

U. S. DEPARTMENT OF AGRICULTURE

FOREST SERVICE

WASATCH NATIONAL FOREST

ALTA AVALANCHE STUDY CENTER

Report No. 101

GUIDE TO COLLECTION OF
REFERENCES, ABSTRACTS, AND
BOOKS ON SNOW AND AVALANCHES

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I. GUIDE TO LIBRARY SEARCH

A large quantity of material has been, and continues to be, published on the subjects of snow and avalanches. Fortunately, almost all contributions from national and international sources can be found in one of the following bibliographies which are available in most large (University) libraries:

1. *Bibliography on Cold Regions Science and Technology*. Report 12, Part I and Part II. Published annually by: U.S. Army Cold Regions Research and Engineering Lab., Hanover, N.H. 03755.
2. *Meteorological and Geoastrophysical Abstracts*. Monthly publication of: Amer. Meteorological Soc., 45 Beacon St., Boston, Mass. 02108.
3. *Glaciological Notes*. Quarterly publication of: World Data A, U.S. Geological Survey, 1305 Tacoma Ave. S., Tacoma, Wash. 98402.
4. *Glaciological Literature*. Journal of Glaciology, c/o Scott Polar Research Institute, Cambridge CB₂ 1ER, England.

The important *Bibliography on Cold Regions Science and Technology* has had a history which is best explained by quoting from the introduction to the July 1970 report, Volume XXIV:

"The *Bibliography on Cold Regions Science and Technology*, CRREL Report 12, was first published in 1951 and is a continuing publication of the Cold Regions Bibliography Section in the Science and Technology Division of the Library of Congress. It is sponsored by and prepared for the Cold Regions Research and Engineering Laboratory (formerly for the Snow, Ice and Permafrost Research Establishment) of the U.S. Army Corps of Engineers. Volumes 1-15 were issued as the *Bibliography on Snow, Ice and Permafrost*, SIPRE Report 12. Beginning with volume 16 the designation was changed to CRREL Report 12. With volume 20 the title was changed to *Bibliography on Snow, Ice and Frozen Ground, with Abstracts*, and with volume 23 the current title was adopted."

The interested reader who obtains the items listed under III, A Basic Library of Recent English Works (page 5 of this guide), will discover many additional bibliographical lists, and thus will have an excellent entry into the snow and avalanche literature. In particular, the *Bibliography on Cold Regions Science and Technology* was searched in 1956, 1964, and 1966, and a compilation issued as (see Wasatch National Forest, page 6): *Bibliography of avalanche literature, 1956; Supplement, 1964; Selected Bibliography, 1966*.

An excellent bibliographical list is presented on pages 182-190 of the monograph, *Avalanches*, by Malcolm Mellor (see U.S. Army CRREL, page 5).

II. RECENT ENTRIES IN METEOROLOGICAL AND GEOASTROPHYSICAL ABSTRACTS

Because the great proliferation of publications has struck the snow and avalanche field, it has become essential to work first with abstracts, and then, if more detail is required, to consult the original paper. Thorough abstracts can be found in the *METEOROLOGICAL AND GEOASTROPHYSICAL ABSTRACTS*, a monthly publication that began in 1950 (Volume 1). For the average person, the cost of subscription to this publication is prohibitively high, but the *ABSTRACTS* can be found in all University libraries. The following entries are of interest:

note: 18.7-534 means Volume 18, July, entry no. 534.

17.1-374	snow cover properties	18.7-534	aval. distribution and formation
17.1-377	aval. mechanics	18.7-535	aval. control
17.2-4	aval. general	18.7-536	aval. control
17.2-312	aval. mechanics, forecasting	18.7-537	aval. effects on glaciers
17.5-200	radiation effects on snow, aval.	18.7-538	aval. meteorology, volume
17.6-417	depth hoar	18.9-449	snow cover studies
17.6-418	aval. mechanics	18.9-454	snow density, mtn. slopes
17.11-427	aval. magnitude, damage	18.10-503	afforestation
<hr/>		18.11-418	properties of alpine snow
		18.11-419	mt. snow cover
		18.11-423	heat transfer in snow
		18.11-424	heat transfer in snow
		18.11-425	aval. movement, control
<hr/>		<hr/>	
18.1-10	aval. mechanics, forecasting	19.3-304	snowline variations, aval. research
18.1-348	aval. research	19.3-305	snow strength meas., aval. mechanics
18.1-349	aval. forecasting	19.3-307	snow cover pressure
18.5-337	aval. research	19.3-308	snow cover stress
18.6-82	aval. movement calcu- lations	19.3-311	snow cover properties
18.6-464	snow creep	19.3-314	snow density variations, aval. danger
18.6-465	aval. mechanics, frequencies	19.3-315	snow metamorphism
18.6-467	aval. mechanics, movement, frequencies	19.3-316	optical prop. of snow
18.6-468	aval. mechanics, movement	19.3-319	snow strength
18.6-469	aval. forecasting	19.3-320	aval. classification
18.7-516	snow, aval. conference	19.3-321	aval. meteorology
18.7-519	snow density variations	19.3-322	thermal prop. snow, aval. mech.
18.7-521	heat exchange in snow	19.3-323	depth hoar control
18.7-522	snow mechanics	19.3-324	snow sintering
18.7-525	snow metamorphism	19.3-326	wind drift, avalanche formation
18.7-526	snow creep		
18.7-528	aval. mech., snow strength		
18.7-530	pressure waves in snow		
18.7-531	aval. control, snowdrift control		

19.3-328	aval. hydrology	19.11-468	aval. danger
19.3-329	aval. geomorphology	19.11-469	aval. protection
19.3-330	aval. hydrology	19.11-470	aval. maps
19.3-331	aval. forecasting	19.11-471	aval. volume, impact
19.3-332	aval. classification	19.12-381	snow metamorphism, depth hoar
19.3-333	aval. classification	19.12-385	snow crystal analysis
19.3-335	aval. classification	19.12-399	snow surface forms
19.3-336	slush aval.	19.12-401	snow mechanics
19.3-337	aval. meteorology	19.12-403	snow creep
19.3-338	aval. formation	19.12-404	aval. forecasting
19.3-339	snow creep and glide	19.12-405	acoustical prop. of snow, aval.
19.3-340	aval. mechanics	19.12-407	snow creep
19.3-341	aval. meteorology	19.12-409	snow cover disasters
19.3-342	aval. meteorology	19.12-411	thermal prop. snow
19.3-343	aval. dynamics	19.12-412	snow mechanics
19.3-344	aval. dynamics, classification	19.12-414	snow stress
19.3-345	aval. forecasting	19.12-416	heat balance of snow
19.3-346	aval. forecasting	19.12-417	snow compaction, densifi- cation
19.3-347	ice aval. disaster	19.12-418	snow compaction, densifi- cation
19.4-353	snow measurements, aval.		
19.4-354	snow density, strength		
19.4-355	snow metamorphism		
19.4-357	aval. control		
19.4-358	aval. classification	20.1-363	snow crystal replicas
19.4-359	aval. classification	20.1-364	snow properties, mechanics
19.5-323	snowfall rates, crystal analysis	20.1-367	snow mechanics, strength
19.5-327	aval. caused by earth- quakes	20.1-374	depth hoar
19.5-328	aval. zoning	20.1-375	snowdrifts, wind profiles
19.5-329	aval. photogrammetry	20.1-376	snowdrifts, transport
19.5-330	aval. mechanics	20.1-377	snowdrifts, transport
19.5-331	wet aval. formation	20.1-378	snow transport
19.5-332	aval. mechanics	20.1-380	wind, aval. forecasting
19.6-9	snow prop., aval.	20.1-381	aval. effects on glaciers
19.6-400	aval. meteorology	20.1-382	aval. movement, velocities, force
19.6-422	aval. prevention	20.1-383	aval. volume, magnitude
19.6-423	aval. prevention, terracing	20.1-384	aval. magnitude
19.6-424	mudflow, aval.	20.1-385	aerial aval. surveys
19.10-442	aval. formation, forecasting	20.1-386	aval. maps
19.10-443	aval. classification, formation, volume	20.1-387	aval. classification
19.10-444	aval. dynamics	20.1-388	aval. formation, mechanics
19.10-445	aval. forecasting	20.1-389	aval. mechanics, damage, impact force
19.10-446	aval. forecasting	20.1-390	aval. mechanics
19.11-467	snow hardness, aval. mechanics	20.1-391	vegetation effects on ava- lanches
		20.1-392	snow riming, aval. formation
		20.1-393	aval. mech.

20.1-394	aval. forecasting	20.10-52	aval. formation
20.2-156	aval. forecasting, aval. volume	20.10-418	snow mechanics
20.2-422	snow properties, strength	20.10-420	snow metamorphism
20.2-423	mtn. snowpack	20.10-422	aval. control
20.2-426	snow loads		
20.2-427	heat transfer in snow	21.1-633	aval. disasters
20.2-428	properties of alpine snow	21.1-634	aval. mech., depositions
20.2-429	acoustical prop. of snow	21.5-184	aval. meteorology, forecasting
20.2-431	snow mechanics	21.5-631	snow properties
20.2-437	aval. impact force	21.5-632	snow strength
20.2-438	aval. mechanics, velocities	21.5-636	aval. effects on forests
20.2-439	aval. meteorology, terrain, volume	21.5-637	aval. mech.
20.3-472	snow metamorphism	21.7-627	alpine snow properties
20.3-473	aval. photogrammetry, velocities	21.7-637	aval. formation
20.3-474	aval. impact force	21.9-327	snow cover stress
20.3-475	aval. zoning	21.9-330	aval. movement, velocities
20.3-476	aval. formation, effects	21.9-331	aval. effects on forests
20.3-477	aval. forecasting	21.9-332	aval. effects on forests
20.3-774	aval. effects on rivers	21.9-333	aval. meteorology
20.4-466	snow mechanics, explosions on snow	21.9-342	snow, melt-water infiltration
20.4-469	snow mechanics, aval. forecasting	21.9-343	snow, melt-water infiltration
20.4-473	snow metamorphism	21.10-403	snow settling, temp.
20.4-476	aval. formation, wind velocity	21.11-394	heavy snowfall - aval.
20.4-477	air temperature, aval.	21.11-404	snow metamorphism
20.4-478	aval. formation, wind, drifting	21.11-405	aval. protection, control
20.5-4	aval. general	21.11-406	aval. danger, formation
20.5-471	aval. formation, fore- casting	21.11-407	aval. forecasting, control
20.5-472	aval. maps	21.11-408	aval. formation, prevention
20.7-417	snow loads on trees	21.11-409	aval. meteorology, zoning
20.7-419	forest clearings - aval.	21.11-410	aval. mechanics
20.7-420	slab aval. features	21.11-411	aval. formation
20.8-461	snow strength measurements	21.11-412	aval. formation, radiation
20.8-462	aval. damage	21.11-413	aval. forecasting
20.9-473	snow crystal formation	21.11-414	aval. forecasting
20.9-484	snow cover studies		
20.9-487	snow structure, aval. formation	22.1-444	aval. meteorology
20.9-489	snowdrift, transport	22.1-445	aval. formation
20.9-493	snow metamorphosis	22.2-537	aval. control, effects on forests
20.9-495	aval. freq. magnitude	22.2-538	aval. formation, mechanics
20.9-496	aval. formation, mechanics	22.3-550	snow and aval. properties
20.10-4	aval. Western Hemisphere	22.3-557	aval. geomorphology
		22.5-294	snow cover surveys
		22.9-396	snow, aval. terminology
		22.9-399	aval. dynamics
		22.9-405	snow density - grain size
		22.9-406	snow compaction
		22.9-407	snow compaction

III. A BASIC LIBRARY OF RECENT ENGLISH WORKS

While it is virtually impossible to obtain a collection of all that has been written on snow and avalanches, nevertheless, it is desirable for avalanche workers to have a basic library at their disposal. The following books and monographs are a suggested initial collection:

U.S. Army C.R.R.E.L.
Hanover, N.H. 03755

Snow and its metamorphism, Translation 14, 315 p., 1954 (H. Bader and others).

Properties of snow, Cold Regions Sci. Eng. III-A1, 105 p., 1964, (M. Mellor).

Explosions and snow, Cold Regions Sci. Eng. III-A3a, 34 p., 1965, (M. Mellor).

Blowing snow, Cold Regions Sci. Eng. III-A3c, 79 p., 1965, (M. Mellor).

Avalanches, Cold Regions Sci. Eng. III-A3d, 215 p., 1968, (M. Mellor).

Some physical properties of alpine snow, Res. Rept. 271, 67 p., 1969, (C. Keeler).

U.S.D.A.-U.S.F.S.
Rocky Mtn. Forest and Range Exp. Sta.
240 West Prospect Street
Fort Collins, Colorado 80521

The weather and climate on a high mountain pass in the Colorado Rockies, Res. Pap. RM-16, 28 p., 1965, (A. Judson).

A manual for planning structural control of avalanches, Res. Pap. RM-19, 68 p., 1966 (H. Frutiger, and M. Martinelli, Jr.).

A classification outline for snow on the ground, Res. Pap. RM-48, 24 p., 1969, (R. Sommerfeld).

Artillery control of avalanches along mountain highways, Res. Pap. RM-61, 26 p., 1970, (N. Gardner and A. Judson).

Physical properties of alpine snow as related to weather and avalanche conditions, Res. Pap. RM-64, 35 p., 1971, (M. Martinelli, Jr.).

Wasatch National Forest
4311 Federal Building
125 South State Street
Salt Lake City, Utah 84111

Bibliography of avalanche literature, 1956; Supplement, 1964;
Selected bibliography, 1966; 34 p., (E. LaChapelle).

The snowy torrents-avalanche accidents in the U.S. 1910-1966,
144 p., 1967, (D. Gallagher, ed.).

Meteorological classification of natural snow crystals, J. Fac.
Sci., Hokkaido, Ser. VII, Vol. 2, No. 4, reprinted by the Wasatch
Nat. For., 46 p., 1968, (C. Magono and C. Lee).

Modern avalanche rescue, Snow safety guide no. 1., 95 p., 1968,
(R. Perla, ed.).

Instrumentation for snow, weather, and avalanche observations,
Snow safety guide no. 2, 80 p., 1970, (E. LaChapelle, ed.).

The avalanche zoning plan, Translation no. 11, 24 p., 1970, (H.
Frutiger).

The slab avalanche, Rept. 100, 101 p., 1971, (R. Perla).

Snow and Ice Subcommittee
National Research Council
Ottawa 7, Canada

Avalanches and avalanche defense, Translation of 17 Russian articles,
Transl. no. 1383, 162 p., 1969.

Ice engineering and avalanche forecasting and control, Technical
Memorandum No. 98, 163 p., 1970, (L. Gold and G. Williams, eds.).

Inst. of Low Temp. Sci.
Hokkaido Univ.
Sapporo, Japan

Physics of snow and ice, Volume 1, Part 2, 701 p., 1967, (H. Oura,
ed.).

Water Resources Research Inst.
Oregon State Univ.
Corvallis, Oregon 97331

Snow, proceedings of a seminar, 130 p., 1969.

Vanni Eigenmann Foundation
Casella Postale 1693
Milano, Italy

Report of the activites Jan. 1963-June 1970, 27 p., (English translation).

International Assoc. Sci. Hydrology
Braamstraat 61
Gentbrugge, Belgium

Intern. sympos. on scientific aspects of snow and ice avalanches, I.A.S.H. Publ. No. 69, 424 p., 1966.

Supt. Documents
U.S. Govt. Printing Office
Washington, D.C. 20402

Snow avalanches: a handbook of forecasting and control measures, Agriculture Hdbk. No. 194, 84 p., 1968, (new edition in preparation).

Local E.I. Dupont Representative

The Blasters' handbook, 525 p., 1969 (rev. 1970).

Local Bookstore

The avalanche hunters, Macrae Smith Co., 235 p., 1968, (M.M. Atwater).

Avalanche enigma, Rand McNally, 301 p., 1966, (C. Fraser).

Ice and snow, The M.I.T. Press, 684 p., 1963, (W. Kingery, ed.).

Field guide to snow crystals, Univ. Wash. Press, 101 p., 1969, (E. LaChapelle).

Manual of ski mountaineering, Sierra Club, 236 p., 1969, (D. Brower, ed.).

Mountain rescue techniques, The Mountaineers, 200 p., 1963, (W. Mariner).

Mountaineering the freedom of the hills, The Mountaineers, 485 p., 1967, (H. Manning, ed.).

Avalanche, Knopf, 253 p., 1958, (J. Wechsberg).

National Ski Patrol System, Inc.
2901 Sheridan Blvd.
Denver, Colorado 80214

Tracks and banner, Snow and avalanche periodical, issued quarterly,
(W. Hotchkiss, ed.).

Local Climbing Shop or
Outdoor Sports Company
5450 N. Valley Highway
Denver, Colorado 80216

The ABC of avalanche safety, a paperback for library and rucksack,
56 p., 1970, (E. LaChapelle).