 11:30 A. M., April 13, 1961, General Chairman Jerry van de Erve presiding.

Financial report was distributed. Executive Committee recommendation for constitutional amendment providing an increase in price of publications was adopted. No change to individual members: \$2.00 annual dues will cover one copy each of Proceedings and Forum. Because of increased preparation and printing costs, sales price of Proceedings will now be \$3.00 and Forum 50¢ (issues 1961 and thereafter.)

Due to natural attrition, the list of Corporate Members has been somewhat diminished. Mr. R. A. Work of Portland was appointed Chairman of a membership committee, to be assisted by committee members named by him. Aggressive action is planned to bring the snow conference and its purpose to the attention of those interested in snow hydrology.

Francis Mayo, Chairman of an ad hoc committee (May, Ashton Codd, Oliver Johnson, William Lang) recommended constitutional amendments to provide for a Secretary. The Secretary is to be appointed by the General Chairman (not elected by the conference or executive committee) as an assistant to, and under direction of, the General Chairman (not elected by the conference or executive committee) as an assistant to, and under direction of, the General Chairman. Purpose is to share the administrative load by relieving General Chairman of routine duties. The Executive Committee adopted the report but changed the indefinite term to two year term beginning at close of annual meeting in the odd-numbered years (General Chairman from even-numbered years, providing an overlap of experienced officers). The committee had recommended \$15 per diem allowance to the Secretary for each scheduled day of the annual meeting. A move from the floor to raise this amount received little support. There was discussion of per diem or any payment per day because of possible problems to those already receiving per diem from their employer. The lump sum of fifty dollars per year was adopted. The proposed amendments, distributed in mimeographed form to all present, were approved.

Chairman William Lang of the Resolutions Committee stated that resolutions would be of the usual nature. Resolutions thanking the hosts, local arrangements committee, and the program committee were thus adopted.

R E S O L U T I O N S

Passed by the Western Snow Conference

The Resolutions Committee, namely, William A. Lang, Homer Stockwell, and W. T. Frost, presents the following resolutions and recommend their adoption by the Conference.

1. WHEREAS, members of the Western Snow Conference have thoroughly enjoyed the warm hospitality and the gracious welcome to the City of Spokane and the State of Washington, extended jointly by His Excellency, Governor Albert D. Rosellini and His Honor Mayor Neil Fosseen, and

WHEREAS, this welcome and hospitality has been so ably implemented in all the myriad details of local arrangements by Walter Johnson and his excellent assistants,

NOW THEREFORE BE IT RESOLVED, by the Western Snow Conference, assembled in its 29th annual meeting at Spokane, Washington on April 13, 1961, that an expression of our deep and sincere appreciation be, and herewith is, extended to

His Excellency, Governor Albert D. Rosellini, Mayor
Fosseen, Walter Johnson, Chairman of Local Arrangements,
Robert T. Davis and Mrs. Robert T. Davis

BE IT FURTHER RESOLVED, that suitable copies of this resolution be forwarded to the designated recipients by the General Chairman of the Conference.

2. WHEREAS, the members of the Western Snow Conference have thoroughly enjoyed and profited by the formal and informal activities of the Conferences as so ably conceived and completed for us by the Program Committee,

NOW THEREFORE BE IT RESOLVED, by the members of the Western Snow Conference assembled in their 29th Annual Meeting at Spokane, Washington on April 13, 1961, that a sincere expression of our appreciation be and hereby is extended to Oliver Johnson, Chairman of the Program Committee, and to his assistants, Harry I. Hunter, Wilbur Simons, Melvin Ord and Donald W. Kuehl, and

BE IT FURTHER RESOLVED, that suitable copies of this resolution be forwarded to the designated recipients by the General Chairman of the Conference.

CONSTITUTION AND BY-LAWS

WESTERN SNOW CONFERENCE

Article I - NAME

The name of this organization shall be the "Western Snow Conference."

Article II - PURPOSE

The purpose of the organization shall be to provide an opportunity for individuals and organizations interested in snow and runoff problems from any viewpoint to meet and exchange information for their mutual benefit.

Article III - MEMBERSHIP

There shall be four (4) types of membership:

- (1) Individual - Open to any person having an interest in snow and runoff problems; and
- (2) Corporate-Open to any firm or agency having an interest in snow and runoff problems; and
- (3) Honorary - Open to any person who shall have made a distinct contribution to Western Snow Conference or to the science of snow hydrology and streamflow forecasting. Honorary membership awards shall be recommended by the Awards Committee and shall be subject to unanimous approval by the General Chairman and all four Area Chairmen. Total number of honorary memberships outstanding at any calendar date shall not exceed five (5) in number; and
- (4) Life - Open to any member or former member of the Conference who shall measure up to the following qualifications:
 - (A) Member has attained the age of 60, and
 - (B) Has been active in Western Snow Conference affairs for period of not less than 10 years, and
 - (C) Is retiring from active work in the water supply field, or has transferred from his active position in snow hydrology or water supply forecasting to another position not actively connected with supply work, or
 - (D) Member is a past Executive General Chairman of the Conference.

Life Membership Awards, in form of suitable certificate to be executed by the General Chairman, shall be recommended by the Awards Committee. Election to life membership shall be by affirmative votes of not less than 15 members of the Executive Committee. Announcement of these awards shall be made at annual business meetings.

Total number of life membership awards being actively exercised shall not at any calendar date exceed in number 10 percent of the total dues-paying membership.

Article IV - DUES

All dues shall be payable on a calendar year basis.

Annual dues for Individual Memberships shall be Two Dollars (\$2.00) with Proceedings. All individual members shall be entitled to one copy of the Snow Surveyors' Forum.

Annual dues for Corporate Memberships shall not exceed Fifty Dollars (\$50.00) and shall include copies of the Proceedings and the Snow Surveyors' Forum, but not to exceed one copy of each publication for each Three and 50/100 Dollars (\$3.50) of contribution, or less number as indicated by the particular Corporate Member representative.

Article V - MEETINGS

A business meeting shall be held during the month of April each year. The General Chairman (or any three of the four Area Chairmen) and ten members of the Executive Committee shall constitute a quorum for the transaction of any business of the organization.

A general meeting shall be held for the presentation and discussion of reports and papers concerning the subjects of snow, runoff, and related problems. This meeting shall be held concurrently with the business meeting and shall be open to all members and interested parties.

Annual meetings shall be rotated through the four areas so that all members shall have a chance to attend these meetings with a minimum of travel expense. The location of the next annual meeting shall be designated at the current annual business meeting.

Registration fees for the annual meeting shall be set by the local arrangements committee with the approval of the General Chairman. No registration fee shall be charged to Honorary or Life Members.

Article VI - ADMINISTRATION

The administration of the Conference shall be vested in a General Chairman, Secretary and an Executive Committee of twenty members apportioned among the four areas of the Western States, including Alaska and the adjoining Provinces of Canada.

The General Chairman shall be elected by the Executive Committee at the annual business meeting in even-numbered years. He shall be elected from and remain one of the members of the Executive Committee. If he is also an Area Chairman, that office shall be filled by appointment from among the members of the Executive Committee in that area, with the advice and consent of the incumbent Committee members for said area.

The Area Chairman of the area where the next annual meeting is to be held is hereby designated to succeed to the office of General Chairman for the unexpired term should said office become vacant. This rule shall apply even if the Area Chairman has served a term as General Chairman.

The Secretary shall be appointed by the General Chairman then in office with the consent of not less than two-thirds of the members of the entire Executive Committee.

Article VII - ZONING

For election and assembly purposes, the Western States shall be divided into four areas as follows:

- (1) North Continental Area, comprising Montana, Wyoming, Idaho, Alberta, and the adjacent region to the east.
- (2) South Continental Area, comprising Colorado, Utah, New Mexico, and the adjacent region to the east.
- (3) North Pacific Area, comprising Oregon, Washington, British Columbia, and Alaska.
- (4) South Pacific Area, comprising California, Nevada, and Arizona.

Article VIII - EXECUTIVE COMMITTEE

The total number of members on the Executive Committee shall not exceed twenty, nor shall more than five be chosen from any one area. In the event of an area's having a vacancy for any reason, the General Chairman, with the advice and consent of the incumbent Committee members for said area, may by appointment from within the area fill the vacancy until the next election.

The Secretary shall be entitled to vote with the members of the Executive Committee in passing on the business of the Conference.

Article IX - NOMINATION

Preceding each election for Executive Committee members, the Chairman of each Area Committee shall, with the consent of the majority of members of the concerned Area Committee, name to the General Chairman eight members of the Conference in that area who, together with the others similarly chosen, shall constitute the nominees for the four areas.

Article X - ELECTION

The General Chairman shall place the names of these nominees on a ballot to be sent to all members in good standing for final balloting, and the five from each area who shall receive a plurality of the total votes shall be declared elected. In addition, the person receiving the most votes in each area shall be declared the Chairman of the Executive Committee for that area.

Members shall vote only for nominees in their area. Ballots shall be mailed eight to ten weeks and returned four to six weeks before the date of the annual meeting in even-numbered years.

Article XI - TERM OF OFFICE

An election shall be held once every two years. The number of consecutive two-year terms that any member of the Executive Committee may serve is not limited. The General Chairman shall be limited to one term in office except as provided in Article VI. The terms of office shall begin with the close of the annual meeting in even-numbered years.

The Secretary shall be appointed for a two-year term beginning at the close of the annual meeting in the odd numbered years.

Article XII - PUBLICATIONS

The Executive Committee, at their annual business meeting, shall determine policies regarding all Conference publications, together with their content and distribution.

The Proceedings of the annual meeting shall be published each year. Individual members paying annual dues of Two Dollars (\$2.00) shall be entitled to one free copy, and Corporate members shall be entitled to not to exceed one copy for each Three Dollars (\$3.00) of contribution. Copies shall be available for general sale at Three Dollars (\$3.00) per copy, and such price shall be printed on the fly sheet of the Proceedings.

The Snow Surveyors' Forum shall be published annually in the interest of the field man and shall be distributed free to all members as provided for under Article IV. Extra copies shall be sold at Fifty Cents (50¢) per copy to interested agencies for distribution to their field personnel.

A copy of each publication of the Western Snow Conference shall be mailed free of charge to every Honorary or Life Member.

Article XIII. - DUTIES OF GENERAL CHAIRMAN AND SECRETARY

General Chairman

The General Chairman shall be responsible for the administration of the Conference. He shall appoint such committees as he deems necessary for the successful accomplishment of the Conference aims. All funds of the Conference shall be disbursed by him, and he, together with the Secretary, shall keep an accurate account thereof. He shall provide the Secretary with sufficient funds to conduct the ordinary business of the Conference. The accounts of the Conference shall be audited and reported to the membership at each annual meeting.

The General Chairman shall preside at all meetings and shall be a member ex-officio of all committees. In the absence of the General Chairman, the Chairman of the Executive Committee for the area in which the meeting is held shall preside.

Secretary

The Secretary, under the direction of the General Chairman shall conduct the ordinary business of the Conference, including the keeping of records and the collecting and banking of funds, of which he shall keep an accurate account. The Secretary shall be in attendance at, and shall keep the minutes of, the annual business meeting and the annual general meeting.

Article XIV - REFERENDUMS

A referendum on any proposal may be initiated by the General Chairman, three members of the Executive Committee, or ten members at large. The voting on any question, including removal of officers, shall be conducted by the General Chairman among the eligible voters, except that if the removal of the General Chairman is proposed, the Area Chairman of the area where the last meeting was held shall conduct the voting among members of the Executive Committee. A court consisting of the General Chairman and four Area Chairmen shall consider any dispute on procedure and its decision shall be final.

The Secretary may be removed from office for cause by not less than a two-thirds vote of the entire Executive Committee.

Article XV. - AMENDMENTS

This Constitution and By-Laws may be amended at any regular meeting by an affirmative vote of two thirds of the members present or by a majority vote of all members by a written ballot.

Article XVI - ADOPTION

This Constitution and By-Laws shall become adopted by the affirmative vote of a majority of the members by written ballot of the Western Snow Conference as of November 1, 1953, and shall become effective at the annual meeting in 1954. Balloting shall be conducted by the General Chairman and shall be completed by December 31, 1953. Articles III, IV, and XII were amended at the Twenty-third Annual Meeting held at Portland, Oregon, April, 1955, as shown in the minutes of that meeting. Articles IV, VI, VIII, XI, XII, XIII, XIV were amended and Article XVII added at the Twenty-ninth annual meeting held at Spokane, Washington, April, 1961, as shown in the minutes of that meeting.

Article XVII - PER DIEM

The Secretary shall receive payment in the amount of \$50.00 per year.