



FÉDÉRATION INTERNATIONALE DE SKI
INTERNATIONAL SKI FEDERATION
INTERNATIONALER SKIVERBAND



FREESTYLE SKIING TIMING BOOKLET

Edition 1.0

With homologated equipment 1999

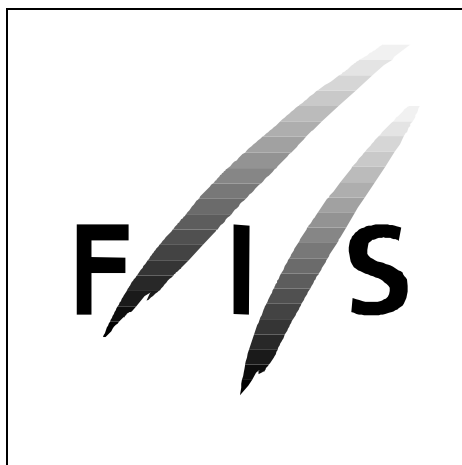


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FIS TIMING BOOKLET

FIS FREESTYLE TIMING GUIDE

Timing Devices

All timing devices used must be homologated as per the list page 16. Races using devices not mentioned on that list will not be considered for FIS points.

For all international competitions, FIS World Cup, FIS Continental Cups and FIS competitions, two synchronized electronically isolated timing systems operating in Time-of-Day must be used. One system will be designated System A (Main system), the other System B (Back Up System) prior to the beginning of the race.

Single Moguls

All time of day times must be immediately and automatically sequentially recorded on printed strips to at least the 1/1000th (0.001) precision. Both systems must allow for the calculation of net times by the mathematical comparison of each racer's start time to finish time. The final result for each skier's run is then expressed to 1/100th (0.01) precision by truncating the calculated net time on course.

Dual Moguls

Both systems must allow for the calculation of difference times by the mathematical comparison of the time of day of each impulse from the red and blue course. The result then shows the winning course and difference time expressed to 1/100th (0.01) precision.

Aerial Speed Trap

A single electronic timing system used for information purposes only. The system must be able to calculate the speed based on the time taken to travel over a set distance of 3 metres. A backup system is not required.

All times used for the final result must be from System A. If there is a failure of System A, a calculated net time from System B must be used following the same procedure as set out in the "Hand Timing" section later in this booklet. It is not permitted to substitute Time-of-Day times from System B for use with System A for the purpose of net time calculations.

For all events, System A must be connected to its respective photocells by hard wire connection. System B must be connected to another set of photocells by a separate pair of wires.

When the official printing timer allows manual input or correction of a time, some type of indication (star, asterisk or other) concerning any effected change must be printed on all timing documentation.

Refer to the diagram for more details regarding wiring and equipment needed.

All timing equipment and technical installation should be set up or protected in such a way that danger to the competitors is avoided where possible.

Photocells

For all events, there must be two photocell systems approved for use by the FIS installed at the start and finish line. One is connected to System A (Main), the other, connected to System B (Backup).

Location of start and finish cells to be determined in co-ordination with the Technical Delegate and/or the Jury.

Start cells to be placed squarely across the course within 1.0 – 1.5 metres downhill of the starting line.

Finish cells to be located squarely across course in line with the finish.

The snow is to be levelled (i.e. moguls removed) for a distance of 3 meters uphill of the finish line to avoid competitors jumping over the photocell's beam.

Main and backup photocells to be secured to the same post at a height of 1.00 metre for the main and 0.75 meter for the backup for both start and finish.

Timing posts to be cut 2/3 through, below the snow line, so as to shear off in the event of being skied into. Spare posts should be prepared in case of breakage.

Photocells must be connected to the timing devices by wire. No radio transmission is allowed.

There are two categories of cells:

Reflector Type: Both transmitter and receiver are on the same side and use a reflector on the other side. These photocells usually operate up to a maximum range of 25 meters.

Transmitter-Receiver Type: Transmitters can either be on opposite sides or on the same side, depending on the manufacturer's specifications. These type of photocells typically operate over a greater distance than the reflector type (up to 150 meters)

Voice Communication

In all international competitions, there must be multiple communications (i.e. Hard wire headsets, telephone or radios, etc.) between the start and finish. Voice communication between starter and finish must be assured by fixed wire connection or radio. In case of radio, this must be on a separate channel from that used by any other function of the OC.

In Olympic Winter Games, FIS World Championships and World Cup the communications between start and finish must be assured by fixed wiring.

Timing impulse and voice communication functions must be separated on different wire pairs if manufacturer's specifications dictate.

Timing Cables

Cables should be routed so as to prevent damage by skier traffic or tampering of by any spectators next to the course.

Display Board

A timing display board or scoreboard must be provided showing the running time in 1/10th second during the run and the net time to 1/100th second once the competitor has crossed the finish line. The display board or scoreboard to be located in a position visible from the judges stand and public so as to communicate the time recorded by the main timing system.

Manual hand timing

In all cases hand timing is compulsory.

Manual (Hand) Timing, completely separate and independent of the Electronic Timing, must be used for all competitions listed in the FIS calendar. Stopwatches or hand-held battery operated timers that are installed at both the start and the finish and capable of expressing time of day times to 1/10th (0.1) or 1/100th (0.01) precision qualify as proper hand timing devices. They must be synchronized prior to the start of each run, preferably with the same Time-of-Day as System A and System B. Printed records, either automatic or handwritten of recorded hand times must be immediately available at the start and at the finish.

Stopwatches, with or without printers, should be synchronised to the time of day and used at the start and at the finish.

A complete list of hand times recorded at the start and the finish must be given to the Chief of Scoring at the end of each run, or immediately upon request.

Following the start of each competitor the start hand time will be communicated to the operator of the System B (Backup) and recorded.

After each competitor crosses the finish line, the hand time at the finish point will also be communicated and the net time will be calculated and recorded for both System B (Backup) and hand timing.

An on-going recording and calculation process will continue for the entire event.

Synchronisation

All elements of the timing installation, must be installed and be in good working order at least one hour before the beginning of the competition. Timers should be turned on 30 minutes before synchronisation to allow the quartz time bases to stabilise.

Synchronisation must be done 30 minutes prior to the start of each run and must not be re-synchronised while the run is in progress.

The synchronisation impulse for all timers must come from the start gate. One minute after synchronisation is done, a new impulse must be sent by the start gate to check synchronisation accuracy on Systems A and B.

Should any important discrepancies be observed when this check is performed, synchronisation should be redone and checked again prior to the start of the run.

Manual stopwatch synchronisation must be done before or together with the synchronisation of the whole system.

During the competition

Timing of the finish

With electronic timing, the time is taken when any part of a competitor crosses the finish line and triggers the beam between the photo cells.

In case of a fall at the finish, the time can be taken without both of the competitor's feet having crossed the finish line.

With hand timing the time will be taken when any part of the competitor crosses the finish line.

If a competitor fails to finish or stops for more than 10 seconds, the Head Judge may declare that the competitor will be scored up to that point. At that time the display of the running time on the display board can be cleared. And as far as the timing is concerned may be recorded as a DNF.

Timing problems

In case of timing problems, the Chief of Timing must inform members of the jury and the Chief of Scoring immediately.

In the case of a failure of the main electronic timing system (System A), the results of the electronic back-up system (System B) will be valid after applying a correction factor. In the case that calculated net times from either System A or System B are not available for a competitor, the calculated net Hand Time as per will be considered valid after a correction factor has been applied.

Calculation of the Correction factor

Calculate the difference between the net backup times or net hand times and the main electronic net times of the 3 competitors starting before the missing time.

The average of the 3 time differences (Correction Factor) is then added to the backup or hand time of the competitor without a main electronic time.

Following the competition

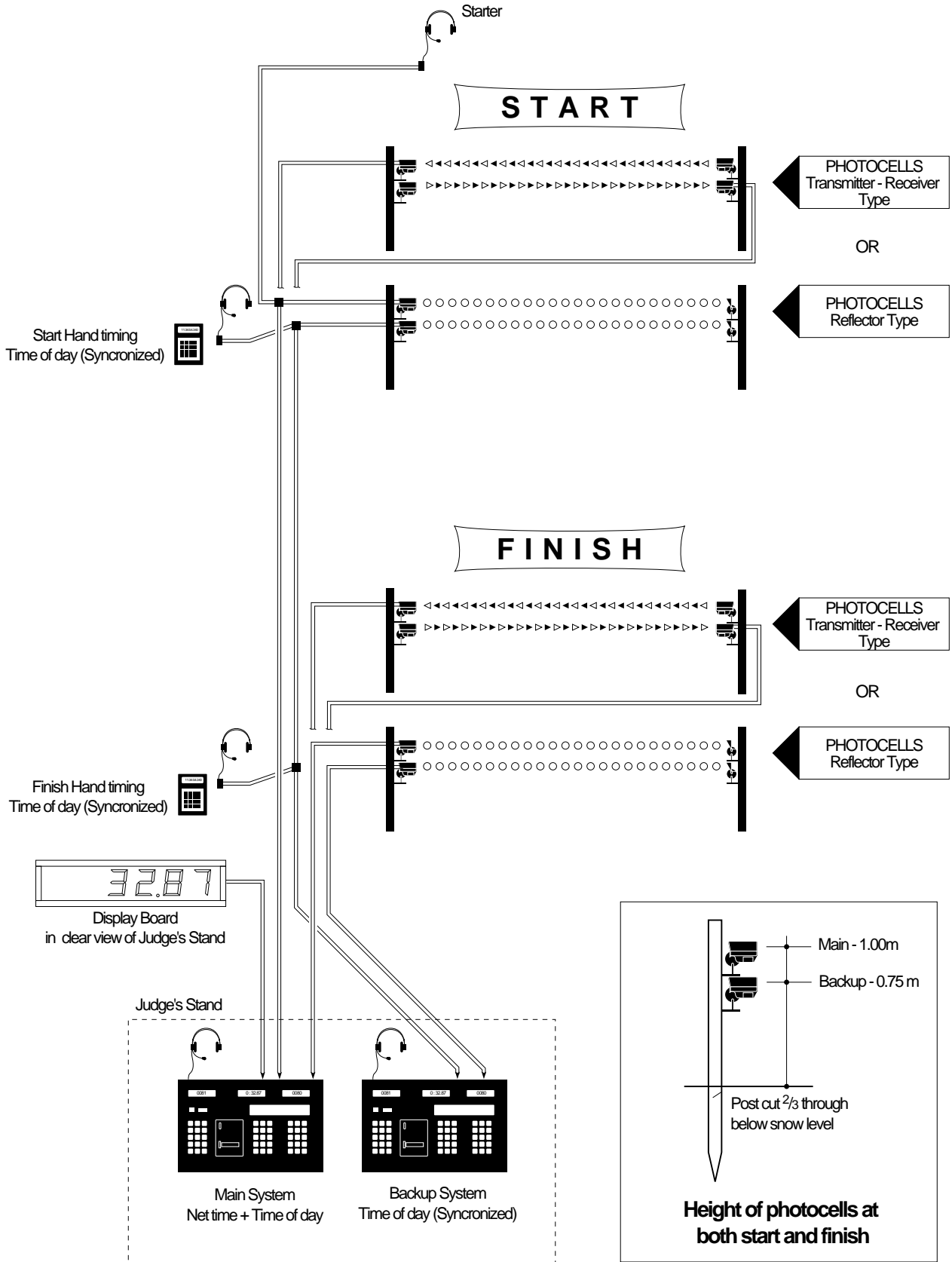
At the end of the competition, it is compulsory to give the Chief Of Scoring the enclosed "Timing Report Form", as well as the printed tapes from the System A, System B and all hand timing records. These reports will be passed on to the head judge and kept with the judge's cards for the event. They will be kept until the official approval of the competition or after any appeal dealing with timing or race results.

A Technical Timing Report Form as prescribed by the FIS must accompany the results and must be reviewed and signed by the Chief of Timing and reviewed and signed by the TD or Chief of Scoring.

All printed records from System A, System B and hand timing must be retained by the OC for a period three (1) month after the competition or after any appeal dealing with timing or race results.

FIS Freestyle World Cup - Single Moguls Timing Plan

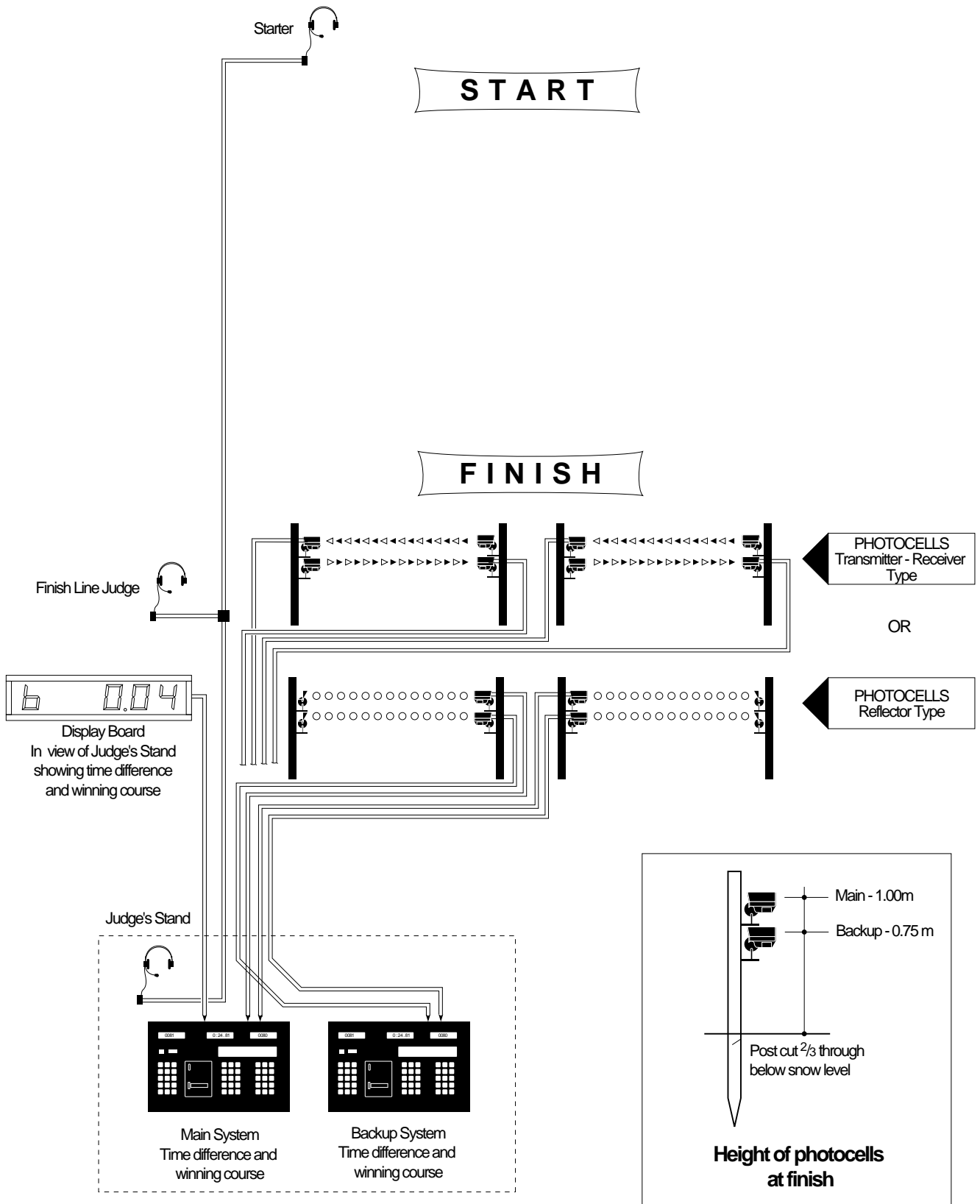
Revision 10/10/1999 - FIS Rules and Technical Sub-Committee



Note: Contact FIS Chief of Scoring for setup location on stand

FIS Freestyle World Cup - Dual Moguls Timing Plan

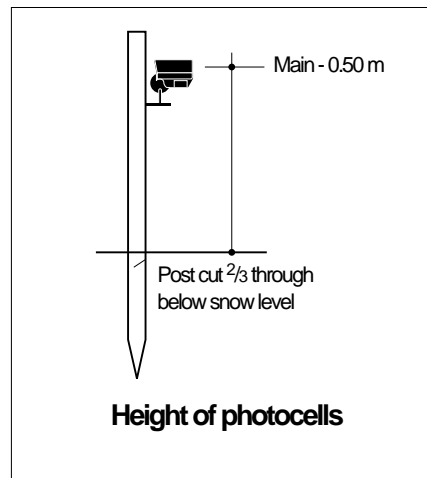
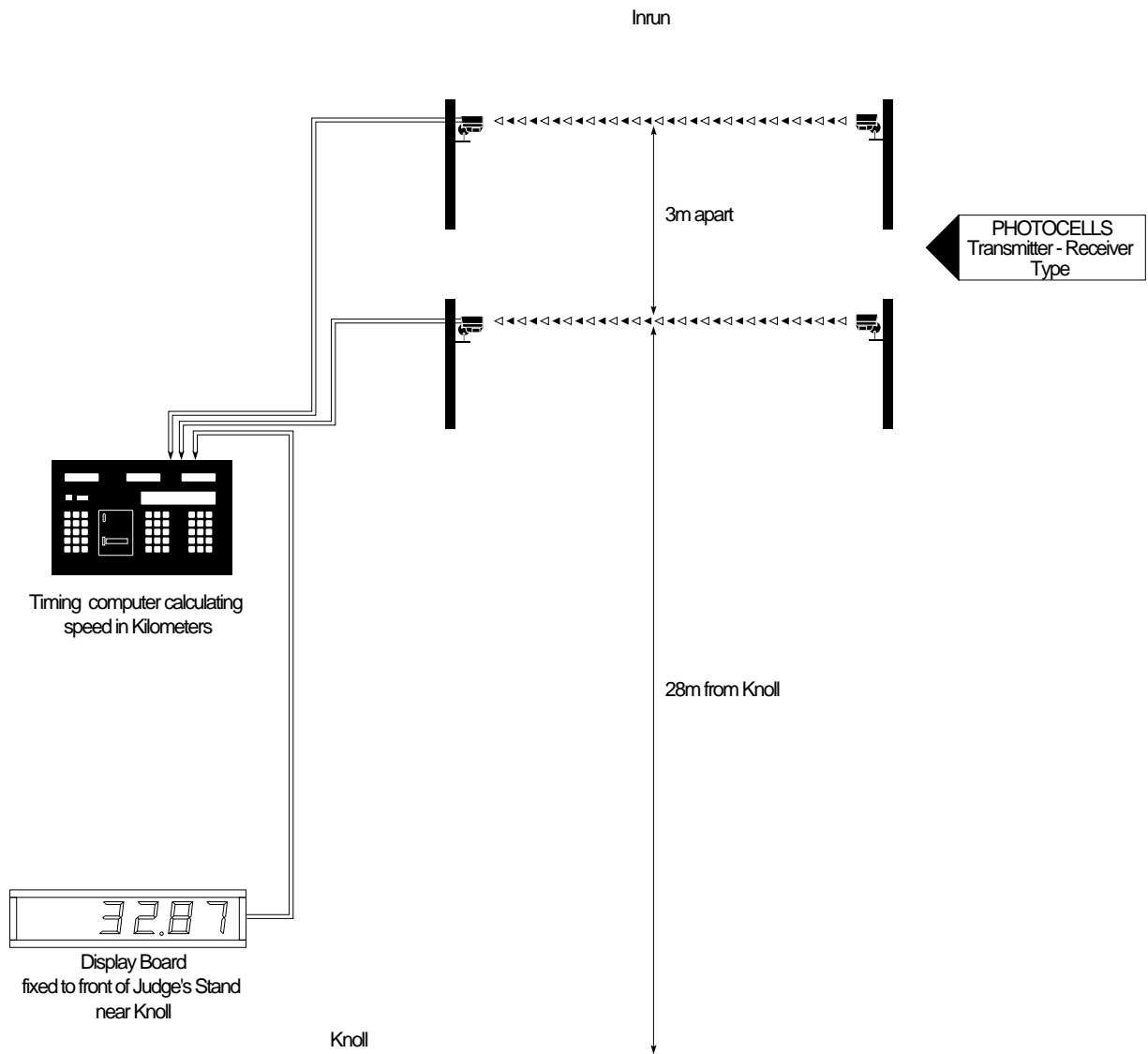
Revision 10/10/1999 - FIS Rules and Technical Sub-Committee



Note: Contact FIS Chief of Scoring for setup location on stand

FIS Freestyle World Cup - Aerial Speed Trap

Revision 10/10/1999 - FIS Rules and Technical Sub-Committee



Timing Technical Report Form

Instructions for Use

Version FR1.0, October 10 1999

The FIS Freestyle Timing Technical Report Form is a required document that must be correctly completed and submitted with all times for all freestyle mogul events in the FIS calendar beginning with the 2000 –2001 competition season. Events that do not submit this form, duly completed, will not be considered for FIS points.

Technical surveys conducted by the FIS since 1995, and the mountain of timing evidence collected by the Timing Working Group during this period have led to the introduction and use of this form, and to many significant changes in the FIS rules on this subject. There is without a doubt a need to have all information concerning the correct judgment of an event by the timing equipment, and techniques being used, properly indicated on the Timing Technical Report Form.

A summary of the last few years of collected information from earlier versions of these forms used at Alpine events requires us to make this form mandatory. Although the vast majority of FIS events are conducted correctly, the form asks questions that can only be replied to if certain minimum technical standards are met. It ensures that at least two homologated, synchronized Time-of-Day systems, plus hand timing are used, and it makes you pay attention to the details of how well the systems operate together. The Timing Technical Report Form minimises errors and is designed to assist you to make the event fair for all who take part.

Please take note: For all events with two phases, it is essential that **a form be completed for each phase (i.e. Qualification and Finals) of the competition** and that re-synchronization of the timers take place before the start of the second phase.

This document represents a step-by-step explanation of what is needed in each square of the Timing Technical Report Form 3.0. Since some of the information being provided will most likely remain consistent (example: equipment being used, equipment serial numbers, event locations...) you can fill out most of this information once and then make photocopies if you use the same items throughout all of your competitions.

Event Name:

Put the same name of the event as it is described in the FIS Calendar and on your Official Results documents. Include discipline and category details.

Example: Blackcomb FIS Freestyle World Cup – Single Moguls

Location:

Use the location as described in the FIS Calendar, or if the event has been moved, the name of the ski area you are at.

Example: Blackcomb BC

Nation:

Use the FIS's 3-letter nation code that corresponds with the host nation.

Example: CAN

Date:

The FIS uses the dd/mm/yyyy format.

Codex:

All events in the FIS Calendar are assigned a code number so that they can be correctly identified. This race ID code number is called the "CODEX" and there is one codex for each race that is assigned by discipline and sex. The Codex for your race is found in the FIS Calendar. It must match the Codex number used on your Official Results.

Example: 1002

Phase:

You need to complete a separate Timing Technical Report Form for both the qualification and finals of an event.

The following section identifies the timing equipment you use at your race.

Brand:

This is the brand name of the manufacturer.

Examples: Longines / ALGE / TAG Heuer / Seiko /

Model:

This is the name of the particular device you are using.

Examples: TL5005 / TDC8000 / CP 505 / MT 400 /

Serial #:

Each device will have a manufacturer's serial number. This is found in a variety of places on timing equipment depending on the model and manufacturer. If not found on the bottom, rear or side of the device, check inside the printer or battery compartment.

Timing Homologation Number

The FIS will issue a list of timing systems that have met the technical standards required for use at FIS events. **Only timing equipment on the approved list may be used at any and all FIS freestyle events that appear in the FIS Calendar.** A new list will not be published each season, rather The Timing Booklet will be published from time to time and additions or deletions to the list of homologated timing equipment will be contained in the precisions to the FIS rules published each fall. **Failure to use equipment on that list will cause your event not to be considered for FIS points.** Each piece of approved timing equipment will have a code number associated with it. A complete list of those codes can be found in the FIS Timing Booklet. Use the appropriate code number for the approved device you are using.

Example: ALG.001.97

Timing System A:

This is the Main Timing System

Timing System B:

This is the Back-Up Timing System

Hand Timing Device:

Type of Hand timing Device - **Example: Stopwatch or ALGE Comet with Memotimer Software**

Photocells at Start:

Describe the photocells you used at the finish using the name of the manufacturer and the model designation.

Photocells at Finish:

Describe the photocells you used at the finish using the name of the manufacturer and the model designation.

Connections to Start

This section deals with how your **connections to the start** were made for both the Main (System A) and Back-Up (System B) timers, and how you handled the voice communications requirements. Check or X the appropriate circle based on how you set up the two systems and the voice communication. Note that for all events you **MUST** have both System A (main system) and system B (backup system) connected to the Start Gate by wire.

Time Data Section

This is the section that provides the proof that your two systems and hand timing were synchronized and functioning as required by the rules. There are 15 pieces of information that you can only get from the timer tapes and that allow the FIS to see that you did the timing

correctly. Two other times come from Hand timing data. Be prepared to gather this information from the timer tapes as it happens, or at least to know where to find it after the event. It is critical that this information be correctly retrieved and indicated on the form.

Switch on Time:

Every timing system needs a period of time for the quartz time base to stabilize after the timer is first switched on. This space is provided to remind you to do so in advance of the run synchronization (Recommendation: at least 30 minutes prior to synchronization).

Indicate the Time of Day this was done.

Synchronization Time:

Once System A and System B are set up and turned on, the rules require that they both be synchronized to the Time of Day no more than 30 minutes before the start of each run. The synchronization should be triggered using the start beam. Indicate the time of day the timers were preset to and synchronized at. This Time of Day must appear on the System A and System B Timing Tapes.

Indicate the Time of Day this was done.

Example: 09:35:00.000

Start at Sync. + 1 Min.:

Once the synchronization to the Time of Day for both systems has been accomplished, have the starter break the start beam after 1 minute has elapsed since the synchronization. Observe the times recorded on both systems and make sure the System A and System B timers are truly running at the same time of day and are giving you very similar times from the triggering of the start. At Synchronization time plus 1 minute, the times you get on each system should be identical, or be within a few 1/1000ths (0.001 sec.). If they are not, you must re-synchronize and try again.

Indicate the actual readings in Time of Day you take from the System A and System B tapes to the 1/1000th of a second.

Example: 09:36:00.123

Start of First Racer (Bib:))

Finish of First Racer

Start Last Racer (Bib:))

Finish Last Racer

These 8 squares provide locations for the readings from the two systems of the start and finish times of your first and last competitors who make it through the course. **Indicate the Time of Day Times that you record on the System A and System B tapes for these competitors to the 1/1000th (0.001) of a second.** Note that there are spaces for indicating what the bib numbers of the particular racers used in your samples were.

Net System A Time:

These 2 positions are used to indicate the actual elapsed net times on course for the two samples of the first and last competitors on course who made it to the finish, as recorded on System A. **These must be identical to the net times used on the results, and are indicated to the 1/100th (0.01) of a second.** This allows you to check if the calculation of the net times on course, as derived from the Time of Day times recorded to 1/1000ths on System A tapes, were done correctly. Times are expressed in Min/Sec/100ths. You should also use this as an opportunity to check that the times used on the results match those calculated from the timer tapes.

Example: 54.22

Net Hand Time:

Hand Timing is mandatory for all events in the FIS Calendar. These positions allow you to provide the evidence that hand timing was used and how well it was done. The 2 hand times used here are net times on course calculated from the Time of Day start and finish times your hand timers record. Calculate the elapsed hand times on course for these two athletes and indicate them here.

Were all times used derived from system A?:

Indicate if all competitors were timed during this run using System A as required by the FIS Rules. Check the appropriate circle, "yes" or "no".

List any or all bib numbers used in the results timed on any system other than system A in this run of this race codex:

If you answered "No" in the section above, list the bib number(s) of the competitor(s) who were timed on System B or using Hand Timing.

Were there any timing anomalies in any of the runs during this event?

Describe any problems or comment upon corrective actions that were necessary during the timing of this phase. Obviously if you have any competitors who have times used on the results from anything other than System A, you can explain this here.

The TD should indicate if any timing component used requires verification or service before the next event:

This provides the opportunity to indicate if any of the equipment, wiring or other components require service or corrective actions before the next event. This can include comments even if all times were derived from System A.

We certify that the timing and calculations of this event adhered to the prescribed FIS regulations in force.

This is a direct statement that requires a simple "yes" or "no" answer.

Both the FIS Technical Delegate and the Chief of Timing must review and complete this documentation and attest to the accuracy of the information contained herein. Print and sign your names and provide the other details requested.

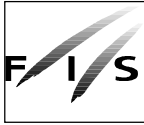
Final Notes and Suggestions:

The timing equipment list that is approved by the FIS, the rules and procedures described in the FIS Freestyle Timing Booklet and the use of the Timing Technical Report Form ensure that many common mistakes that can jeopardize the accuracy of times and results are minimised or avoided.

We are certain that your attention to detail in this regard will contribute to a successful event and we extend our thanks and best wishes for the serious work that you undertake for the benefit of ski competition worldwide.

FIS Timing Working Group

Federation International de Ski / Timing Technical Report Form
 To be included with Technical Delegate Report - One Form required for each phase of each Codex

Event Name	Blackcomb FIS Freestyle World Cup - Single Moguls		
Location	Blackcomb, BC	Nation: CAN	
Date	30.03.98		Form Version FR1.0 / Oct 10 1999
Codex	1002		
Phase	Qualification		

	Brand	Model	Serial Number	Timing Homologation #
Timing System A	ALGE	TdC8000	94.1023	ALG.002.97
Timing System B	ALGE	S4	234-95	ALG.005.97
Hand Timing Device	ALGE	Comet	1022	ALG.003.97
Photocells at Start	ALGE	RLSc		
Photocells at Finish	ALGE	RLSc		

Connections to Start	System A	System B	Voice Comm.
By Wire	X	X	X
By Radio	Not Permitted	Not Permitted	X

	System A	System B	System A, Net Time	Hand, Net Time
Switch On Time	08:15	08:20		
Synchronization Time	09:35:00.000	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
Start at Sync + 1 min.	09:36:00.123	09:36:00.123	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
Start of First Comp. (Bib: 1)	10:01:01.012	10:01:01.013	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
Finish of First Competitor	10:01:55.234	10:01:55.239	54.22	54.36
Start Last Comp. (Bib: 98)	11:15:45.986	11:15:45.988	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
Finish Last Competitor	11:16:48.876	11:16:48.880	1:02.89	1:02.95

Were all times used derived from system A?	Yes:	No: X
--	------	-------

List any or all bib numbers used in the results timed on any system other than system A in this run of this race codex:
 System B times were used for competitor 56 and 58 due to blowing snow problems that affected the photocell for system A.
 A hand time was used for bib 60 as an official inadvertently stopped in the finish line photocells as this competitor crossed the finish.

Were there any timing anomalies in any of the runs during this event?
 Blowing snow and lack of finish line control caused 3 timing corrections to be applied.

The TD should indicate if any timing component used requires verification or service before the next event.

We certify that the timing and calculations of this event adhered to the prescribed FIS regulations in force.
 YES: X NO:

Chief of Timing	Name (Print)	Signature	Date
Ferd Burfell			30.03.98

Technical Delegate	Name (Print)	Signature	FIS ID#	Date
Joe Fitzgerald (CAN)			155	30.03.98

Federation International de Ski / Timing Technical Report Form

To be included with Technical Delegates Report - One Form required for each phase of each Codex

Event Name			
Location		Nation:	
Date			
Codex			
Phase			

	Brand	Model	Serial Number	Timing Homologation #
Timing System A				
Timing System B				
Hand Timing Device				
Photocells at Start				
Photocells at Finish				

Connections to Start	System A	System B	Voice Comm.
By Wire	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
By Radio	Not Permitted	Not Permitted	<input type="radio"/>

	System A	System B	System A, Net Time	Hand, Net Time
Switch On Time				
Synchronization Time	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
Start at Sync + 1 min.			XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
Start of First Comp. (Bib:)			XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
Finish of First Competitor				
Start Last Comp. (Bib:)			XXXXXXXXXXXXXXXXXXXX	XXXXXXXXXXXXXXXXXXXX
Finish Last Competitor				

Were all times used derived from system A?	Yes: <input type="radio"/>	No: <input type="radio"/>
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List any or all bib numbers used in the results timed on any system other than system A in this run of this race codex:

Were there any timing anomalies in any of the runs during this event?

The TD should indicate if any timing component used requires verification or service before the next event.

We certify that the timing and calculations of this event adhered to the prescribed FIS regulations in force.

YES: NO:

Chief of Timing	Name (Print)	Signature	Date

Technical Delegate	Name (Print)	Signature	FIS TD #	Date

Criteria for FIS Approved Timing Devices for FIS Ski Competitions

The following criteria must meet all timing devices that are used for FIS Ski competitions and that are produced after May 1997.

- Timer: ☞ The timing device must have an internal, or external printer. Printing through a computer is not allowed.
- Printer: ☞ This printer must print at least in a chronological order the time of day.
☞ For each printed time of day there must be an indication of the timing channel.
☞ If it is possible to do manipulation or correction of times in the timer the printer must mark such a corrected time.
- Power Supply: The timing system must work without power supply from the mains for four (4) hours at 25°C and one printout per minute and two (2) hours at -10°C and one printout per minute.
- Operation Temperature: The timing device and printer must work at ambient temperatures from -10° to +40°C
- Measuring Range: Time of day mode must be possible in hours, minutes, seconds and 1/1000, or better.
- Timer Precision: Must measure up to the 1/1000 second in time of day mode
- Quartz: ☞ Quartz accuracy must be below +/- 10 ppm at a quartz temperature from -10° to +60°C.
☞ Aging of the quartz must be below +/- 3 ppm per year.
☞ With adjusted quartz frequency the drift must be below +/-0.5 ppm at 25°C.
- Impulse Triggering: ☞ The delay of impulses is not allowed to be higher than 1/1000 sec.
☞ The delay of impulses must be constant, the range must be less than 1/10000 sec.
- Timing Channels: The timing device needs a minimum of two independent channels, one for start and one for finish.
- Synchronization: Synchronization between main- and backup timer must be possible.
- Electromagnetic: The timing device must meet the standards of IEC (International Electronic Commission). This means the timing device must function satisfactorily in its electromagnetic environment without introducing intolerable electromagnetic disturbances to anything in that environment.
- Truncation: The truncation to 1/100 of seconds must be made after the calculation of the run time. The digits of the run time after the 1/100 are thrown away.

e.g. : Start Time: 10:00:00.132
 Finish Time: 10:01:30.259
 Calculated Run Time: 1:30.127
 Run Time after truncation: 1:30.12

Homologation: Manufacturers wishing to have their timing devices homologated for use in FIS races must supply all technical information indicated above to the "FIS Timing Working Group" c/o Attilio Capella at the FIS Office in Oberhofen, Switzerland.

HOMOLOGATED BY FIS TIMING WORKING GROUP APPROVED BY FIS RULES COMMITTEE

Timer used as wireless data transmission for optional back-up timing must also be on this list.

Company Name	Timer Name	Codex Timing
ALGE	TDC 4000	ALG.001.97
	TDC 8000	ALG.002.97
	COMET	ALG.003.97
	S3	ALG.004.97
	S4	ALG.005.97
Chrono CAHOUR	Data 2000	CAH.001.97
	Data 4000	CAH.002.97
Digitech	Master	DIG.001.99
HEGO	HEGO 6000	HEG.001.97
	HEGO 7000	HEG.002.97
	HEGO 8000	HEG.001.99
LONGINES	TL2000	LON.001.97
	TL3000	LON.002.97
	TL5005	LON.003.97
MIC	MTS 2000	MIC.001.97
MICROGATE	REI	MGA.001.97
	RACETIME2	MGA.002.97
OMEGA Electr.	OGM5005	OME.001.97
	OTR7	OME.002.97
	POWERTIME	OME.003.97
	ARES 21	OME.004.97
SEIKO	MT-400	SEI.001.97
	CT-400	SEI.002.97
	CT-300 / CT-300II	SEI.003.97
	CT-916 / CT-916II	SEI.004.97
TAG Heuer	CP 501	TAG.001.97
	CP 502	TAG.002.97
	CP 503	TAG.003.97
	CP 505	TAG.004.97
	PTB 605 With external printer. No printing through PC	TAG.005.97
	CP 705	TAG.001.99
TELECHRON	DIGITIME	TEL.001.97
WIMTEC	TIME-MASTER/H	WIM.001.98

System A	System B	System B by radio	Switch on to synchro	Sychro to 1st racer	Delta A-B 1st racer	Delta A-B last racer	Delta T 1st to last
ALG.005.97	ALG.005.97	No	1	3:37	0.013	0.013	0:35
ALG.005.97	ALG.005.97	No	30	0:12	0.006	0.006	0:49
ALG.005.97	ALG.005.97	No	30	2:20	0.008	0.009	0:28
TAG.005.97	LON.003.97	No	1:29	19	0	0.06	4:30
TAG.005.97	LON.003.97	No	26	23	0.007	0.055	4:10
TAG.005.97	LON.003.97	No	48	27	0.007	0.048	3:00
TAG.005.97	LON.003.97	No	17	43	0.01	0.04	2:25
ALG.001.97	ALG.001.97			0:04	0.404	3.239	0:31
ALG.001.97	ALG.001.97			0:15	1.379	3.842	0:27
ALG.001.97	ALG.001.97			0:58	5.272	12.561	1:20
ALG.001.97	ALG.001.97			0:49	4.461	9.408	0:54
LON.003.97	LON.003.97	No	15	1:01	0.004	0.005	3:11
LON.003.97	LON.003.97	No	15	0:40	0.003	0.002	2:51
LON.003.97	OME.002.97	Yes	1:00	15	0.013	0.039	2:30
LON.003.97	OME.002.97	Yes	50	40	0.001	0.005	1:50
LON.003.97	OME.002.97	Yes	30	20	0.049	0.027	1:00
LON.003.97	OME.002.97	Yes	30	3:15	0.034	0.057	0:27
ALG.001.97	ALG.002.97	No	7	9	0	0	1:20
ALG.001.97	LON.003.97	No	10	9	0.001	0.007	1:03
ALG.001.97	LON.003.97	No	6	21	0.004	0.005	1:12
ALG.001.97	ALG.001.97	No	10	22	0.01	0.01	0:33
ALG.001.97	ALG.001.97	No			0.03	0.06	1:02
ALG.002.97	ALG.001.97	No	2:40	1:10	0	0	1:30
Telecron 1210	Telecron 1210	No	5	30	0	0.02	3:40
ALG.001.97	ALG.001.97	No	9	56	0.043	0.017	4:08
Telecron 1210	Telecron 1210	No	35	25	0	0	1:00
ALG.001.97	ALG.001.97	No	1	29	0.01	0.01	1:03
Telecron 1210	Telecron 1210	No	34	25	0	0.01	3:45
ALG.001.97	ALG.001.97	No		30	0.012	0.031	1:05
ALG.001.97	ALG.001.97	No		15	0	0.026	0:52
Telecron 1210	Digicron 224/c	No		47	0.01	0	4:15
Telecron 1210	Telecron 1210	No	3	29	0	0	3:20
Tag H.Multi CM	Tag H.Multi CM	No	35	1:00	0.01	0.025	1:20
Tag H.Multi CM	Tag H.Multi CM	No	2:50	1:30	0.016	0.023	0:35
SEI.002.97	SEI.003.97	No	5	1:25	0.01	0.01	0:40
SEI.002.97	SEI.003.97	No	5	4:10	0.01	0.01	0:36
SEI.002.97	SEI.003.97	No	5	2:50	0.01	0.01	0:30
SEI.002.97	SEI.003.97	No	5	5:25	0.01	0.01	0:30
ALG.001.97	Arbitar 1	No		4	0.141	0.373	0:25
ALG.001.97	Arbitar 2	No	2	30	0.01	0.012	1:10
LON.003.97	LON.003.97	No	1:00	1:55	0.001	0.001	1:02
ALG.001.97	ALG.001.97			44	0.01	0.02	0:15
ALG.001.97	ALG.001.97	No		16	0.01	0.01	0:17
Alpin 1000	Alpin 1000	No	5	1:02	0.057	0.07	4:26
Alpin 1000	Alpin 1000	No	5	1:14	0.051	0.076	0:35
OME.002.97	OME.002.97	No	5	30	0	0.09	1:30
TAG.004.97	TAG.004.97	No		4	0.02	0.019	1:15
MGA.001.97	MGA.002.97	Yes		13	0	0	2:30
LON.003.97	LON.003.97	No	20	40	0	0.001	1:30
ALG.002.97	ALG.002.97	No	45	30	0.003	0.008	1:28
ALG.002.97	ALG.001.97	No	15	1:30	0.03	0.02	4:50
TAG.005.97	ALG.003.97	No	30	34	0.001	0.007	1:17
LON.003.97	LON.003.97	No	1	1:30	0.002	0.049	3:55
TAG.005.97	ALG.005.97	No	1:00	30	0	0.001	1:15

NEXT STEPS

In future, we shall try to systematically homologate all pieces of timing equipment, impulse captors and transmitters according to the same principal as described in this document.

So huge a task can only be carried out over a longer period, approximately two years, as the penalisation of loyal and honest organisers with excessive regulations should be avoided.

CONCLUSION

We hereby wish to thank all members of the "FIS Timing Working Group" who have used every endeavour to realise this "FIS FREESTYLE TIMING BOOKLET".

We are fully aware that there are still some imperfections and would welcome any constructive proposal and as the works proceed, this document will be completed to improve the knowledge of the FIS, the timing staff and all Freestyle Skiing competitions.