

A. GENERAL INFORMATION

NOTES ON THE COMPLETION OF THE DATA SHEET

A1. POLITICAL UNIT

Name of country or territory in which glacier is located (For 2 digit abbreviations, see ISO 3166 country code, available at www.iso.org).

Political unit is part of WGI key (positions 1 and 2).

Political unit is part of FoG and MBB key (positions 1 and 2).

A2. WGMS ID

5 digit key identifying glacier in the WGMS data base.

A3. GLACIER NAME

The name of the glacier, written in CAPITAL letters.

Format; Max. 30 column positions.

If necessary, the name can be abbreviated; in this case, please give the full name under "A16. REMARKS".

A4. HYDROLOGICAL CATCHMENT AREA

Part of WGI key: Position 3 denotes the continent. Positions 4 to 7 denote the drainage basin.

A5. FREE POSITION

Part of WGI number: Positions 8 and 9 are freely chosen identification numbers.

A6. LOCAL CODE

Part of WGI number: Positions 10 to 12

A7. LOCAL PSFG

The local PSFG number is part of FoG and MBB key (positions 3 to 7).

It consists of 4 or, as an exception, 5 numerical digits. Empty spaces should be filled with the digit 0.

A8. GEOGRAPHICAL LOCATION (GENERAL)

Refers to a very large geographical entity (e.g. a large mountain range or large political subdivision) which gives a rough idea of the location of the glacier, without requiring the use of a map or an atlas.

Format; max. 30 positions.

Examples; Western Alps, Southern Norway, Polar Ural, Tien Shan, Himalayas.

A9. GEOGRAPHICAL LOCATION (SPECIFIC)

Refers to a more specific geographical location (e.g. mountain group, drainage basin), which can easily be found on a small scale map of the country concerned.

Format; max. 30 positions.

A10. LATITUDE

The geographical coordinates should refer to a point in the upper ablation area; for small glaciers, this point may lie outside the glacier.

Latitude should be given in decimal degrees, positive values indicating the northern hemisphere and negative values indicating the southern hemisphere.

Latitude should be given to a maximum accuracy of 4 decimal places.

A12.2 FORM – Digit 2

0	Miscellaneous	Any type not listed below (please explain)
1	Compound basins	Two or more individual valley glaciers issuing from tributary valleys and coalescing (Fig. 1a)
2	Compound basin	Two or more individual accumulation basins feeding one glacier system (Fig. 1b)
3	Simple basin	Single accumulation area (Fig. 1c)
4	Cirque	Occupies a separate, rounded, steep-walled recess which it has formed on a mountain side (Fig. 1d)
5	Niche	Small glacier in a V-shaped gully or depression on a mountain slope (Fig. 1e); generally more common than genetically further developed cirque glacier.
6	Crater	Occuring in extinct or dormant volcanic craters
7	Ice apron	Irregular, usually thin ice mass which adheres to mountain slope or ridge
8	Group	A number of similar ice masses occuring in close proximity and too small to be assessed individually
9	Remnant	Inactive, usually small ice masses left by a receding glacier



1a



1b



1c



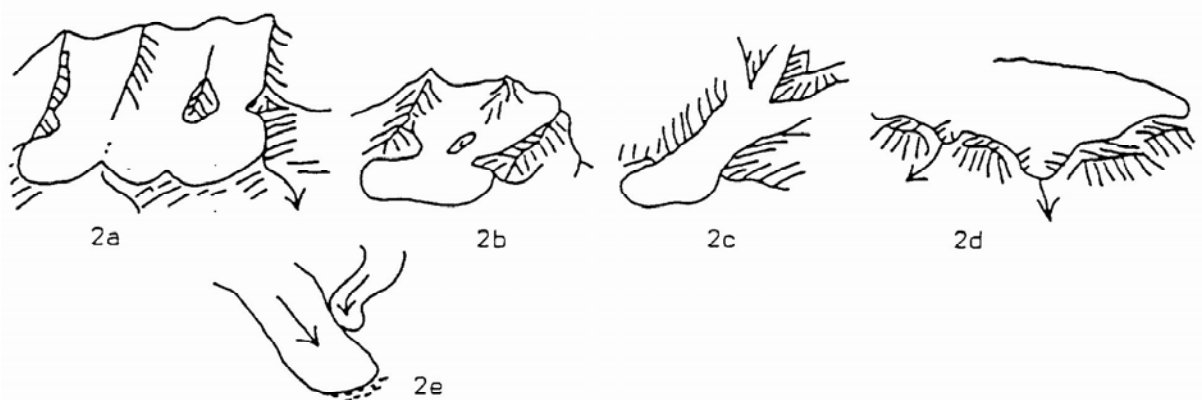
1d



1e

A12.3 FRONTAL CHARACTERISTICS – Digit 3

- | | | |
|---|---|---|
| 0 | Miscellaneous | Any type not listed below (please explain) |
| 1 | Piedmont | Icefield formed on a lowland area by lateral expansion of one or coalescence of several glaciers (Fig. 2a, 2b) |
| 2 | Expanded foot | Lobe or fan formed where the lower portion of the glacier leaves the confining wall of a valley and extends on to a less restricted and more level surface (Fig. 2c) |
| 3 | Lobed | Part of an ice sheet or ice cap, disqualified as an outlet glacier (Fig. 2d) |
| 4 | Calving | Terminus of a glacier sufficiently extending into sea or lake water to produce icebergs; includes- for this inventory- dry land ice calving which would be recognisable from the “lowest glacier elevation” |
| 5 | Coalescing, non-contributing (Fig. 2e) | |
| 6 | Irregular, mainly clean ice (mountain or valley glaciers) | |
| 7 | Irregular, debris-covered (mountain or valley glaciers) | |
| 8 | Single lobe, mainly clean ice (mountain or valley glaciers) | |
| 9 | Single lobe, debris-covered (mountain or valley glaciers) | |



A13. EXPOSITION OF ACCUMULATION AREA

The main orientation of the accumulation area using the 8 cardinal points (8-point compass).

A14. EXPOSITION OF ABLATION AREA

The main orientation of the ablation area using the 8 cardinal points (8-point compass).

A15. PARENT GLACIER

Links separated glacier parts with former parent glacier, using WGMS ID (see “A2. WGMS ID”).

A16. REMARKS

Any important information or comments not included above may be given here. Comments about the accuracy of the numerical data may be made, including quantitative comments. Only significant decimals should be given.

B. STATE

NOTES ON THE COMPLETION OF THE DATA SHEET

B1. POLITICAL UNIT

Name of country or territory in which glacier is located (cf. "A1. POLITICAL UNIT").

B2. WGMS ID

5 digit key identifying glacier in the WGMS data base (cf. "A2. WGMS ID").

B3. GLACIER NAME

The name of the glacier, written in CAPITAL letters. Use the same spelling as in "A3. GLACIER NAME").

B4. YEAR

Year of present survey.

B5. MAXIMUM ELEVATION OF GLACIER

Altitude of the highest point of the glacier.

B6. MEDIAN ELEVATION OF GLACIER

Altitude of the contour line which halves the area of the glacier.

B7. MINIMUM ELEVATION OF GLACIER

Altitude of the lowest point of the glacier.

B8. ELEVATION ACCURACY

Estimated maximum error of reported elevations.

B9. LENGTH

Maximum length of glacier measured along the most important flowline (in horizontal projection).

B10. LENGTH ACCURACY

Estimated maximum error, in length.

B11. SURVEY DATE

Date of present survey.

For each survey, please indicate the complete date (day, month, year).

Missing data : For unknown day or month, put "01" in the corresponding position(s) and make a corresponding note under "B15. REMARKS"

B12. SURVEY METHOD

The survey method should be given using the following alphabetic code:

A = Aerial photography

B = Terrestrial photogrammetry

C = Geodetic ground survey (theodolite, tape etc.)

D = Combination of a, b or c (please explain under "B15. REMARKS")

E = Other methods (please explain under "B15. REMARKS")

B13. INVESTIGATOR

Name(s) of the person(s) or agency doing the field work and / or the name(s) of the person(s) or agency processing the data.

B14. SPONSORING AGENCY

Full name, abbreviation and address of the agency where the data are held.

B15. REMARKS

Any important information or comments not included above may be given here. Comments about the accuracy of the numerical data may be made, including quantitative comments. Only significant decimals should be given.

C. FRONT VARIATION

NOTES ON THE COMPLETION OF THE DATA SHEET

C1. POLITICAL UNIT

Name of country or territory in which glacier is located (cf. "A1. POLITICAL UNIT").

C2. WGMS ID

5 digit key identifying glacier in the WGMS data base (cf. "A2. WGMS ID").

C3. GLACIER NAME

The name of the glacier, written in CAPITAL letters. Use the same spelling as in "A3. GLACIER NAME").

C4. YEAR

Year of present survey.

C5. FRONT VARIATION

Variation in the position of the glacier front (in horizontal projection) between the previous and present survey.

Signs: + Advance

- Retreat

C6. FRONT VARIATION ACCURACY

Estimated maximum error for front variation.

C7. QUALITATIVE VARIATION

If no quantitative data are available for a particular year, but qualitative data are available, then the front variation should be denoted using the following symbols. They should be positioned in the far left of the data field.

+X : Glacier in advance

-X : Glacier in retreat

ST : Glacier stationary

SN : Glacier front covered by snow making survey impossible.

Qualitative variations will be understood with reference to the previous survey data, whether this data is qualitative or quantitative.

C8. SURVEY DATE

Date of present survey

For each survey, please indicate the complete date (day, month, year).

Missing data : For unknown day or month, put "01" in the corresponding position(s) and make a corresponding note under "C13. REMARKS"

C9. SURVEY METHOD

The survey method should be given using the following alphabetic code:

A = Aerial photography

B = Terrestrial photogrammetry

C = Geodetic ground survey (theodolite, tape etc.)

D = Combination of a, b or c (please explain under "C13. REMARKS")

E = Other methods (please explain under "C13. REMARKS")

C10. REFERENCE DATE

Date of previous survey

For each survey, please indicate the complete date (day, month, year).

Missing data : For unknown day or month, put "01" in the corresponding position(s) and make a corresponding note under "C13. REMARKS"

C11. INVESTIGATOR

Name(s) of the person(s) or agency doing the field work and / or the name(s) of the person(s) or agency processing the data.

C12. SPONSORING AGENCY

Full name, abbreviation and address of the agency where the data are held.

C13. REMARKS

Any important information or comments not included above may be given here. Comments about the accuracy of the numerical data may be made, including quantitative comments.

Only significant decimals should be given.

D. SECTION

NOTES ON THE COMPLETION OF THE DATA SHEET

D1. POLITICAL UNIT

Name of country or territory in which glacier is located (cf. "A1. POLITICAL UNIT").

D2. WGMS ID

5 digit key identifying glacier in the WGMS data base (cf. "A2. WGMS ID").

D3. GLACIER NAME

The name of the glacier, written in CAPITAL letters. Use the same spelling as in "A3. GLACIER NAME").

D4. YEAR

Year of present survey.

D5. LOWER BOUNDARY

Lower boundary of altitude interval.

If refers to entire glacier, then lower bound = 9999.

D6. UPPER BOUNDARY

Upper boundary of altitude interval

If refers to entire glacier, then upper bound = 9999.

D7. AREA

Area of each altitude interval (in horizontal projection).

D8. AREA CHANGE

Area change for each altitude interval.

D9. AREA CHANGE ACCURACY

Estimated maximum error for area change.

D10. THICKNESS CHANGE

Thickness change for each altitude interval.

D11. THICKNESS CHANGE ACCURACY

Estimated maximum error for thickness change.

D12. VOLUME CHANGE

Volume change for each altitude interval.

D13. VOLUME CHANGE ACCURACY

Estimated maximum error for volume change.

D14. SURVEY DATE

Date of present survey

For each survey, please indicate the complete date (day, month, year).

Missing data : For unknown day or month, put "01" in the corresponding position(s) and make a corresponding note under "D19. REMARKS"

D15. SURVEY METHOD

The survey method should be given using the following alphabetic code:

A = Aerial photography

B = Terrestrial photogrammetry

C = Geodetic ground survey (theodolite, tape etc.)

D = Combination of a, b or c (please explain under "D19. REMARKS")

E = Other methods (e.g., LIDAR, RADAR, map comparison; please explain and add at least one reference under "D19. REMARKS")

D16. REFERENCE DATE

Date of previous survey.

For each survey, please indicate the complete date (day, month, year).

Missing data : For unknown day or month, put "01" in the corresponding position(s) and make a corresponding note under "D19. REMARKS"

D17. INVESTIGATOR

Name(s) of the person(s) or agency doing the field work and / or the name(s) of the person(s) or agency processing the data.

D18. SPONSORING AGENCY

Full name, abbreviation and address of the agency where the data are held.

D19. REMARKS

Any important information or comments not included above may be given here. Comments about the accuracy of the numerical data may be made, including quantitative comments.

Only significant decimals should be given.

E. MASS BALANCE OVERVIEW

NOTES ON THE COMPLETION OF THE DATA SHEET

E1. POLITICAL UNIT

Name of country or territory in which glacier is located (cf. "A1. POLITICAL UNIT").

E2. WGMS ID

5 digit key identifying glacier in the WGMS data base (cf. "A2. WGMS ID").

E3. GLACIER NAME

The name of the glacier, written in CAPITAL letters. Use the same spelling as in "A3. GLACIER NAME").

E4. YEAR

Year of present survey.

E5. TIME MEASUREMENT SYSTEM

The time measurement system should be given using the following 3 digit alphabetic code:

STR = Stratigraphic system

FXD = Fixed data system

COM = Combined system

OTH = Other (please explain under "E22. REMARKS")

E6. BEGINNING OF SURVEY PERIOD

Date on which survey period began.

For each survey, please give the complete date (day, month, year).

Missing data : For unknown day or month, put "01" in the corresponding position(s) and make a corresponding note under "E22. REMARKS"

E7. END OF WINTER SEASON

Date of end of winter season (Day, month, year, if known).

Missing data : For unknown day or month, put "01" in the corresponding position(s) and make a corresponding note under "E22. REMARKS"

E8. END OF SURVEY PERIOD

Date on which survey period ended.

For each survey, please give the complete date (day, month, year).

Missing data : For unknown day or month, put "01" in the corresponding position(s) and make a corresponding note under "E22. REMARKS"

E9. EQUILIBRIUM LINE ALTITUDE (ELA)

Mean altitude (averaged over the glacier) of the equilibrium line / annual equilibrium line.

E10. EQUILIBRIUM LINE ALTITUDE ACCURACY

Estimated maximum error of ELA.

E11. MINIMUM NUMBER OF MEASUREMENT SITES USED IN ACCUMULATION AREA

The minimum number of different sites at which measurements were taken in the accumulation area. Repeat measurements may be taken for one site, in order to obtain an average value for that site, but the site is still only counted once.

E12. MAXIMUM NUMBER OF MEASUREMENT SITES USED IN ACCUMULATION AREA

The maximum number of different sites at which measurements were taken in the accumulation area. Repeat measurements may be taken for one site, in order to obtain an average value for that site, but the site is still only counted once.

E13. MINIMUM NUMBER OF MEASUREMENT SITES USED IN ABLATION AREA

The minimum number of different sites at which measurements were taken in the ablation area. Repeat measurements may be taken for one site, in order to obtain an average value for that site, but the site is still only counted once.

E14. MAXIMUM NUMBER OF MEASUREMENT SITES USED IN ABLATION AREA

The maximum number of different sites at which measurements were taken in the ablation area. Repeat measurements may be taken for one site, in order to obtain an average value for that site, but the site is still only counted once.

E15. ACCUMULATION AREA

Accumulation area in horizontal projection.

E16. ACCUMULATION AREA ACCURACY

Estimated maximum error for accumulation area.

E17. ABLATION AREA

Ablation area in horizontal projection.

E18. ABLATION AREA ACCURACY

Estimated maximum error for ablation area.

E19. ACCUMULATION AREA RATIO

Accumulation area divided by the total area, multiplied by 100. Given in percent.

E20. INVESTIGATOR

Name(s) of the person(s) or agency doing the field work and / or the name(s) of the person(s) or agency processing the data.

E21. SPONSORING AGENCY

Full name, abbreviation and address of the agency where the data are held.

E22. REMARKS

Any important information or comments not included above may be given here. Comments about the accuracy of the numerical data may be made, including quantitative comments. Only significant decimals should be given.

F. MASS BALANCE

NOTES ON THE COMPLETION OF THE DATA SHEET

F1. POLITICAL UNIT

Name of country or territory in which glacier is located (cf. "A1. POLITICAL UNIT").

F2. WGMS ID

5 digit key identifying glacier in the WGMS data base (cf. "A2. WGMS ID").

F3. GLACIER NAME

The name of the glacier, written in CAPITAL letters. Use the same spelling as in "A3. GLACIER NAME").

F4. YEAR

Year of present survey.

F5. LOWER BOUNDARY OF ALTITUDE INTERVAL

If refers to entire glacier, then lower bound = 9999.

F6. UPPER BOUNDARY OF ALTITUDE INTERVAL

If refers to entire glacier, then lower bound = 9999.

F7. ALTITUDE INTERVAL AREA

Area of each altitude interval (in horizontal projection).

F8. SPECIFIC WINTER BALANCE

Specific means the total value divided by the total glacier area under investigation.
Specific winter balance equals the net winter balance divided by the total area of the glacier.

F9. SPECIFIC WINTER BALANCE ACCURACY

Estimated maximum error for specific winter balance.

F10. SPECIFIC SUMMER BALANCE

Specific means the total value divided by the total glacier area, in this case, it is the net summer balance divided by the total area of the glacier.

F11. SPECIFIC SUMMER BALANCE ACCURACY

Estimated maximum error for specific winter balance.

F12. SPECIFIC NET BALANCE

Net balance of glacier divided by the area of the glacier.

F13. SPECIFIC NET BALANCE ACCURACY

Estimated maximum error for specific net balance.

F14. INVESTIGATOR

Name(s) of the person(s) or agency doing the field work and / or the name(s) of the person(s) or agency processing the data.

F15. SPONSORING AGENCY

Full name, abbreviation and address of the agency where the data are held.

F16. REMARKS

Any important information or comments not included above may be given here. Comments about the accuracy of the numerical data may be made, including quantitative comments. Only significant decimals should be given.

G.SPECIAL EVENT

NOTES ON COMPLETION OF THE DATA SHEET

This data sheet should be completed in cases of extraordinary events, especially concerning glacier hazards and dramatic changes of glaciers.

G1. POLITICAL UNIT

Name of country or territory in which glacier is located (cf. "A1. POLITICAL UNIT").

G2. WGMS ID

5 digit key identifying glacier in the WGMS data base (cf. "A2. WGMS ID").

G3. GLACIER NAME

The name of the glacier, written in CAPITAL letters. Use the same spelling as in "A3. GLACIER NAME").

G4. EVENT DATE

Date of event.

For events lasting for several days, please indicate the date of the main event, and describe the sequence of the event under "G6. EVENT DESCRIPTION."

G5. EVENT TYPE

Indicate the involved event type(s) using 1 = event type involved and 0 = event type not involved for the following event types:

G5.1 GLACIER SURGE

G5.2 CALVING INSTABILITY

G5.3 GLACIER FLOOD (including debris flow, mudflow)

G5.4 ICE AVALANCHE

G5.5 TECTONIC EVENT (earthquake, volcanic eruption)

G5.6 OTHER

G6. EVENT DESCRIPTION

Please give quantitative information wherever possible, for example:

- Glacier surge: Date and location of onset, duration, flow or advance velocities, discharge anomalies and periodicity;
- Calving instability: Rate of retreat, iceberg discharge, ice flow velocity and water depth at calving front;
- Glacier flood (including debris flow, mudflow): Outburst volume, outburst mechanism, peak discharge, sediment load, reach and propagation velocity of flood wave or front of debris flow / mudflow;
- Ice avalanche: Volume released, runout distance, overall slope of avalanche path;
- Tectonic event: Volumes, runout distances and overall slopes of rock slides on glacier surfaces, amount of geothermal melting in craters, etc.

G7. DATA SOURCE

Please indicate at least one reference or source which could help the reader to locate more detailed information, or give the name(s) of contact person(s) who would be able to supply additional information.

G8. REMARKS

Any important information or comments not included above may be given here. Comments about the accuracy of the numerical data may be made, including quantitative comments. Only significant decimals should be given.

The amount and/ or kind of possible destruction, particular technical measures taken against glacier hazards, or special studies carried out in connection with the event may be given.