

CREATING STANDARDIZED NON-VERBAL COMMUNICATIONS FOR GUIDES

Shena Thomas^{1,2,3*}, Iain Stewart-Patterson^{3,4}

1 Mountain Stash Adventures, Revelstoke, BC, Canada

2 Soul Rides, Revelstoke, BC, Canada

3 Canadian Motorized Backcountry Guides Association, Revelstoke, BC, Canada

4 Thompson Rivers University, Kamloops, BC, Canada

ABSTRACT: Effective communication is critical in winter backcountry guiding, as it is often a dynamic and high-risk environment. Current communication best practices focus on prerequisite training, pre-trip briefings, radio communication, and informal hand signals. However, these processes are not fail-safe and desired communication messages can be lost. For example, clients may not retain pre-trip instructions in high-excitement situations, radios may not function correctly, environmental “noise” such as wind, precipitation, rotor wash, machine exhaust, or simply distance can hinder verbal communication. Unlike winter backcountry guiding, other high-risk industries such as aviation, SCUBA diving, and whitewater paddling utilize standardized non-verbal communication systems and signals that are universally taught and recognized. This allows for consistent and reliable communication across personnel, teams, operations, and geographic regions. Observations of heli ski, cat ski, ski touring, and motorized backcountry guiding operations and associations in Western Canada have highlighted a lack of standardized hand and body non-verbal communication. This gap is a crucial missing element to the task of optimizing the client experience in winter backcountry travel. To explore this gap, surveys, observations, and conversations have been conducted within all four winter guiding disciplines. Based on the findings, this project proposes a framework for standardized non-verbal communication in motorized backcountry guiding that can be incorporated into the CMBGA training and certification program. The framework includes a set of core hand and body signals designed for clarity, repeatability, and ease of adoption. The goal is to support more consistent communication in the field and to initiate discussion within the broader mountain guiding community, with the aim of improving alignment and connectivity in communication standards.

KEYWORDS: Non-Verbal Communication, Guiding Standards, Standardization

1. INTRODUCTION

Definitions

For the purpose of this paper, non-verbal communication includes signaling through hand, arm, body, head, or equipment movements.

Background

The mountain environment presents many barriers to effective communication. These barriers can collectively be labeled as “noise”. Although some of the barriers are truly noise from motorized sources, additional sources include weather, distance, and winter clothing. Body language including facial expressions can be masked by snowsuits, goggles, sunglasses and helmets. Additional methods of non-verbal communication need to be considered. Signaling, via hand, arm, body, head, or equipment movements can clarify intent, or add to the confusion.

A review of the literature examined three industries with communication challenges comparable to those encountered in winter mountain guiding. To be included, each industry had to involve professionals operating in environments where verbal communication is diminished or unreliable. Two of the three comparable industries also shared a second characteristic with winter mountain guiding by involving recreational participants. These comparisons were used to identify common pathways in the development and standardization of non-verbal communication.

We can look to other “noisy” environments for solutions when verbal communication is insufficient. The Recreational Scuba Training Council (RSTC, 2005) established common hand signals for recreational scuba diving. Some of these hand signals originate from traditional sign languages. Aviation also uses standardized signals that support communication across spoken languages (ICAO, n.d.; ASTM International, 2019). The flight deck of an aircraft carrier has rigid protocols to manage a complex high-risk environment.

*Corresponding author address:

Shena Thomas, Mountain Stash Adventures,

Revelstoke, BC, Canada

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tel: 12503075564 / email shenathomas@outlook.com

Progression of Non-Verbal Communication Standards in Comparable Industries

Discipline	Informal Use Begins	Development and Adoption	Final Standardization
Scuba Diving	1943–1945 Modern scuba developed (Aqua-Lung)	Common hand signals adopted through dive schools and certification agencies during the 1950s–1960s	RSTC 2005
Aviation	1940s Visual ground signals in operational use	ICAO develops and adopts international aircraft marshalling signals	ICAO 1948
Whitewater Rafting	1970s Commercial rafting expands	Guide schools and professional organizations adopt similar river and paddle signals	No single formal international standard

Figure 1. Progression of non-verbal communication standards in three comparable industries. The path flows *Informal Use Begins* → *Development and Adoption* → *Final Standardization*. 2/3 disciplines followed a pathway though to universal standardization, but all developed consistent non-verbal communication systems to improve safety and operational effectiveness in environments where verbal communication is limited or unreliable.

Winter backcountry guiding may be at a comparable stage in the development of standardized non-verbal communication, and the industry is approaching a stage where standardized non-verbal communication would provide additional safety and operational benefits.

One governing body for SCUBA diving (RSTC) and one governing body for Aviation (ICAO) at a top hierarchy level allowed for complete industry standardization flowing down into schools, certification agencies, professional organizations and operations. Unlike those examples, white water rafting and winter mountain guiding do not have one singular governing body for all four disciplines, therefore our pathway halts at professional organization.

 PROFESSIONAL GUIDING ORGANIZATIONS IN NORTH AMERICA 		
ORGANIZATION	COUNTRY	WINTER GUIDING FOCUS
ACMG (Association of Canadian Mountain Guides)	 Canada	Professional certification in ski touring, mechanized ski guiding (heliskiing and snowcat skiing), ski mountaineering, and mountain guiding.
CSGA (Canadian Ski Guides Association)	 Canada	Professional certification for mechanized ski guiding, including heliskiing and snowcat skiing.
CMBGA (Canadian Motorized Backcountry Guides Association)	 Canada	Professional education and certification for motorized backcountry guiding, including snowmobile guiding.
IFMGA/UIAGM (International Federation of Mountain Guides Associations)	 International	International standards and recognition for professional mountain guide certification.
AMGA (American Mountain Guides Association)	 United States	Professional certification in ski guiding, ski mountaineering, alpine guiding, and mountain guiding.

Figure 2. Professional guiding organizations in North America. The figure highlights where the pathway toward standardization halts and suggests which professional organization would be the standardization body.

This paper examines four winter backcountry guiding disciplines: heli-skiing, cat-skiing, ski-touring, and motorized (snowmobile/snow bike). Personal observations of two snowmobile guiding operations highlight the challenges due to a lack of standardization.

The client briefing included instruction on basic hand signaling such as, stop, follow me, hazard to my right/left, let's go, look up, and space out. However, the messaging between lead and tail guides was never discussed. There were expectations that guide-to-guide hand and body gestures were similar, but it was not always the case that each gesture was identical between operations, leaving it open to interpretation. One operation had the tail guide tap their head meaning, "good to go", while another operation simply gave a thumbs up. Also noted, it appeared that it was less an operational standard and more a guide specific standard within the operation. The experience of the client was similar in that, their non-verbal cues varied depending on the individual guide and operation. This pattern of guide specific non-verbal messaging can be observed in heli and cat operations.

Observations within the four disciplines identified that winter guiding operations and guides use non-verbal cues to communicate guide-to-guide and guide-to-client. Observed communication included:

- Identifying safety concerns/hazards (overhead hazard, hole, stump)
- Instruction or direction (Stop, follow me, go that way)
- Observations (look at that)
- Information/emotion sharing (Excited fist bump, doing OK, thumbs up)

Through these observations and conversations, it appears that there is no set standardization of how to use these non-verbal messaging tactics. The Association of Canadian Mountain Guides (ACMG) published the Core Guiding Manual (Beardmore et al., 2022) and the Ski Guiding Manual (Piche et al., 2023). Although non-verbal communication is mentioned, there are no standardized tools such as hand signals. Numerous conversations with active ski and motorized guides suggest that although non-verbal communication is recognized as an essential component of ongoing risk management, it is left up to the individual guide to create meaning.

Research Questions

- a) Is there a need to use non-verbal communications in winter backcountry guiding in each of the four disciplines?
- b) Should it be standardized?
- c) How broadly should the standardization be implemented (Create one protocol for all winter backcountry guides, or protocols within each discipline or governing body)?

It is theorized that upon addressing the above questions, that each discipline (Heli-Ski, Cat-ski, Ski-tour, Motorized) could advance communication skills by adopting and implementing standardized non-verbal communications.

2. METHOD

Survey

A survey was sent to targeted participants who were active members in good standing within their governing bodies and held guiding certification as a lead guide, full guide, apprentice/assistant guide, or tail guide. In total, 46 participants across the four disciplines completed the survey: 18 motorized guides, 12 heli-ski guides, 11 cat-ski guides, and 5 ski-touring guides.

Survey limitations

The ski-touring sample was small (n equals five), which limits the reliability and generalizability of findings for this discipline. With such a small sample, a single response can substantially affect the percentages; therefore, comparisons involving the ski-touring group should be interpreted with caution.

Industry Discussions

Meetings and collaboration with Alaska Safe Riders, which has adopted and implemented a point-positive culture, helped to inform this work. Conversations within the CMBGA board of directors and technical committee, and with a lead guide from a Heli-Ski and cat ski operations also provided insight.

3. RESULTS

Question a)

Is there a need to use non-verbal communications in winter mountain guiding in each of the four disciplines?

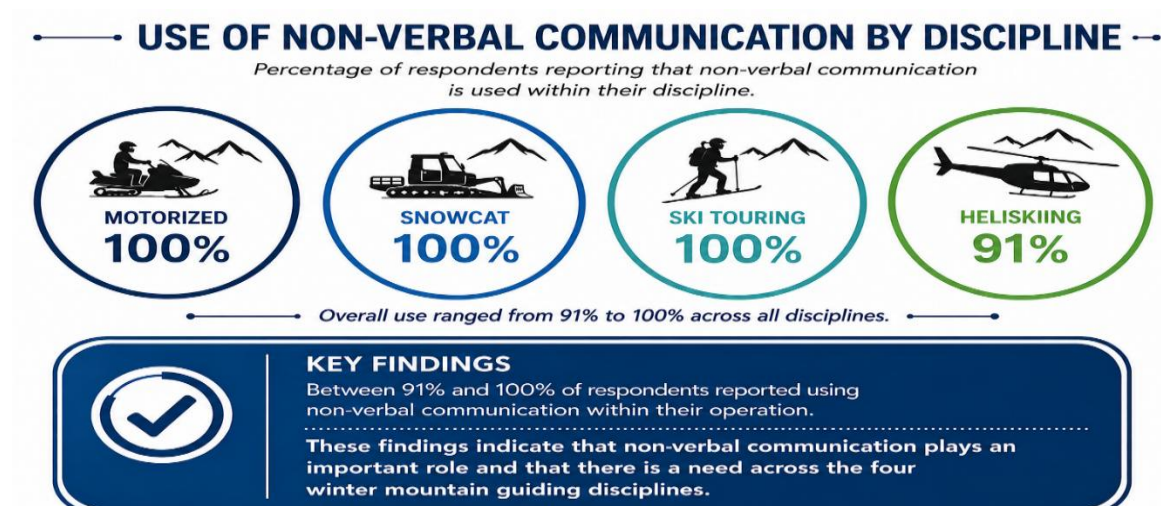


Figure 3. Survey results. Between 91–100% of respondents reported using non-verbal communication while guiding. This indicates that non-verbal communication plays an important role and that there is a need for it across the four disciplines.

Question b)

Should it be standardized?

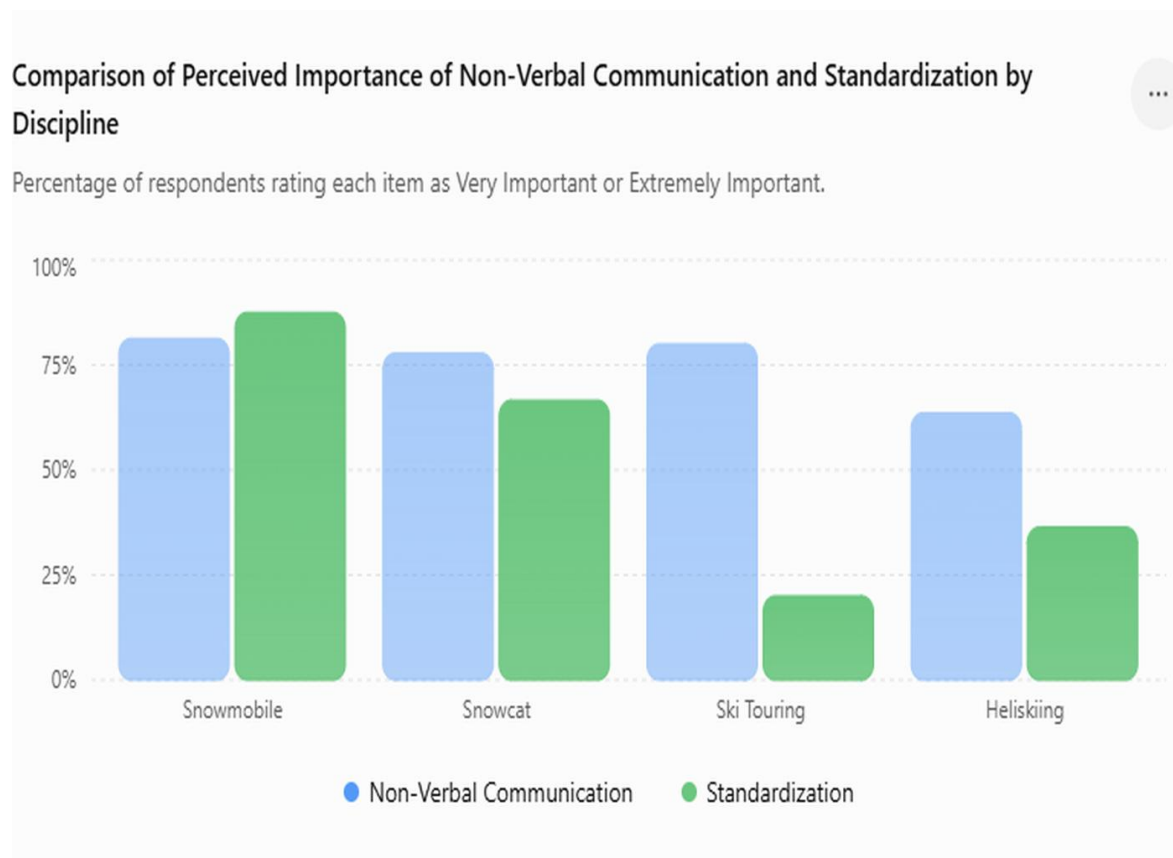


Figure 4. Perceived importance of non-verbal communication and standardization by discipline. *Participants were asked to rank the importance of non-verbal communication (blue) and to rate the importance of standardization of non-verbal communication (green) from not important at all to extremely important. Comparison of the percentage of respondents rating non-verbal communication and standardized non-verbal communication as Very Important or Extremely Important across four winter backcountry guiding disciplines.*

Figure 4 compares respondents' perceptions of the importance of non-verbal communication and standardized non-verbal communication across four winter backcountry guiding disciplines. Non-verbal communication was considered important across all disciplines (63.6–81.3%). However, support for standardized non-verbal communication varied considerably. Motorized disciplines (snowmobile and snowcat) showed the strongest support for standardization, whereas the human-powered discipline of ski touring showed lower support. This suggests that disciplines operating in quieter environments, where verbal communication is more readily available, may perceive less need for standardized non-verbal communication. Results for the ski touring group should be interpreted with caution because only five participants completed the survey ($n = 5$), making percentage-based comparisons less reliable.

Question c)

Where should standardization be implemented within the pathway? Figure 2 highlights where the pathway toward standardization halts and suggests which professional organization would be the standardization body.

4. DISCUSSION

Challenges and limitations

Heli-Ski, cat-ski, and ski-tour guides have options to obtain their training and guiding certifications from two different governing bodies. ACMG certified guides have traditionally worked in heli, snowcat and ski touring settings, whereas the CSGA has only recently added ski touring to the scope of practice. This could pose challenges in standardization if the organizations do not collaborate. Also, as noted, disciplines with less environmental noise consider standardization of less importance and may not prioritize its implementation.

Further data and study are needed to evaluate factors such as the effectiveness of signaling at different distances between people.

Proposed

Since graduates from ski/snowboard-based and non-mechanized organizations can grow their career into three of the four disciplines it is suggested that the ACMG, CSGA, IFMGA, and AMGA convene a committee to create a working document and an implementation strategy. Since the CMBGA is currently the only governing body for motorized backcountry guiding, the discipline can work independently through its Technical Committee to create and implement standardized non-verbal communication and signaling, including hand and body gestures/movements. The intent of this work is not to prescribe a final set of standardized signals, but to initiate an industry discussion and provide a framework through which appropriate signals can be collaboratively developed, tested, and implemented.

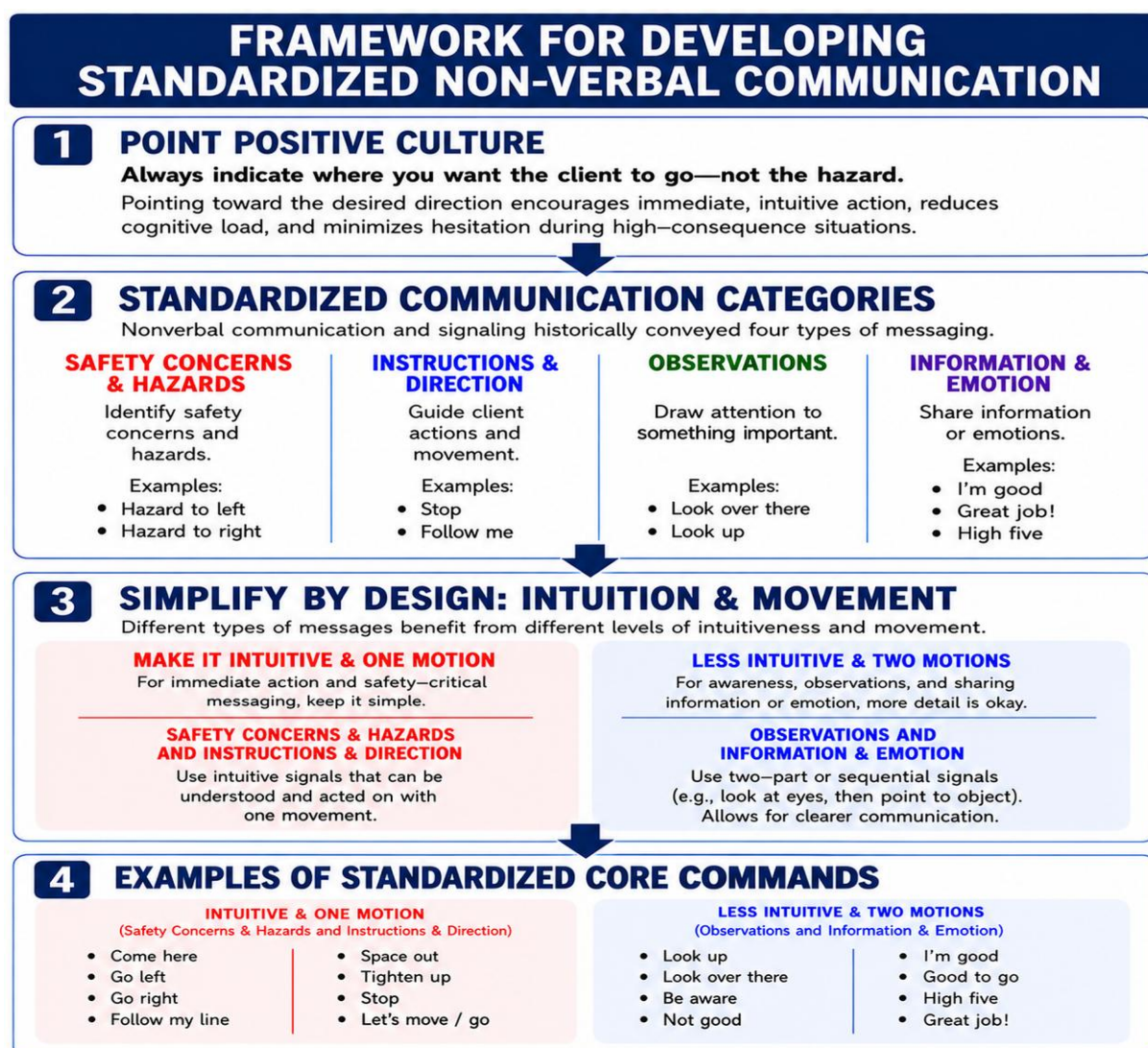


Figure 5. Framework for developing standardized non-verbal communication. *The proposed framework links point-positive culture, communication categories, motion design, and standardized core commands.*

Proposed real-world application – motorized examples

All graduates of the CMBGA training and certification program will enter the workforce with standardized communication skills that can be utilized across operations and geographic regions. Examples of implementation are as follows.



Figure 6. Example: How it all works together – point-positive culture. The diagram illustrates the practical application of a point-positive culture in non-verbal communication.



Figure 7. Example: How it all works together – decisive one motion. For urgent safety concerns, hazards, instruction, and direction, non-verbal signals should be decisive and simple, using one motion.

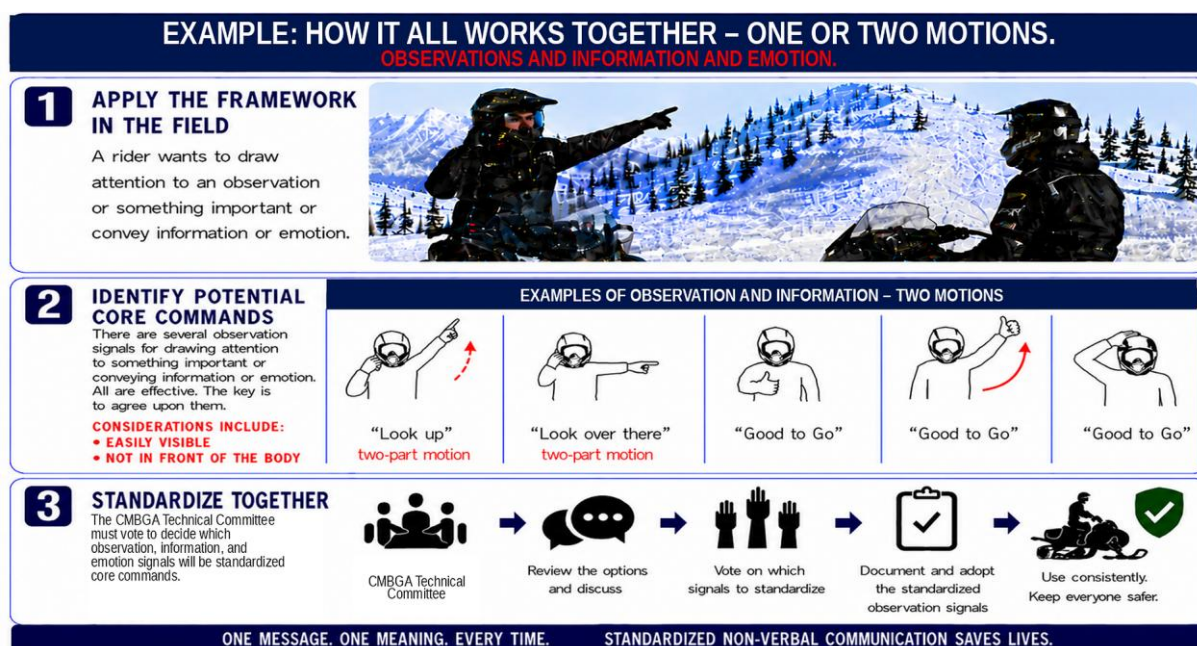


Figure 8. Example: How it all works together – one or two motions. For observations, information, or emotion, standardized signaling can use one or two motions; lower urgency allows greater signal complexity.

5. CONCLUSION

Non-standardized or absent non-verbal communication creates the potential for key risk communication to be mis-interpreted. All four disciplines identified the need for improved intra group communication strategies, with less need within the “quieter” ski touring. Although motorized guiding is the discipline that will benefit most from a standardized set of non-verbal communication strategies, ski guiding will also benefit. With increasing interactions between ski groups and motorized groups, a shared common non-verbal language will facilitate inter-discipline communication. There will also likely be the need to generate discipline specific gestures that are needed by one discipline but not the others.

6. REFERENCES

- ASTM International, 2019. ASTM F1591-95(2019), Standard Practice for Visual Signals Between Persons on the Ground and in Aircraft During Ground Emergencies. ASTM International. <https://doi.org/10.1520/F1591-95R19>.
- Beardmore, A., Gibson, C., Guyn, T., Holeczi, S., Hood, J., Kaipio, C., Ledwidge, M., Osler, G., Piche, M., Robinson, Z., Sovdat, H. 2022. Core Guiding Manual, Association of Canadian Mountain Guides.
- International Civil Aviation Organization (ICAO), n.d. Annex 2 – Rules of the Air, Appendix 1 – Signals (aircraft marshalling signals). International Civil Aviation Organization.
- Piche, M., McKay, S., Zacharias, C., 2023. Ski Guiding Manual, Association of Canadian Mountain Guides.
- Recreational Scuba Training Council (RSTC), 2005. Common Hand Signals for Recreational Scuba Diving. Effective 1 December 2005. World Recreational Scuba Training Council.