



ALPINE OFFICIALS' MANUAL

CHAPTER XII

COMPUTERS AND SKI RACING SEASON 2026

OVERVIEW	XII/ 2/2026
COMPUTERS IN SKI RACING	XII/ 2/2026
RACE PROGRAM SOFTWARE SPECIFICATIONS.....	XII/ 2/2026
BEFORE THE RACE.....	XII/ 4/2026
Computer Input Information.....	XII/ 5/2026
Entering Header Data.....	XII/ 6/2026
Entering Competitor Data.....	XII/ 6/2026
Creating an “Competition Database”.....	XII/ 8/2026
Competitor Lists.....	XII/ 9/2026
Start Lists	XII/ 9/2026
Assigning Bib Numbers.....	XII/10/2026
Snow Seed.....	XII/10/2026
Computer Location	XII/11/2026
DURING THE RACE.....	XII/12/2026
Recording Competitors' First Run Times/Status	XII/12/2026
Second Run Start List	XII/13/2026
Recording Competitors' Second Run Times/Status	XII/14/2026
AFTER THE RACE	XII/14/2026
Official Results	XII/14/2026
Official Penalty	XII/15/2026
U.S. Ski & Snowboard Results: Data Transmission.....	XII/15/2026
FIS Results: Data Transmission.....	XII/15/2026
USE OF THE U.S. SKI & SNOWBOARD AND FIS WEBSITES.....	XII/16/2026
RACE RESULT SOFTWARE SOLUTIONS	XII/17/2026
COMPUTERS AND “THE CLOUD”.....	XII/18/2026

OVERVIEW

Neither this Chapter, nor any of the others in the Alpine Officials' Manual, can possibly provide solutions for all the challenges that may occur at a ski race; it is only an attempt to make the same information available to all Alpine Officials. As you use the Manual, please send suggestions for improvement to the current Chairperson of the Alpine Officials' Education Working Group at aoewgchair@gmail.com.

COMPUTERS IN SKI RACING

This Chapter is organized in such a way that it should be easy to understand. Hopefully it will be as understandable for the novice users as well as for those with years of experience. It is important that this Chapter be used in conjunction with Race Administration Study Guide Section 1 and Section 2 as well as the documents listed in Chapter VI - Working Papers. Questions regarding standard/required documentation are answered in those presentations.

With total dependency on computers, there are some important items that must be given consideration. First and most important is the necessity for the Race Administrator to be fully knowledgeable in the preparation of event documents so, if necessary, the documents can be prepared manually until they can be computer generated in the correct format(s) as prescribed by U.S. Ski & Snowboard and FIS; this affords the opportunity to continue and even complete a race. Second is the necessity to completely understand and accept the fact that all data that is keyed into a computer must be verified for accuracy.

Computers can only do so much. One of the most common complaints is that the software has “frozen” and cannot complete a request. This problem is generally caused by a lack of available memory and can usually be solved by closing other software applications and/or windows that are open at the time the problem occurred. Accessing and using a race file stored in the “cloud,” a network drive, or a thumb drive could also cause a “freeze;” *storage to the hard drive with backup to the “cloud,” etc., is recommended.*

At some upper-level races, professional race management teams perform all data processing functions. Even with a professional data management team in charge of data input, the Technical Delegate, the Race Administrator, and the Chief of Timing and Calculations must verify all data prior to the duplication and distribution of any document because they are the officials primarily responsible for the accuracy of the official documentation of an event.

RACE PROGRAM SOFTWARE SPECIFICATIONS

There are two issues that must be addressed well in advance of your first event:

1. Is your computer's operating system compatible with the scoring software either currently being used or being considered?
2. Is your computer's version of Windows compatible with the scoring software either currently being used or being considered?

If the answer to either of these issues is negative, it is time for a change.

Basic computer skills are essential for a successful event. Being able to transfer files to and from your computer using either external storage devices or email, understanding file naming conventions, being able to determine what type of file you will use based on its extension (what comes after the dot (.)), are a basic requirement for creating a stress-free event.

Programs that have been tested to meet all current U.S. Ski & Snowboard and FIS result format requirements are currently available for download on the U.S. Ski & Snowboard website at usskiandsnowboard.org. (Using the timing functions of these programs may require a fee payable to the respective vendor; there is no fee required for data management functions.)

When deciding on software, consider the following points:

1. Will you be using MAC or Windows?
2. Does the software produce the required matrix (XML) for electronic transmission to U.S. Ski & Snowboard and FIS?
3. Does the software meet the requirements for all levels/types of events being staged by your club?
4. Does the software allow you to produce multiple formats (for example, U.S. Ski & Snowboard and FIS) from a single database? This is important as it saves data input time.
5. Does the software allow for easy access to both U.S. Ski & Snowboard National and FIS Points Lists to allow for accurate entry of competitor information?
6. Does the software allow the selection of the number of competitors that qualify for and/or will be reversed for the Second Run?
7. Does the software allow competitors who are NPS, DNS, DNF, or DSQ in the First Run to start in the Second Run, if allowed by the level/type of event?
8. Does the software deal correctly with ties for the last position of the reversed group? The last position of a qualifying group? In the rest of the field? In the Penalty?
9. Does the software allow you to edit defaults? e.g., U.S. Ski & Snowboard/FIS maximum values? Factors?
10. Can you easily edit data for the header? For competitors? For competitors' points?
11. How easy is it to change from one function to another within the software?
12. Will the software allow you to manually edit the Start List; e.g., enter start numbers that are different from the bib order for the First Run Start List (as in lower-level races or when bibs are not reissued for the second day of races)?
13. Does the software offer a variety of ways to sort and print competitors for different needs, e.g., alphabetically, by points, by class?
14. Does the software allow easy insertion/deletion of competitors?
15. Does the software allow each run to be a separate race?
16. Does the software print alpha listing of competitors? By Team/Club/Nation list? By Points?

17. Can the software automatically create a randomized start order?
18. If an approved Alternate Seeding Method is being used in your Division/Region, does the software allow for preparation of subsequent start lists in days of multi-day events?
19. If required, can seed cards be printed from the software?
20. Will the software correctly calculate or override U.S. Ski & Snowboard National and FIS Penalties?
21. Is Technical Support readily available? Is there a charge? Is there a toll-free number?

Producing results in XML format is a basic requirement for race result processing software for both U.S. Ski & Snowboard and FIS events. *Results for events submitted to FIS and U.S. Ski & Snowboard that are not in XML format will not be posted/scored until the format is correct.*

Results for U.S. Ski & Snowboard non-scored events may also be posted on the U.S. Ski & Snowboard website. In order for this to happen, multi-category events sanctioned and administered as an event for each involved category, e.g., Women's and Men's events, must have separate results and separate U.S. Ski & Snowboard assigned race codes for each gender and each category: non-scored and scored. In addition, they must be submitted individually!

NOTE: Youth events that consist of two one run races must have separate results and separate U.S. Ski & Snowboard assigned race codes for each of the one run races.

U.S. Ski & Snowboard and FIS procedures require that officials have a basic degree of computer competency, however, some of us grew up with computers and some of us didn't! If you are in the latter group, research the availability of computer classes in your area.

BEFORE THE RACE

Personal organizational skills and knowledge of the race result software being used, as well as the operation of the computer being used, are very important to the success of the race. As in other areas of ski race organization, no amount of race day work can replace pre-race preparation. Prior to the race – not race day – is the time to sharpen organizational skills and review or learn how to use your race result software. It is beneficial to create a “test race” and evaluate your race result software by running through possible race situations. “Race Administrator Study Guide – Section 1. Race Result Software” posted on the U.S. Ski & Snowboard website has documents that may, after loading applicable points lists and entering a field of competitors, be used to evaluate race result software.

A new season requires updated software, current Points Lists, and clean directories. Saving previous season's software versions, Points Lists, and race files is a good way to slow down an older computer and create problems. Uninstall previous season's software or overwrite with a current version, clear software dropdown caches, delete old Points Lists, and transfer previous seasons' race files to a storage unit where they may be accessed as needed, and you'll notice improved computer response.

It is also important to verify that all timing and result computers are using the same version of your club's choice of software. *This must be verified prior to each event.*



COMPUTER INPUT INFORMATION

Race Code: _____ FIS Codex: _____

Race Name: _____ Race Site: _____

Race Date: _____ Gender: M / F Event: DH/SL/GS/SG/AC/K/SQ/P

Training Dates: #1 _____ #2 _____ #3 _____

Training Times: #1 _____ #2 _____ #3 _____

RACE OFFICIALS	TECHNICAL DATA
TD: _____ U.S./FIS TD #: _____ Referee: _____ U.S. #: _____ Asst. Referee: _____ U.S. #: _____ Chief of Race: _____ U.S. #: _____ Chief of Course: _____ U.S. #: _____ Start Referee: _____ U.S. #: _____ Finish Referee: _____ U.S. #: _____	Name of Course: _____ Start: _____ m Finish: _____ m Vertical Drop: _____ m Measured Length of Course: (DH & SG Only) _____ m Homologation #: _____
1 st Run	2 nd Run
Course Setter: _____ Forerunners: A: _____ B: _____ C: _____ D: _____ Number of Gates/Turns: _____ Start Time: _____ Weather: _____ Snow: _____ Temp Start: _____ Temp Finish: _____ Timing: _____	Course Setter: _____ Forerunners: A: _____ B: _____ C: _____ D: _____ Number of Gates/Turns: _____ Start Time: _____ Data Processing: _____

ENTERING HEADER DATA

The "header" is composed of information such as the names of Jury members, Course Setters, racecourse name, racecourse technical data, gate counts, start time, etc. The previous form is a suggested format to assist in gathering this information. *Current software(s) may list Forerunners in a separate area above the "footer" on the last page of respective documents.*

Header information must be verified against the original source: Course name and homologation number against the original homologation file – not an old race result; start and finish elevations against the Technical Delegate's verification of information found in the homologation file - not an old race result; U.S. Ski & Snowboard Jury member, Jury Advisor, and Course Setter names against data posted on the U.S. Ski & Snowboard website; and race name, race location, U.S. Ski & Snowboard race code, race date, and event type against the event information posted on the U.S. Ski & Snowboard website. *FIS race name, race location, FIS codex, race date, and event type data must be verified on the FIS website.*

Homologation files are available for review on the following websites. Inasmuch as paper copy files or files located on independent websites may be outdated, the following are the only valid sources for verification of a course homologation.

media.usskiandsnowboard.org/CompServices/Homologation/

(Login is required: **User ID = homologation; Password = Allout2022!**)

fis-ski.com/DB/alpine-skiing/homologations.html

(Maps, photos, reports, etc., are not accessible at this site.)

NOTE: Current Alpine Officials are included in a separate file (NLO) in the U.S. Ski & Snowboard National Points List download. When using software currently approved by U.S. Ski & Snowboard, data for these officials may be accessed by keying in the Official's last name.

This NLO file only contains member names and membership numbers that were current on the date of file creation; ***it does not contain verification of certification or update (last clinic) status.*** The software assigns "USA" as the default nation. However, many foreign officials have obtained U.S. Ski & Snowboard "X" (foreign) memberships, so the "USA" default may have to be manually edited with a verified national affiliation for these officials. *This does not apply to foreign coaches who are staff members of U.S. Ski & Snowboard.*

NOTE: One thing you should *NOT* input is a control character or characters out of the Unicode ranges such as <, >," etc. The autoscoring processor may not accept these characters, and it's easier to avoid an issue than try and track down why your XML file is being rejected.

ENTERING COMPETITOR DATA

Online registration is an acceptable entry format; however, if online race registration is used for a FIS event, the "FIS Entry Form" must still be submitted. If the online race registration process produces an actual race file for downloading directly into your race result software, the accuracy of the downloaded data must still be verified against the appropriate source: U.S. Ski & Snowboard for U.S. Ski & Snowboard non-FIS events and FIS for FIS events.

Independent online registration systems are available and are currently being used for all event entries. If your Region/Division has not designated which online registration will be used, contact other Race Administrators for recommendations/advice prior to selecting an online

registration system for your event(s). If an example of the file provided by the system is available, it is strongly suggested it be used to test for ease of use and whether or not the system will meet the needs of your events.

Some Race Administrators may prefer to receive a Team Entry Form; FIS competitors' entries also require a FIS Entry Form. Both forms are available in the "Master Packet of Forms" (MPF) available on the U.S. Ski & Snowboard website.

U.S. Ski & Snowboard National Points Lists/Officials' Roster and FIS Points Lists formatted for race result software may be downloaded from the U.S. Ski & Snowboard website either onto an external storage device, a designated location on your computer, or directly into the race result software. *A compatible race program and a hard drive with sufficient storage is required in order to operate these features.*

NOTE: If a Points List needs to be reloaded, all previous versions may need to be deleted. Otherwise, the download process may simply verify that the list is already loaded on the computer and go no further. Software may also store copies of Points Lists in more than one location, and using the "search" function may be necessary in order to identify their location so they may be deleted.

NOTE: The FIS Points List available on the FIS website is not formatted for downloading into race result software. Downloading this version into your software will result in loss of the link between a competitor's U.S. Ski & Snowboard national data and their FIS data.

The ability to download U.S. Ski & Snowboard National and FIS Points Lists directly into the Race Result Software has made accurate keying of competitors' information - FIS/U.S. Ski & Snowboard code numbers and Points, competitor's year of birth, class, etc. - a relatively easy operation. However, it is important that information for FIS events be carefully verified against the original data source - the current FIS Points Lists List posted on the FIS website. *U.S. Ski & Snowboard race codes may be verified on the U.S. Ski & Snowboard website; FIS codex numbers, although posted on the U.S. Ski & Snowboard website, must still be verified on the FIS website.*

When retrieving data, programs will not "pull up" the required information if the name entered has a different spelling from that on the points list, so it may be easier to "pull up" the information by U.S. Ski & Snowboard or FIS code number. "Pulling up" a competitor with U.S. Ski & Snowboard or FIS code number also helps ensure that the correct competitor is selected.

U.S. Ski & Snowboard database only capitalizes the first character of a competitor's last name, but the FIS database capitalizes the entire last name. If your List of Competitors for a FIS event has different formats for competitors' last names, it is usually caused by the software having to search the U.S. Ski & Snowboard database for a competitor's name, etc. *This is usually only encountered for U.S. Ski & Snowboard members with new FIS inscriptions; please edit your race database as required by the type of race.*

NOTE: Athletes with "X" (foreign) memberships may either be listed with a "USA" national affiliation or the affiliation may remain blank. Verification and manual database correction should not only be done for accuracy; it should be done out of respect for an athlete's nationality.

All of the event software programs approved by U.S. Ski & Snowboard enable the retrieval of all data for each competitor in one continuous operation. From the file you create, it should be easy

to create additional race files for each day's race(s) regardless of the event. When creating new files, enter and verify accuracy of required U.S. Ski & Snowboard race code information, e.g., event, date, U.S. Ski & Snowboard race code, FIS codex number.

Information in the TEAM or NATION field, e.g., USA, CAN, AUT, etc., is intended to display an athlete's national federation affiliation. The CLUB field is used to designate a competitor's declared club membership. This CLUB field will need to be edited or - if your software allows it - a new field will have to be created, if information other than a member's club is required; e.g., quota or college/university affiliation (required for FIS-U events).

NOTE: The Race Administrator must not rely solely on the data provided as part of the points list download (NLM, NLW, NLO). This list is generated every two weeks, and a membership may be moved to inactive status during that time period. This includes, but is not limited to: YOB 2008 athlete who turns 18 years of age after December 31, YOB 2007 who turned 18 years of age prior to December 31 but after membership renewal; athlete who has been placed on the Membership Hold List; member who has been sanctioned by U.S. Ski & Snowboard; member whose name has been added to the Centralized Disciplinary Database.

CREATING A "COMPETITION DATABASE"

For a race series, e.g., Regional Championships, where most of the competitors are entered in more than one event, the following procedure is recommended:

1. Create a "Competition Database"
2. Name it something that has meaning to you. Ex. "Snow Basin Spring Series" not F1234_Registration as you want to be able to find the file quickly.
3. Enter ALL competitors and include quota designation, when applicable (When 2, or more competitors, have the same last name and first initial, search with a competitor's U.S. Ski & Snowboard/FIS code to eliminate the possibility of selecting the wrong competitor.)
4. Print List of Competitors with "Points in All Events"
5. Verify all information and make necessary corrections
6. Create event, e.g., Slalom, from this "Competition Database"
7. Delete competitors not competing in the Slalom
8. For each succeeding event, repeat steps 6 and 7. In the long run, this will save time and a "Competition Database" file may be transferred from one venue to another!
9. Update "Competition Database" as needed to add new competitors or delete those who have been pulled from all scheduled events.

NOTE: U.S. Ski & Snowboard allows exceptional athletes to ski up in class. If a ski up athlete is entered into your event, the athlete's class must be manually edited to agree with the class in which they are actually competing. *Some Divisions may allow an athlete to "ski down" in class; if allowed, the athlete's class must be manually edited to agree with the class in which they are*

actually competing. The autoscore system may revert to the actual class; however, all published documents will indicate the "competing class".

Once all competitor data has been input in the Competition Database, print an alphabetical list of competitors and use it to verify entered data against either online or downloaded copies of the applicable points list and/or membership roster. (If you have created a multiple event database, printing a list with points in all events allows you to verify all competitor data in one operation.)

FIS competitors' data must be verified against the FIS List on the FIS websites. If there is a difference in a competitor's name between FIS and U.S. Ski & Snowboard databases, use the name exactly as it appears on the appropriate list for your event - U.S. Ski & Snowboard or FIS. *However, verify the competitor's code number to make sure you have the correct competitor.*

NOTE: Online registration platforms may allow you download competitor entries directly into your race result software. It is critical that the accuracy of **all** downloaded data be verified for accuracy: data for non-FIS events against the U.S. Ski & Snowboard website and data for FIS events against the FIS website.

NOTE: It is extremely important that you "save" data often and backup race files to an external source after every major change, e.g., initial event creation, final editing of data, preparation of 1st Run Start List, entry of 1st Run times. Creating systematic backups of your file may eliminate major issues in the event of a system crash with resultant data loss. Depending on your race result software's ability to create an automatic backup for you will work – but only if the computer is still functioning.

COMPETITOR LISTS

Once all competitor/header data has been keyed into the computer and verified against the original sources, it is useful to print the following competitor lists: List of Competitor by Seed Points which is used to check the seeding of your event; List of Competitors by Nation/Club which may be used to help Team Captains verify their entries; and a corrected copy of the alphabetical listing which may also be used to help verify competitors' entries.

START LISTS

The competitors' start order is determined and approved at a Team Captains' Meeting which may be held either in person or on an online platform. [See Chapter V - The Secretariat, for an explanation of the Team Captains' Meeting and the Draw.] Also, additional header information - Forerunners, Course Setters, and scheduled start times may be available at the Team Captains' Meeting for entry into the computer file. This is also the time when any additions, deletions, or corrections to the competitors' database should be made. These changes, header data changes, or additions should be completed prior to the assignment of start/bib numbers.

The Jury may allow a computer-generated draw for all U.S. Ski & Snowboard scored events. A signed (submitted) FIS entry is considered acceptance of a computer-generated draw at a FIS event. With the acceptance of online Team Captains' Meetings, the ability to create a computer-generated draw has become a necessity.

It is important to remember that computer-generated Draws are governed by a random identifier and unless this identifier is changed prior to each Draw, results of a Draw with the same competitors may only have minimal changes. Only the software writer has the access required to change the random identifier.

Some programs allow for a “random” sort function while others require that you do it manually. The Race Administrator must understand that any special instructions regarding the start order, such as for adaptive competitors ("Golden Rule" – U.S. Ski & Snowboard Alpine Competition Guide), collegiate seeding, Continental Cup (Nor-Am Cup) seeding, or an Alternate Seeding System (generally by gender/class but may be by entire field). If a separate individual is managing the event documents, the Race Administrator must verify these instructions have been communicated and the data management person understands and abides by them.

ASSIGNING BIB NUMBERS

Because of incomplete sets of competitor bibs, it may be necessary to allow for missing bib numbers. After the draw is completed and each competitor is in their proper start order, it is usually easy to assign bib numbers and allow for these gaps. However, the Team Captains' Meeting is not the time to experiment with the procedure; this is something that should have been tested in advance.

In the case of missing bib numbers, the First Run **BIB** number will not be the same as the First Run **START** number (offset is created). This is the situation where the software **must** allow the printing of Official Results with “bib number” instead of “start number” so that there is agreement with Reports by the Referee, which identifies competitors by their bib numbers.

If the Jury allows a competitor to be inserted in the field after the Start List has been prepared, assign an out-of-sequence bib number and the correct start number; then reassign start numbers for all subsequent competitors. As with the missing bib(s) situation, this will also create an offset from bib number to start number. Assigning a numeric plus an alpha character start number (e.g., 15A) for an insertion following the fifteenth racer may result in unexpected and possibly wrong outcomes. The start number is used for sorting and since an Alpha character is not a number, it will always be treated as a zero. (Geoff Elder, SplitSecond)

BIB versus START: If an out-of-sequence bib number is assigned; verify how your race result software sorts a tie in time. As noted above, SplitSecond defaults to the “Start Number,” but VOLA defaults to the “Bib Number”.

SNOW SEED

In Downhill, Super G, and Giant Slalom, the Jury may require that a "Snow Seed" be drawn (Refer to current rule books regarding “Starting Order in Extraordinary Conditions.”) If your chosen software cannot indicate which competitors have been drawn for the snow seed, it is easily accomplished by editing your Start List either in a print preview screen or by using a pen and marking an asterisk (*) before the designated competitors’ names on the paper copy BEFORE duplicating your First Run Start List.

NOTE: If your software automatically assigns an asterisk (*) to those selected for the Snow Seed, it is suggested that the asterisks be removed from the race file if the Jury decides that the Snow Seed will not start. If the Snow Seed does start, and if time allows it, the asterisk may be removed immediately after they start.

Software may allow preparation of a “Condensed Start List” which eliminates the “Header” and “Footer.” A “Condensed Start List” is useful for individuals who only want to view the actual start order. However, it is not recommended for distribution to officials who need to be able to identify members of the Jury or who require knowledge of an event’s technical data.

The layout of the Condensed Start List may also lead to confusion regarding bib number versus start number and Gate Judges must be educated accordingly. *Limiting the amount of displayed data may help eliminate confusion, e.g., only display Bib # and Name.*

NOTE: Condensed Start Lists do not contain the names of approved forerunners. If a full Start List is not provided for the Start Referee, a list of approved forerunners must be included in the Start Referee's packet.

COMPUTER LOCATION

It is important to give careful consideration ahead of time as to where the computer will be located on race day. Primary importance is a location where distraction to the computer operator and other officials is minimal. If it is necessary to relocate your computer (e.g., to and from the timing building), care must be used in its transport. Using a snowmobile may cause problems not only because of the rough ride and the cold temperatures which may cause physical damage to hard drives, but also because of the magnetic field generated by some snowmobile engines, which may erase or scramble the data on the hard drive. Proximity to drills and radios carried by race personnel may also cause loss of data.

Other questions that should be answered in advance of race day are the availability of power for the computer and whether or not there is a copy machine available. Electronic timing equipment may only be linked to the computer if it can be shown that the timing system will still function when disconnected from the computer.

If timing equipment is not linked to the computer, and the computer is not located in the timing building, arrangements will have to be made so that the competitors' times are made available for input. This may be accomplished by transferring either the "race file" or the "timing file" from the result computer to the timing system and then back to the result computer at the end of each run/event. When deciding on how to transfer a file, the following items should be considered:

1. Transferring the "race file" overrides the file on the computer to which it is being transferred and will overwrite any edits/corrections that have been made during the run/event.
2. Transferring the "timing file" involves transfer of only selected data: Bib #, Name, Time, etc. This eliminates overwriting of edits/corrections to the original race file (header, officials, etc.) that may have been made during the course of the day.

NOTE: Although current operating systems may safeguard against the problem, it is a good idea to use the "safely remove" function if using a memory stick (thumb drive) to transfer race files. In some cases, failure to do so may result in the loss of data.

Regardless of the computer's location and the data input system used, competitors' times must be carefully checked for accuracy against the timing tapes from the homologated primary timer. When the timer allows manual input or correction of a time, some type of indication – asterisk – concerning any change must be printed on the primary timing tapes. If the timing equipment does not record the information, it is suggested that the electronic clock operator mark the tape when a "DNF" or "DNS" is assigned.

When a competitor's primary electronic time is not valid or if both primary and secondary electronic timing systems fail and no electronic times are available for a competitor, a replacement time must be calculated, this falls under the category of correction of a time, and it must be so indicated.

DURING THE RACE

Since the location of the computer was decided in advance, it will be possible to test its operation prior to the start of the race. This should be done well in advance and not the morning of the competition. It is important to remember that the Race Administrator and the Chief of Timing and Calculations are responsible for the accuracy of official documents. Trust in each other's judgments/decisions and a cooperative manner on the part of all officials contributes to a more pleasant environment and fewer errors.

Certain information, e.g., actual start time of the run(s), measured length of the competition course (length measured from gate to gate along the racing line) for Downhill and Super G, as well as actual gate count for Downhill, and actual gate count/number of direction changes for Super G, Giant Slalom, and Slalom must be furnished to Race Administration as the race progresses, and *it must be accurate*. This information is required for the Official Results.

If the measurement is taken prior to the publication of the Start List's for Downhill and Super G events, the length of the competition course should be documented on the Start List as it is required in order to calculate a competitor's speed on course. As previously noted, Super G, Giant Slalom, and Slalom require documentation of actual gate count/number of direction changes on the Official Results; Downhill only requires documentation of the actual gate count.

The Race Administrator also needs: air temperature at the start area and the finish area at the beginning of the race, snow conditions, competitors' status: NPS, DNS, DNF, or DSQ. Accuracy of this information must be verified by the Technical Delegate (TD) before official race results are submitted, and the Report of the Technical Delegate is filed.

RECORDING COMPETITORS' FIRST RUN TIMES/STATUS

Whether the computer is linked up to the timing equipment or times are transferred by memory stick, or email, competitor's times should be available as the race progresses. Times/standings may be displayed by an online platform (live-timing), announced, displayed on a remote screen, or may be recorded on a paper/plastic scoreboard for public viewing. These options will obviously depend on the individual situation, available equipment, and personnel. However, these times/standings, whether announced or displayed are unofficial.

Recording times is only part of the procedure required in order to produce official results. It must also be possible to enter NPS, DNS, DNF, or DSQ. When entering DSQ, the gate number where the DSQ occurred or the applicable rule number must be entered. *The applicable rule number for a DSQ that does not involve gate passage, such as early/late (false) start, equipment, etc., must be entered*. Different programs have different procedures for this function; pre-race training allows familiarization with these functions. *The rule number field only accepts numbers and decimals; if text is entered, the XML race result file will be rejected/*

After all competitors' first run times – or status – have been recorded and verified, a First Run Result may be printed. If the First Run Start List had 120 competitors, the First Run Result must also have 120 competitors; this allows verification that all competitors have been assigned either a time or a status (NPS, DNS, DNF, DSQ). Some programs will not allow you to print results until every competitor either has a time or a status designator and have a default factor, which will appear if nothing has been entered for a competitor. Other programs however, might simply list a competitor as a DNS if a time is not entered. Knowing your software's requirements is another good reason for pre-race training.

NOTE: For events that have field size cutoffs for the second run, it is imperative to verify how your software addresses those competitors who did not qualify for the second run. Are they designated as DNQ (did not qualify) or DNS (did not start), and is there an internal check that automatically assigns DNQ on the printed results? If you do not test this function prior to race day, problems will not be evident until you attempt to print Official Results.

NOTE: If a DSQ is entered after a second run cutoff is established, you must verify that the correct number of athletes is on the Second Run Start List. If your software assigns “DNQ,” it will be necessary to change the second run status of the next ranked competitor from DNQ to DNS. *If you fail to address this issue, it will result in an incorrect number of starters for the second run; e.g., 59 instead of 60.*

It is also necessary to check for ties in time at the cutoff position. If a tie occurs at the cutoff position, it may be necessary to increase assigned cutoff number to include all tied competitors.

All times **MUST BE VERIFIED AGAINST THE TIMING TAPES FROM THE HOMOLOGATED PRIMARY TIMER** whether or not you choose the option of printing a First Run Result. NPS, DNS, DNF, and DSQ competitor information must be verified against the Report by the Referee. The data management person should never print a Second Run Start List before the end of the Protest period and before the competitors’ DSQ status has been verified and noted in the race file. Always account for all competitors by verifying that the number of competitors listed on the Second Run Start List is equal to the number on the First Run Start List minus all NPS’s, DNS’s, DNF’s, and DSQ’s that have not been protested.

- In some U.S. Ski & Snowboard scored non-FIS races and non-scored races, first run NPS, DNS, DNF, and DSQ competitors start the second run either at the end of class, gender, or field.
- U.S. Ski & Snowboard scored and non-scored races using an Alternate Seeding Method, first run NPS, DNS, DNF, and DSQ competitors remain in the field and start as scheduled; e.g., TRS. (Verify procedure required by the Alternate Seeding Method being used for your event.)
- For U.S. Ski & Snowboard non-scored races where each run counts individually, first-run NPS, DNS, DNF, and DSQ competitors always remain in their original position and start as scheduled.

SECOND RUN START LIST

Because of the varied second run allowances/requirement, Second Run Start Lists for all events must be carefully checked for accuracy. Please refer to current U.S. Ski & Snowboard Alpine Competition Guide for special seeding requirements.

If the level of event requires a second run “bibbo,” it is important that its requirements for preparation are understood. The standard number of competitors that are reversed for the second run start – the “bibbo” – is 30; 15 is the variation. Most programs allow the operator to select the exact number of competitors to reverse - “bibbo” - for the second run. If a Jury decides to allow a “bibbo” of 15, this announcement must be made one hour prior to the start of the first run. It is recommended that the size of the “bibbo” be confirmed prior to generation of the Second Run Start List.

Remember that in U.S. Ski & Snowboard sanctioned events that are not using an Alternate Seeding system, adaptive competitors start immediately after the bibbo group in the second run (16/31) unless their first run results have earned them an earlier start position. Adaptive competitors who are first-run DNS, NPS, DNF, or DSQ may take a second run after the last first-run classified competitor has completed their run. *They start in bib order.*

In U.S. Ski & Snowboard events that are using an Alternate Seeding System (TRS), adaptive athletes start in the 16th position in all runs unless the initial random sort/flip/butterfly affords them an earlier start position. (*Refer to "Golden Rule," U.S. Ski & Snowboard Alpine Competition Guide*)

The “Golden Rule” does not apply to FIS events.

Always check for ties, especially at the last position of the reversed competitors, and verify that the race program has positioned the tied competitors according to current rules. Also, if there has been a change in the scheduled start time for the second run, verify that the change is indicated on the Second Run Start List.

If a computer failure should occur, you need to be familiar with rules, format and procedures so a Second Run Start List may be generated manually.

CRITICAL NOTE: If your software allows manual assignment of start numbers, do not edit competitors first run start numbers so that they correspond to the second run start positions. The software’s tiebreaking function may be controlled by the first run start number.

RECORDING COMPETITORS' SECOND RUN TIMES/STATUS

Recording times for the second run is the same as recording times for the first run. If the software does not automatically bring up the next competitor on the Start List, the competitor’s file is accessed by keying in the appropriate bib number. The correct second run time is entered, and the race result software adds it to the first run time. The competitor is then moved to the proper finish order.

Some programs will not let you put in a time if the competitor had a NPS, DNS, DNF, DSQ, or DNQ designation in the first run; this is the type of issue that must be addressed prior to race day. Similar checks to detect competitors who have missing times are once again necessary and *all* input must be verified against the timing tapes from the homologated primary timer.

AFTER THE RACE

This is when all input is reverified. You may be asked to print Unofficial Results for a Jury Meeting. These are often printed before unprotested DSQ’s are deleted from the field; verify that these Results are marked "UNOFFICIAL" and are not mixed up with official documents. You may also be asked to print a set of Results by Class for the Awards Chairman.

OFFICIAL RESULTS

Official Results, (which include the competitors’ earned race points for scored events), are printed after all header data has been verified, competitors' times have verified against the timing tapes from the homologated timer, Protest period has expired, and all DSQ’S have been entered per Jury instructions. The Chief of Timing & Calculations must be available in case a competitor’s time is questioned, to review the Timing & Data Technical Report form with the Technical Delegate, and to oversee its submittal as required by the level of race. (A TDTR is

required for FIS events and also for all U.S. Ski & Snowboard events – both scored and non-scored. *Preparation/submittal of a TDTR is not required for speed event training runs.*)

Clean and neat original documents (masters) of all required race documents as listed in Chapter V - The Secretariat, must be available for review by the Technical Delegate or to answer necessary questions. Results are not "Official" until they have been verified and signed by the Technical Delegate.

OFFICIAL PENALTY

For scored events, race result software programs calculate and print Race Points and Penalty. The Penalty is calculated and printed either as part of the “Result” function or as a separate function based on the Results. The Technical Delegate is responsible for verifying the accuracy of Race Points, Seed Points, and factors used in the calculation of the Penalty, and also verifying the accuracy of the actual calculations.

A Penalty for U.S. Ski & Snowboard or FIS scored events is not "Official" until verified and signed by the Technical Delegate. If the software is unable to perform the calculation, e.g., insufficient number of finishers, a hand calculated Penalty must be generated, signed, and submitted.

U.S. SKI & SNOWBOARD RESULTS: DATA TRANSMISSION

U.S. Ski & Snowboard approved software packages will automatically generate the required XML file. The XML file should be available for review, and it is strongly suggested that the basic race information it contains, e.g., race code, race date, penalty, be verified prior to transmission. XML race result files must be transmitted individually.

U.S. Ski & Snowboard has created an XML result upload process. The process allows for immediate verification of receipt, identifies issues/errors, and provides more complete competition data.

Speed Training, Parallel, SkillsQuest have different transmission requirements. Refer to “Procedures for Sending Event Files,” “Non-FIS Event Document Packets,” or “FIS Event Document Packets” located in the “Master Packet of Forms” on the U.S. Ski & Snowboard website. *(A SkillsQuest Score Sheet/Score Card contains the competitor data that is required for submittal to U.S. Ski & Snowboard. It is generated in Excel and no XML file will be available.)*

U.S. Ski & Snowboard assigns an alpha character followed by a 4-digit number (example: U1234) – a race code – that is used to identify U.S. Ski & Snowboard events. The subject line of the email must be the U.S. Ski & Snowboard assigned race code for the race being submitted. This enables the U.S. Ski & Snowboard autoscore system to quickly verify accuracy of the data and post the results on the U.S. Ski & Snowboard website. *(Refer to transmission information referring to non-scored events on page 4 of this Chapter.)*

FIS RESULTS: DATA TRANSMISSION

Data transmission of results to the FIS also requires electronic transmittal in XML format. The FIS Office will not manually enter race results into their database; races with issues are the responsibility of U.S. Ski & Snowboard. FIS assigns a 4-digit number - a codex number - that is used to identify FIS events. The subject line must be the nation plus the FIS assigned codex number for the race being submitted (example: USA1234). (Refer to “Rules of the FIS Points” for current FIS transmission address.)

NOTE: Electronic transmission of the U.S. Ski & Snowboard and/or FIS Results and Penalty and Timing Data Technical Report (TDTR) in XML format does not replace the requirement for submittal of official event document packets. Refer to Race Administration Study Guides or documents posted in the MPF on the U.S. Ski & Snowboard website for U.S. Ski & Snowboard and FIS event document packet requirements and transmission procedures.

If the XML results file is received in the proper format, you will receive an emailed confirmation of submission. If there is a problem with the results, you will receive an emailed status report.

Following are possible replies you may receive following result submittal:

- File conforms; results usable and being loaded.
- File conforms but with some errors listed that are being corrected automatically. Following errors are corrected but need to be verified on paper copy and in Report by the Technical Delegate. Errors that need to be checked, corrected and reported are:
 - ❑ Category not same as in FIS Calendar (WC, COC, FIS, etc.)
 - ❑ Event not same as in FIS Calendar
 - ❑ Ranking of ties incorrect
- File cannot be loaded; information is incomplete. File must be corrected and resubmitted.
 - ❑ Wrong codex
 - ❑ FIS inscriptions do not match (athlete FIS code numbers)
 - ❑ Unknown competitors
- File received but can't be identified; return to sender
- File not attached

Occasionally, the FIS parser will go down - usually over the weekend. If you do not receive a confirmation email within approximately 15 minutes following this procedure:

- Confirm that you are connected to the Internet.
- Have someone send an email to the email account that you are sending results from to confirm that you are receiving emails. (Setting up a secondary email account is helpful for testing without having to rely on an outside person.)
- If you can send and receive emails to/from another account, the FIS parser is down. DO NOT PANIC and resubmit your race result XML file numerous times. *If the issue occurs during the weekend, you may need to wait until Monday to resubmit.*
- FIS' receipt and acceptance of the race result XML file and the Timing & Data Technical Report XML file is required in order for a FIS Technical Delegate to verify the TDTR data and file an online FIS Technical Delegate Report. If the FIS parser is down, the Technical Delegate will need to delay online verification and filing of required reports until XML transmission is successful. *FIS events will not be valid for points until all reporting requirements have been completed.*
- After logging into the Technical Delegate's FIS member account, the Technical Delegate can track/verify receipt of required files.

USE OF THE U.S. SKI & SNOWBOARD AND FIS WEBSITES

U.S. Ski & Snowboard website (usskiandsnowboard.org) is a major communication tool. Available services are U.S. Ski Team news, current rules and regulations, race results, U.S. Ski & Snowboard National/FIS Points Lists, competitor and official membership data, officials' resources, FIS website link, etc. The goal of U.S. Ski & Snowboard is to utilize available technology and resources through the use of computerized processing, electronic transmission, and storage of information in order to provide an efficient system for communication.

Take some time and browse the items available on the U.S. Ski & Snowboard website. U.S. Ski & Snowboard staff's creation and maintenance of this website is an outstanding contribution to all members of the organization as well as other interested parties. *The U.S. Ski & Snowboard National Points List is only available at this site.*

The main FIS website may be accessed at fis-ski.com or through a link on the U.S. Ski & Snowboard website. FIS Points Lists and FIS Calendar are only available electronically.

RACE RESULT SOFTWARE SOLUTIONS

1. Verify that you are using an up-to-date version of the software.
2. Delete previous seasons' Points Lists.
3. If possible, delete dropdown caches.
4. Store previous seasons' races on external storage.
5. If software "freezes," verify that you do not have an excessive number of programs running in the background. If you do have additional programs open, start shutting them down until your software starts responding again.

Key CTRL+ALT+DEL and a TASK MANAGER window will appear. Click the "Applications" tab for a list of running programs; select individual open programs and select "End Task." A new box will appear that lists the program as not responding and allows you the option to shut it down. After shutting down other programs, if the race result software is still not responding, use the same procedure and shut it down. You should then be able to successfully reopen the software.

If the software is still not responsive, shut it down and, using either CTRL+ALT+DEL again or the RESTART function, reboot the computer. The rebooting function should solve remaining issues. If a RESTART or CTRL+ALT+DEL are not allowing you to reboot the computer, your next option is to power off and restart the computer. A "hard" powering off, however, - depressing the power button until the computer shuts down - should be used only as a last resort. A "hard" powering off is the equivalent of dropping a phonograph needle directly onto a spinning phonograph record. (If you don't know what a phonograph is, Google it!)

If you are using the Live-Timing feature of the software and have intermittent/no internet connection, this may cause software to appear frozen. DO NOT PANIC and start "mashing the buttons" (hitting keys over and over). Step back and let software cycle through. This may appear to take several minutes (it's actually about 30 seconds). If you are connected wirelessly or by wire, disable your internet connection to see if this helps the "freeze."

6. If it is necessary to load a corrected Points List, accessing U.S. Ski & Snowboard's FTP points list site and reloading the lists may not be adequate. When you request a download, the FTP site checks the hard drive on your computer, if it recognizes that the list is already loaded it may not overwrite the previous points list file; you must delete the original version.
7. When deleting list, it is important to remember lists may be stored in more than one area.

- a. If not sure of actual storage location, use search function, identify actual storage locations and delete them.
 - b. After reloading required lists, only refresh competitors' points and verify them against the appropriate source. *Refreshing all data will overwrite any edits you may have made; e.g., editing a competitor's name so it agrees with the appropriate list, assigning quotas.*
 - c. If you are having problems retrieving both U.S. Ski & Snowboard and FIS data for the same competitor, rekey the competitor's last name.
8. If your event has a second run cutoff and the required number of competitors are not present on the Second Run Start List (e.g., cutoff of 60/only 59 showing), verify your software has not recorded a first run designation for the missing competitor as "DNQ." *This problem generally occurs when a first run disqualification is entered after the initial preparation of a second run sort.*
9. If outside help is required, attach and email either the actual race file or the result XML file to an experienced Race Administrator; this enables *hands-on trouble shooting*.

COMPUTERS AND "THE CLOUD"

The desire for more portable computers led to the development of "Cloud Computing." Cloud computing allows access to files from anywhere and from any computer. Commonly used cloud systems are Google Drive and Dropbox.

When using a cloud, data is stored on remote servers rather than being stored on a local server or a personal computer. The benefits of cloud computing are a user being able to synchronize their physical hard drive to an online one and allowing the user to share data with other users as long as they all have internet connectivity and shared access.

Sending or receiving a file via email is a common use of cloud computing. The original file is saved in the "sent" box of the sender and also in the "inbox" of the receiver. Regardless of which cloud system is used, Google Drive, Dropbox, email, etc., physical backup using a flash drive is strongly suggested. Physical backup is critical when an Internet connection is not available!

NOTE: Google Drive, Dropbox, etc., must not be used to transmit XML race result files, XML Timing & Data Report files, or required event document files.