

Regulations

**26th World Championship
for Loggers**

**Valli di Lanzo (TURIN)
ITALY**

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1. Basic Regulations

1.1 General

1.1.1 Goal of the world championship

Short-term goal of the competition is the presentation of the latest achievements in logging techniques, logging machinery tools and logger's safety equipment and a comparison of these at an international level, as used by skilled professional loggers. In planning and carrying out the competitions, special attention is paid to safety aspects in working techniques.

Long-term aim of the competitions is to increase the appreciation of the loggers' profession and to draw general attention to the loggers on both a national and international level. These competitions play a particularly significant role in creating international contacts between the professional forest work, which contributes to the general endeavours of decreasing prejudices, and furthering peaceful coexistence between nations.

1.1.2 History of the world championship for loggers

Competitions for loggers have been arranged in different parts of the world for many decades. The rules of these competitions have varied greatly depending on circumstances as well as on working tools and working techniques used. The technical development of the combustion-engine power saw in the fifties meant the beginning of a new era in logging work. From that time on the handling skill and the chain saw, too, have been included in the competitions. At first, these competitions were carried out exclusively on a national level, or perhaps as common events between a few neighbouring countries. During the first years of these competitions and as a result of insufficient development of the rules commonly used in competitions, it sometimes happened that championships could not be arranged due to work safety reasons.

On an international level, the most comprehensive competitions for loggers working with the chain saw developed on the initiative of Hungary and former Yugoslavia in the sixties. The work that has been done to develop this form of competition, which was first arranged between these two countries, has attracted an ever increasing number of countries and continents to participate.

The list of countries that have arranged competitions is as follows:

I.	1970	Hungary and Yugoslavia	XIV	1984	Sweden
II.	1971	Yugoslavia	XV	1986	Czechoslovakia
III.	1972	Hungary	XVI	1987	Norway
IV.	1973	Romania	XVII	1988	Denmark
V.	1974	Norway	XVIII	1991	USSR
VI.	1975	USSR	XIX	1993	Switzerland
VII.	1976	Bulgaria	XX	1994	Romania
VIII.	1977	Finland	XXI	1995	Finland
IX.	1978	Czechoslovakia	XXII	1996	Germany
X.	1980	Norway	XXIII	1998	Austria
XI.	1981	Poland	XXIV	2000	Norway
XII	1982	Hungary	XXV	2002	Scotland
XII	1983	Finland	XXVI	2004	Italy

1.2 Basic Regulations for the arrangement of world championship for loggers

1.2.1 The international organising committee

The international organising committee has been appointed for the sake of securing the goals and the level of the world championship.

The international organising committee consists of six (6) members with the right of decision, one of them representing the country organising the championship, and the other ones being representatives of the countries that have arranged championships in the preceding four competitions. The "oldest" member is replaced by a representative of the country, whose turn it is to arrange the championship. The latter also acts as the chairman of the committee.

The members shall represent and have thorough knowledge of forest work, logging techniques and logging work organisation, as well as of the organisation and execution of national and international competitions for loggers. The members must have a practical understanding of forest work and also a sufficient knowledge of English and / or German. The members of the organising committee carry out their functions without financial compensation with the aim of developing the competitions as a form of international activity.

1.2.2 Tasks of the international committee

- a) To handle and confirm the rules of the world championship for loggers and to take into consideration all changes and additions that the organising country or other participating countries may suggest.
- b) To determine the places where the competitions are to be held and to make other arrangements in accordance with the rules.
- c) To deal, at a meeting held during or after the competition, with the applications for the arrangement of the following competitions in 2004, 2006 etc. and for every second year , and to decide where the following competition is going to be held.
- d) To act as the highest jury (international) during the competitions and to settle every difference in opinion by an open vote.
- e) To control the level of the arrangements made for the competitions in order to see to it that similar conditions are offered to all participants.
- f) To select the judges among the technical leaders of the teams and to define the tasks of the judges and assisting personnel that has to count the scores, as well as to supervise their activities.
There shall be two technical leaders assigned to each measuring team.
Should a person that has been appointed judge or who belongs to the assisting personnel or to the group that has to count the scores turn out to be biased or prejudiced, the organising committee is entitled to replace him.
- g) To cast lots on the order of performance of the participants and to see to it that unbiased conditions are created for all participants.
- h) To determine at a meeting held before the competition, suitable measuring devices to be used in measuring the results.
- i) To deal with remarks and protests made by the participating delegations during the competitions and to make final decisions concerning them.

- j) When required, to disqualify those who violate the rules of the competitions or who otherwise offend the spirit of the competitions.
- k) To make summaries of the registers of the competitions and to announce the winners.
- l) To award the winning delegation the challenge cup, which will be in the custody of the country of the winning delegation until the following competition. The challenge cups shall be handed over to the organising committee at the beginning of the following competition, furnished with the respective engraving. In addition, challenge cups can be given to the winners by the host country.
- m) The organising committee is obliged to see to it that the competitions are carried out in an honest way and in the spirit of friendship, co-operation and mutual respect.

1.2.3 Participation in the competitions

Participation in the world championship for loggers is within the discretion of each country. The rules confirmed by the international organising committee shall be observed in the competitions. Each participating country may send a national delegation to the competition, on the choice and training of which it makes its own decisions. The main principle is to arrange competitions for professional loggers, who use the chain saw in their work, and therefore, the name of the manufacturer of the saws concerned may appear on the equipment, clothes and start number.

1.2.4 Organisation of competitions

Competitions are held according to the international organising committees' decision, in one of the participating countries that has voluntarily accepted to carry out the organising work.

1.2.5 Tasks of the organising country

- a) To give, not later than during the preceding competition, either a verbal or a written application to the organising committee concerning its willingness to organise the following competition.
- b) To arrange, at the latest 5-6 months before the competition, a meeting of the members of the International Organising Committee.
- c) To get familiar with the sites of the competition and other arrangements affecting the general procedure of the competition.
- d) To prepare a list of problem points, which might possibly come up and which can be discussed at the Jury's meeting to be held during the course of the competition.
- e) To discuss other possible problems, which because of their nature or actuality are to be dealt with by the organising committee.
- f) To inform the invited nations of any change of rules or amendments based on conditions at the locality not later than 6 months before the opening of the competition. If separately agreed upon with the organising country, a member of the organising committee may bring an expert with him to the meeting. The expert, however, has no right to vote.

g) The invited delegation of the countries participating in the competition is to consist of the following:

1. One head of the delegation
2. One technical leader of the delegation
3. Three contestants (loggers)
4. One junior contestant (optional)

The junior competitor must be only 21 years or younger on the date of the competition and must only compete once as a junior. The junior competitors will compete to the WLC rules but the junior scores will not be part of the team score. There will be a separate prize giving for the junior competition.

Technical leaders may be elected members of the jury for different contests during the competition.

- h) To invite, from each of the member countries of the international organising committee, an extra representative in addition to the delegation as a member of the international organising committee.
- i) To appoint the measuring groups.
- j) To instruct the measuring groups and the judges concerning the method of measuring and measurement devices.
- k) To forward six (6) copies of these regulations in English to the participating countries and one (1) copy to each member of the international committee.
- l) To invite the previous world champion to defend his title. If he takes part in the contest other than in the team of his country, the country in question will pay all the expenses caused by him.
- m) If the delegation come without an interpreter (German / English) the organising country will provide a translator. The reservation therefore should include a notice whether a translator needs to be provided by the organising country.
- n) Apart from the official representatives, the organising country may invite observers and other guests to attend the competition.
- o) The organising country shall see to it that the participants coming first, second and third in the main competitions are awarded gold, silver and bronze medals, honorary awards as follows:
1. As teams
 2. As individuals for total result
 3. As individuals in each separate event

The Junior competitors will be awarded as follows:

1. The winner in each event
2. Gold, silver and bronze overall

p) The country organising the competition shall bear the costs incurred in connection with the arrangements made for the competition:

1. The costs of the preparatory meeting of the members and experts of the international organising committee (travel expenses to the country concerned, accommodation, meals etc.).
2. Costs of the upkeep of the delegations participating in the competition as well as possible interpreters and the members of the international organising committee during the course of the competition (travel expenses through the country concerned, accommodation, meals, etc.)
3. All expenses caused by the technical preparations for the competitions.
4. Costs for medals and other awards and souvenirs.

1.3. Events of the World championship for loggers working with the chain saw

The competitions will be carried out in the following separate events:

- Event I Tree felling
- Event II Limbing
- Event III Fitting a new chain
- Event IV Bucking by combined cut
- Event V Precision bucking

Each host country might change the number of the events. However, event III and IV has to be in that order.

2. General Regulations for the arrangement of the Competitions

2. 1 The Contestants and the Chainsaw

2.1.1 The Contestant

In addition to the chain saw the contestant has the right, to use other tools during his performance, these, however shall be of a type in common use in forest work (wedge, hammer, axe, felling pad, etc.)

The contestant is not allowed to use any separate marking instrument, for example marked gloves. The contestant shall use a forest worker's dress with a forest workers jacket/sweater with signal colour, chainsaw leg protection, chainsaw protective footwear, hard hat, eye protection, ear protection as well as chainsaw protective gloves or mitts. Normal eye glasses are not allowed as protection. All chainsaw protective clothing must be CE marked.

The contestant must operate the chainsaw right handed for safety, that is, the right hand on the rear handle and the left hand on the front handle.

The contestant has the right to concentrate (max. 1 min.) before each performance. The contestant must take out an insurance policy in his / hers native country. The competitors, team leader and technical leader take part in the competition at their own risk.

2.1.2 The Chainsaw

The chain saw shall be of a type intended for professional forest work with standard equipment and no alteration to standard parts. No visible structural changes must be made on it. Contestants can only then begin when he has signed a note declaring that the saw he is to use is of a standard type. Any change on the saw, the bar or the saw chain will be punished with disqualification by the jury.

The contestant must prove that the felling spikes as fitted to the chainsaw are a standard fitment and have not been altered. The competitor must therefore be able to show a parts list for their make and model of chainsaw showing the felling spikes. The standard felling spikes can therefore be used for marking during the tree felling event because it is not possible to prevent the spikes from marking the stem.

Any marks other than those made by the manufacturer in serial production on the saw or on the bar are not allowed.

All contestants must keep the chain cover on, during transportation and during movements from place to place within the competition area.

The length of the cutter link of the saw must be at least 3 millimetres measured on the shortest part of the top plate.

The contestants shall make all performances using the same saw body. You are allowed to use 3 bars and 4 chains during the competition. Before the events the saw will be controlled and marked. If a competitor wants to use a chain saw not commonly used at an international level, the head jury can allow it.

The participating team may have a spare saw, but this saw too, must be accepted and marked by the jury. This extra saw may only be used if a contestant's saw is broken. Permission to use the extra saw is obtained from the judges of each event in cases when the saw does not start within 5 minutes. In unclear cases, the permission to use another saw is given by the Head Jury.

2.2 Safe storage of the Equipment

The examined chain saws and other equipment of all contestants are safely stored under lock. The chainsaws will be given to the contestants by the jury only for the single disciplines and afterwards they will be stored again by the jury.

2.3 Protesting

Only the contestant has the right to protest against the object of the contest (e.g. the tree) and against the scoring (results). The protest against the object of the contest has to be made before the beginning of the performance. Protests made after the performance will not be accepted. The protest against the scoring shall be made within a period of 30 minutes, beginning at the moment of receipt of the copy of the results. The decision of the Head Jury is final.

2.4 Safety Regulations

2.4.1 Isolation of the Competition site

The site of the competition is isolated, and the only persons who may enter it are the members of the Head Jury, the judges, the measuring assistants, the contestant whose turn it is and his interpreter, furthermore representatives of the press under guidance. The team leader may enter the site of competition when called upon by the Head Jury.

2.4.2 Work Safety

Violations of the general work safety rules according to table 1 are taken into consideration from the moment when the contestant has entered the competition site. Concrete violations of the general work safety rules are indicated in the protocol by describing the type of violation and by mentioning how many times the violation has been repeated.

Every violation will be counted and punished separately.

Table 1

Penalty points for violation of general safety rules

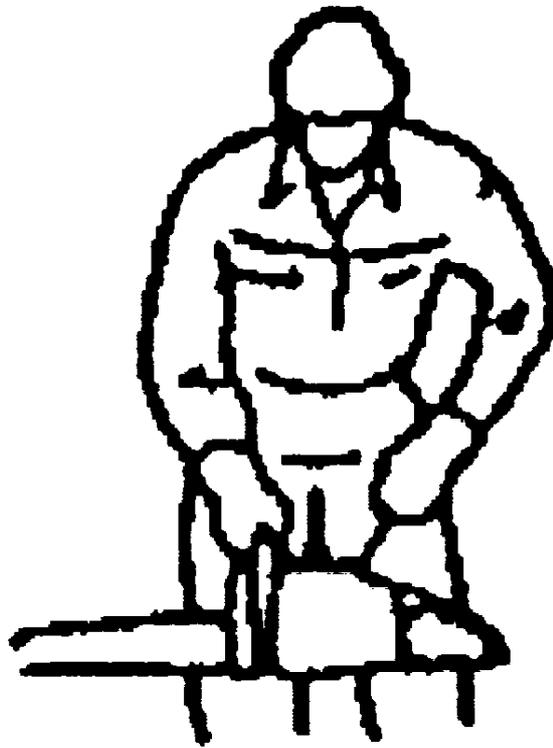
No.	Violations of general safety rules	Penalty points Events				
		I	II	III	IV	V
1	Appearance on the competition site without call	50	50	50	50	50
2	Working without gloves or other hand protection, hard hat, eye protection, ear protection, protective footwear, leg protection, forest jacket /each time	20	20	20*	20	20
3	Starting the saw in an incorrect way	30	30		30	30
4	Too early start	20	20	**	20	20
5	Touching the saw chain by hand while the engine is running / each time	50	50		50	50
6	Moving from place to place when the saw chain is running / each time	20	20		20	20
7	Saw not starting within 5 min.	30	30		30	30
8	Using the saw one-handed when the chain is running	20	50		20	20
9	Injury that does not require medical care	20	20	20	20	20
10	Injury that requires medical care	50	50	50	50	50
	First-aid kit is missing					
	NO PERMISSION TO START					

* Only protection footwear, leg protection and forest jacket/sweater are required in event III.

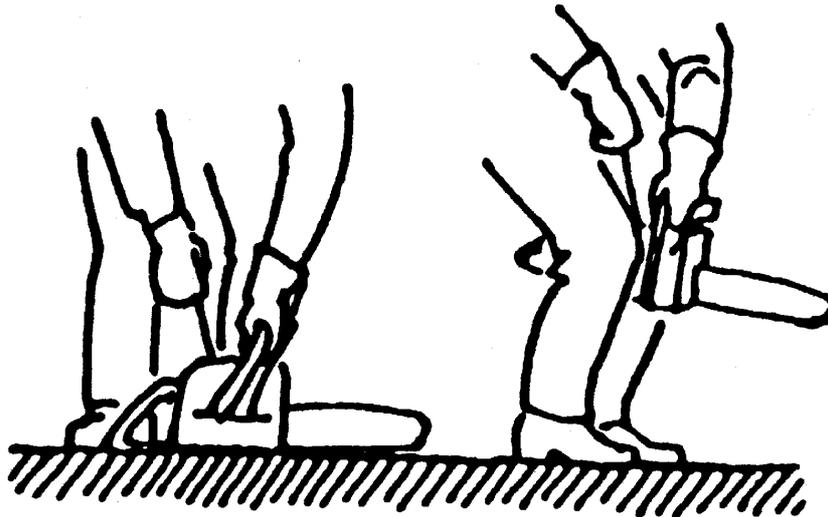
** After the 3rd early start, the contestant gets disqualified in event III.

The previous rules are noted in all the protocols from point 11 to point 20.

The organiser of the competition shall take all measures in order to guarantee work safety during the competitions, but the organiser will not be responsible for accidents caused by the contestants themselves during their preparation for the performances or during the performance itself or by faulty tools.



Wrong



Right

Fig. 1 How to start the saw in a correct way

2.4.3 Elimination of dangerous situations

The organiser of the competitions provides helpers and equipment for elimination of possible dangerous situations during the competitions (loosening of pinched saw bars, bringing down hung-up trees, etc.)

2.4.4 Behaviour

The contestants shall observe regulations and given instructions and show a respectable attitude toward the technical personnel, the other contestants, the judges and Head Jury. Contestants who violate the regulations may be disqualified by the decision of the Head Jury.

2.5 Demonstration of Events and Training

2.5.1 Demonstration of the Events

Upon the competing teams' request, the organisers might perform a demonstration of the events in detail, in accordance with the rules, on the day of the competitions.

2.5.2 Training of the Judges

The judges are selected by the Host Country and are given instructions concerning the individual events. The Technical leaders are only observers.

The instructions deal with the measuring equipment to be used, the protocols and the uniform interpretation of the regulations.

2.6 Measurement Rules

2.6.1 Measuring Groups

The measuring group will undertake the measurements and readings. The measurement group has to inform the protocol assistant of the result. In unclear cases, the judges have to control the measurements and readings of the measuring group and control the work of the protocol assistant. The contestant is allowed to follow the measuring of the measuring group, he is not allowed to give any comments during the measuring. The appointed international judge (ie a Technical Leader) will oversee the measuring team in a hands off manner.

2.6.2 The Protocol

When the protocol has been filled in with all the measurements and the present time, the judges and the contestant sign it and a copy is handed out to the contestant. A helper brings the original protocol to the calculating group.

2.6.3 Timekeeping and reading on measuring instrument

If not otherwise described under the rules for the respective event, here are the rules for all the events:

- the times are taken by the certified timekeepers
- the measures of distances and corners are noted in the protocols without supplementings

The calculating group calculates the mean and rounds off/up the results, to conform them to the precision requested by the point list. These rules will be followed:

Supplementing of the times:

- The medial values will be rounded

Ex.

10,51 sec will be rounded off to 11 sec

10,50 sec will be rounded off to 11 sec

10,49 sec will be rounded off to 10 sec

Supplementing of distances and corners:

- The medial values will be rounded off

Ex.

10,51 cm will be rounded off to 11 cm

10,50 cm will be rounded off to 11 cm

10,49 cm will be rounded off to 10 cm

16,50 mm will be rounded off to 17 mm

88° 30' will be rounded off to 89° if the table requires the precision to degree

88° 29' will be rounded off to 88° if the table requires the precision to degree

Measurements in degrees are carried out in the 360° system.

In measuring the time, stopwatches are to be used which can measure a hundredth of a second.

2.7 Evaluation of the Performances

The starting order of the first four events is fixed on the day previous to the beginning of the Competition in accordance with the following rules:

- the names of the teams are extracted from a box and the order of the extraction is the starting order
- each team can be made up by max 3 seniors and 1 juniors. The seniors will have the first three numbers of the team assigned in the alphabetical order and the junior will have the fourth number
- the starting order of the last event will be compiled on the basis of the classification of the first four events. The last in the classification of the first four events will be the first to start in the last one, the second-last will be the second and so on.

The performance of each contestant is evaluated by points awarded or given as penalty.

Points are awarded to the contestants for the time spent on the performances and for the accuracy and quality of their work.

Penalty points are given for violation of the work safety rules and for mistakes when carrying out the performance.

The penalty points are deducted from the total number of points gained for each separate performance, down to 0 points.

The best performance is the one with the highest score. For evaluation of the contestants' performance, the judges use measuring devices and other tools in accordance with the rules. The results of measurements are recorded in the protocol.

A calculation group calculates the results according to the regulations.

The judges and the leader of the calculating group sign the protocol, which will then be confirmed by the Head Jury.

If two contestants or teams gain the same number of points for the whole competition the one who has received less penalty points shall be the winner.

If the result is still the same, the winner shall be the one who has the higher score of points in felling.

3. Rules of the Competition

3.1 Event I: Tree Felling

3.1.1 Preparation of the Felling site

The felling site shall be prepared in the normal way by removing dangerous and inconvenient trees and by preparing skidding tracks, loading sites and roads for timber transportation as well as a catering establishment. Other activities to be carried out are the clearing of a safety zone; preparation of space for the contestants, visitors and technical personnel. The felling site should have a maximum slope of not more than 10, if possible.

On the felling site a number of trees, slightly exceeding the number of contestants are chosen for felling. As far as possible the trees should be of the same height and have the same breast height diameter (BHD). The organising country can select between a diameter of 28 cm and 38 cm. The diameter of the assumed place of the felling cut should also be the same, as far as possible. The lean of the trees must not exceed 2 degrees. The tree's crown must not be of an extraordinary eccentric shape. The root collar must not be extraordinarily large. The organiser must make sure that the trees can fall freely in the general direction of felling.

This must also be guaranteed even if a clearing is not possible due to reasons concerning the forest cultivation or nature protection.

The felling competition site will be a thinning site due to concerns about the high risk of windblow.

The number is painted on the stem of each tree prior to the drawing of numbers and a measuring mark of 130 cm is made by a coloured ring to indicate the BHD. A second mark is made (coloured ring) 20 cm above the highest point of the root collar. This is to show the maximum starting point of the felling cut. Should no root collar be visible, the second coloured ring is fastened 110 cm below the BHD mark.

3.1.2. Inspection of the Felling site

The contestants are allowed to study their trees. If the tree fulfils the demands of the rules, the contestant has no right to make a protest against the tree to be felled. He may do so however, if the tree is decayed. If the contestant does not accept the tree that has been determined by lot to be felled by him, he should immediately make a protest within 30 minutes, written through the judges to the Head Jury. If the international jury decides that in spite of difficult circumstances (wind) the event must continue then no protest is possible.

3.1.3. Performance of the felling operation

For felling, the contestant uses his chain saw and auxiliary equipment by choice (felling lever, felling wedge, axe, etc.)

To make his performance, the contestant enters the felling site upon the judge's call. He is accompanied by an assistant and brings his chain saw and auxiliary tools with him. The judge shows the tree to be felled by the contestant as well as the main direction in which it has to be felled. The contestant has the right to determine the exact direction in which he wants to fell the tree within a sector of 45° degrees on both sides of the indicated main direction. If the contestant has not determined the felling direction within 2 minutes, the judges shall determine it.

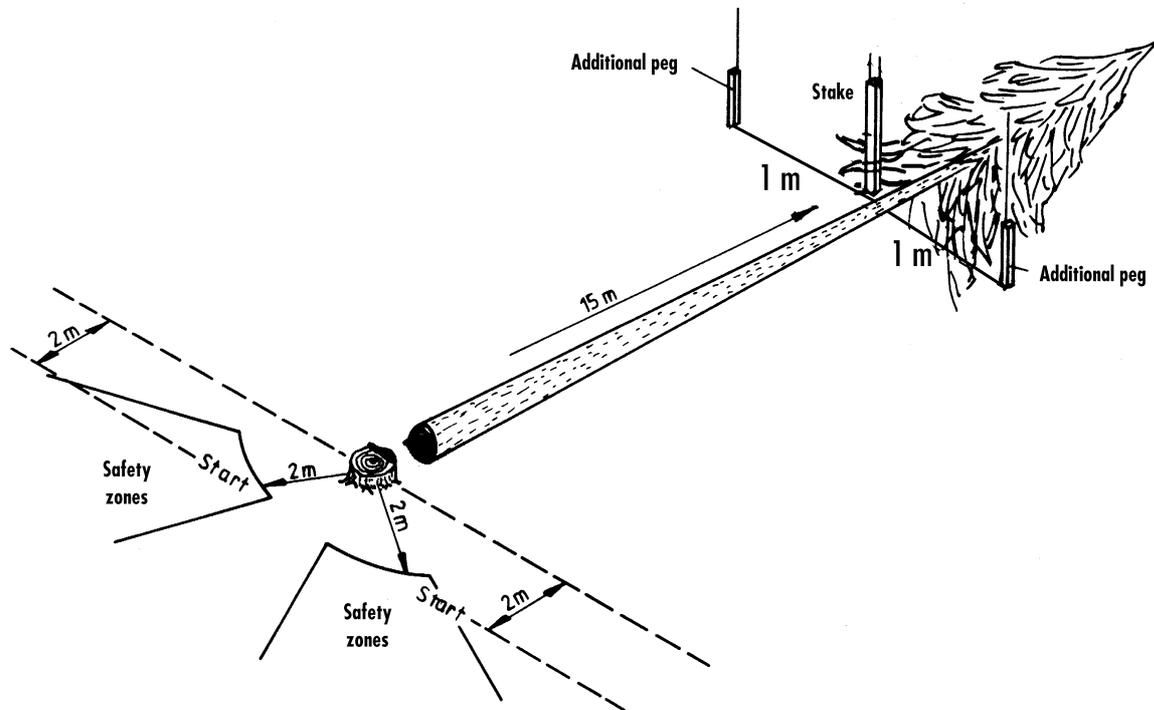


Fig 1a. Directed Felling

The contestant places or shows where to place a sharpened stake with a length of 1.5m at a distance of 15m from the tree. The stake indicates the direction, in which the contestant wants to fell his tree. To facilitate measurement, assistants place two 50cm pegs at a distance of 1m on both sides of the stake mark (Fig. 1a). The distance, rounded commonly (up or down) to the nearest whole centimetre between the pegs and the stake is noted in the protocol.

Before the beginning of the felling, the contestant has to deposit auxiliary equipment by choice (felling lever, felling wedge, axe, etc.) at the tree to be felled. The chain saw has to be placed behind the starting line. The contestant shall fell the tree exactly in the direction indicated by the stake. The undercut and the felling cut shall be made carefully and the stem must not be damaged. The contestant shall observe the safety rules of the competition.

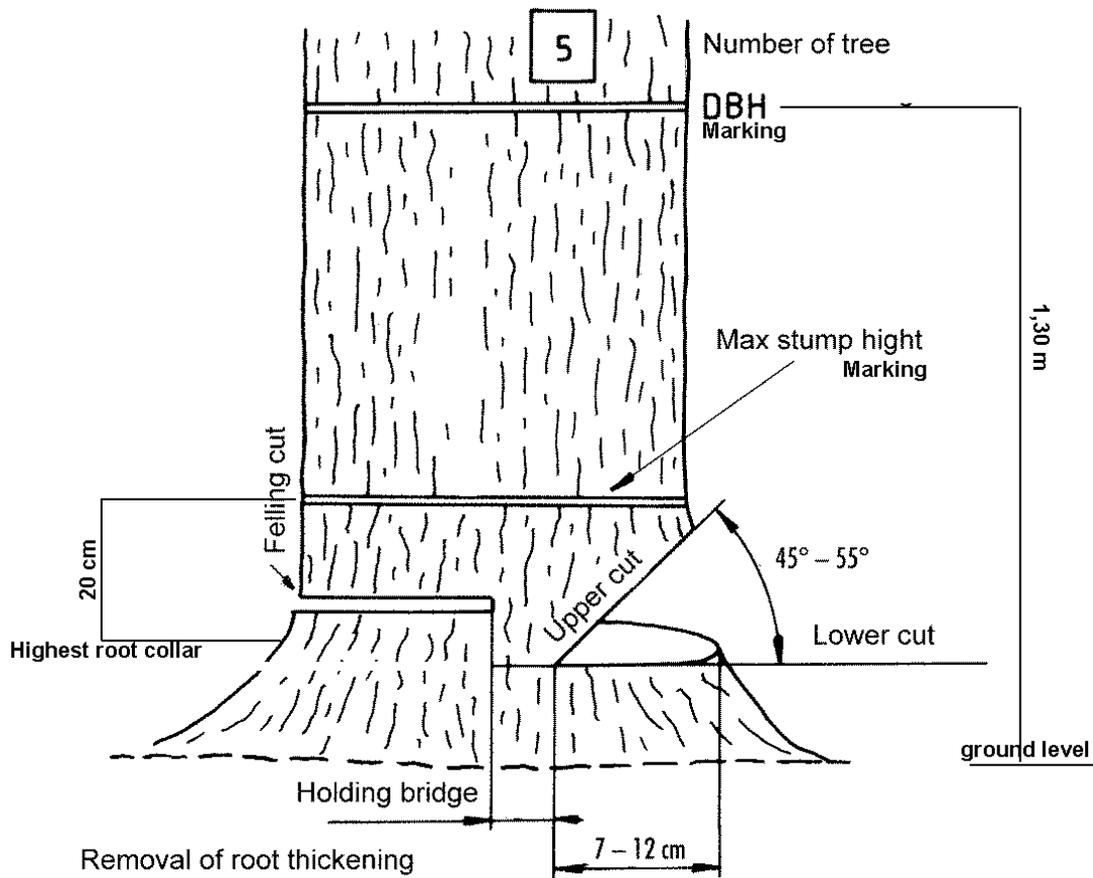


Fig. 2 Cutting Parameter

The contestant starts his chain saw on perceiving the start signal and places it beside himself on the ground in the place of start he has chosen. After the „start“-signal the contestant takes his saws and starts his performance. The contestant has 5 minutes for his performance including eventual removal of root thickenings in order to prevent breakage of the butt (fig.10). The time is measured from the signal „start“ to the moment when the tree hits the ground. Before the tree has fallen to the ground, the contestant shall move to the safety zone (fig.3), stop the saw and wait for the judge’s further instructions.

When moving into the safety zone the competitor must not cross the centre line which divides the two safety zones ie passing from the right hand side of the tree to the left hand side would incur a 20 point penalty. The competitor must watch the crown of the tree while the tree is falling.

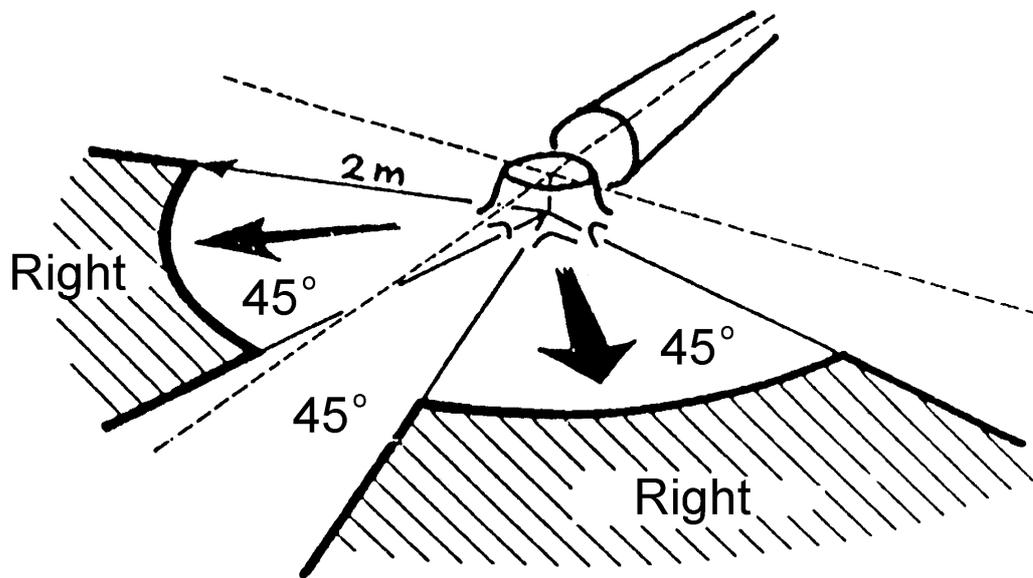


Fig. 3 Safety Zone

The contestant is informed of the measurements, signs the protocol and gets a copy of it. A total of 660 points are awarded for the felling as follows:

Felling time to be noted under point 1 in the Protocol:

If the time is equal or under 3 minutes, the contestant receives maximum award 60 points. If the time is equal to or over 4 minutes, the contestant receives 0 points for the time. For times between 3 and 4 minutes, the award will be 60 points deducted with 1 point per second. If the performance takes more than 5 minutes, the contestant cannot get points for “Accuracy of felling” (point 2 in the Protocol).

Accuracy of felling to be noted under point 2 in the Protocol:

The measurement of the accuracy is carried out horizontally from the stake mark set by the contestant, at right angles towards the centre line of the felled tree stem. Measurement is carried out from the centre line of the stake mark to the counterline of the tree stem rounded commonly up or down to the nearest whole centimetre. Maximum award of 400 points. For every centimetre’s deviation the contestant gets a deduction of 1 point per centimetre. Deviations of 400 cm and over are awarded with 0 points as indicated in table 2. Fractions of a centimetre will be rounded commonly up or down (see 2.6.3.) as in table 2.

Table 2

Accuracy of Felling			
Deviation (cm)	Points	Deviation (cm)	Points
0	400	10	390
1	399	11	389
2	398	12	388
3	397	13	387
4	396	14	386
5	395	15	385
6	394	16	384
7	393		
8	392		
9	391		

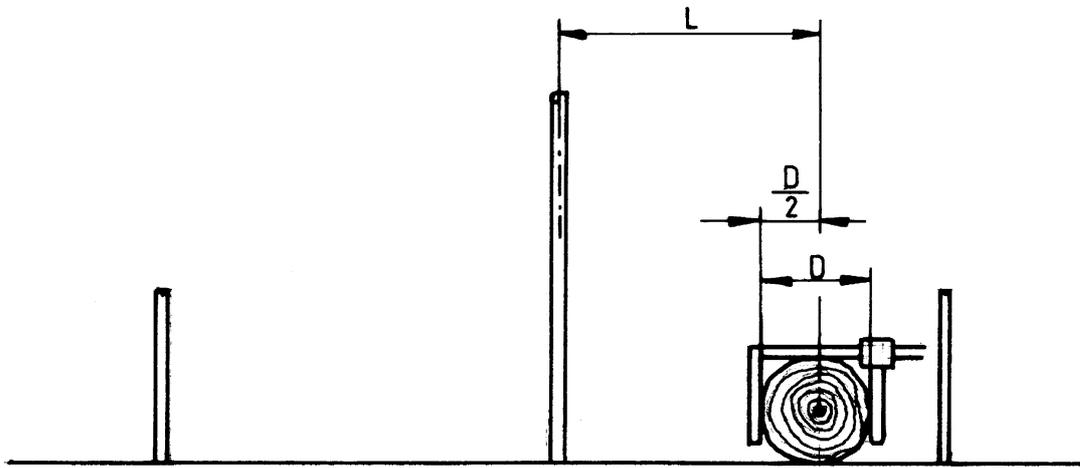


Fig. 4 Measuring points for accuracy

The depth of the undercut to be noted under position 3 in the Protocol:

The depth of the undercut is measured deducting the bark by a measurement stick from the middle of the stump at an accuracy of 1cm. Fractions of centimetres are rounded commonly up or down to the nearest whole centimetre (see 2.6.3). The result of the depth of the undercut has to be written on the stump (scoring according to table 3). Points are awarded as indicated in table 3 for deviations.

Table 3

Depth of undercut (cm)		Points
≤ 3	or ≥ 16	0
4	15	5
5	14	10
6	13	15
7-12		20

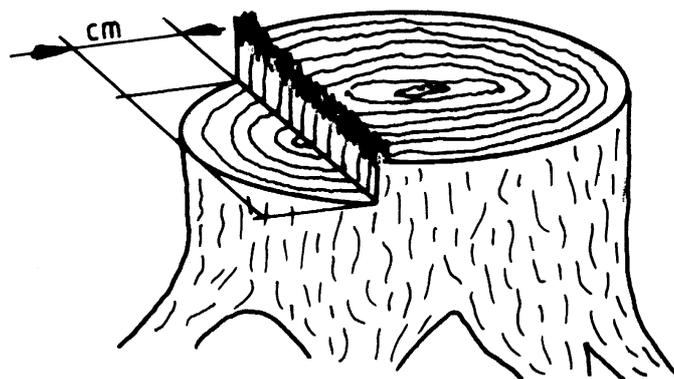


Fig. 5 Depth of undercut

The angle of the undercut is to be noted under point 4 in the Protocol:

The angle is measured in the middle part of the piece of wood cut off using an optical goniometer with the measurement accuracy of 30 angular minutes. The result will be rounded commonly (up or down) to the nearest whole angle degree (Point 2.6.3). If the angle is 45-55°, the contestant gets 60 points. For deviations, points are awarded as indicated in table 4. The measurement of the angle of the undercut has to be written on the stump.

Should the felling wedge need to be trimmed, the original felling wedge cut off serves to determine the angle of the undercut.

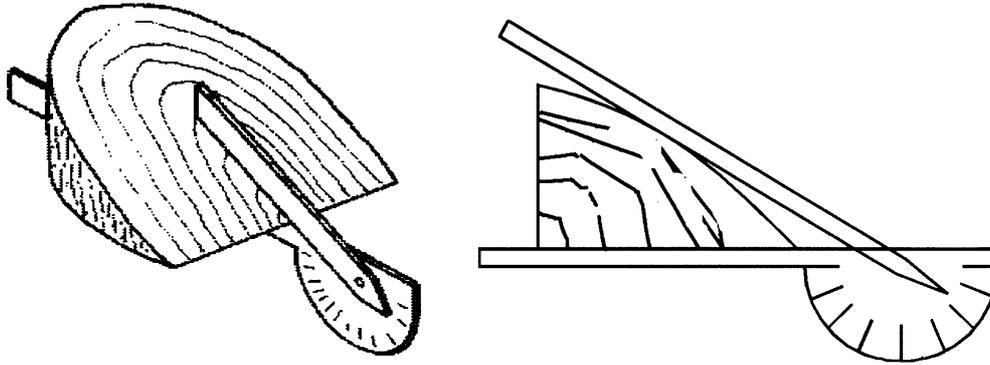


Fig. 6 Angle of Undercut

Table 4

Under cut angle		Points
≤ 39	or ≥ 61	0
40	60	5
41	59	10
42	58	15
43	57	25
44	56	40
45	to 55	60

The width of the bridge is to be noted under point 5 in the protocol:

The width is measured on the stump by means of a measuring instrument with an accuracy of reading of 0.1mm. The measurement must be noted rounded commonly up or down to the nearest whole mm (see 2.6.3). The measurement is made in horizontal direction from the front edge of the felling cut at the broadest and the narrowest point. Both measurements are recorded in the protocol.

The measurements of the width of the holding bridge has to be written on the stump. The contestant will be awarded points according to the readings that give the lower points. Maximum is 60 points, which are given for the holding bridge with minimal and maximal width between 25 and 35mm. For deviations, points are awarded as indicated in table 5.

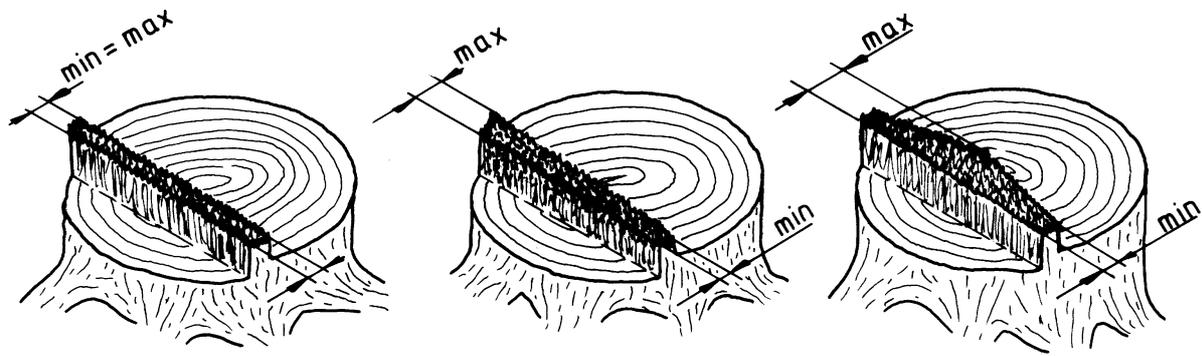


Fig. 7 Width of holding bridge

Table 5

Width of holding bridge (mm)			Points
≤ 9	or	≥ 61	0
10-12		56-60	5
13-15		51-55	10
16-18		46-50	15
19-21		41-45	25
22-24		36-40	40
	25-35		60

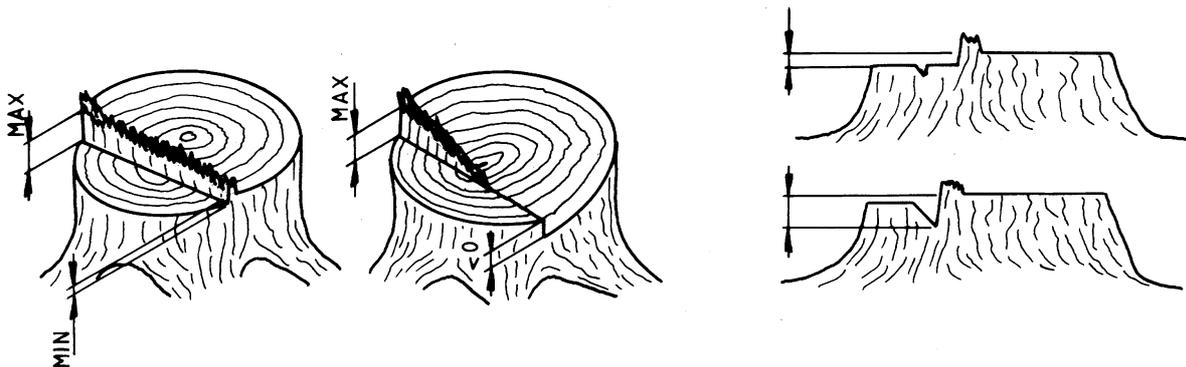


Fig. 8 Height difference

The height difference between the felling cut and the bottom of the undercut to be noted under point 6 in the protocol:

The difference in height between the felling cut and the horizontal lower cut of the undercut is measured in a vertical direction with a measuring instrument with an accuracy of reading of 0.1 mm. The measurement must be noted rounded as usual up or down to the nearest whole mm (see 2.6.3). The measurement is carried out vertically at the highest and lowest point of the felling cut. Height difference is defined as the difference between the felling cut and the lower cut (see figure 2).

The smallest and the largest values are recorded in the protocol and noted on the stump. The contestant will be awarded points according to the readings that give the lower points. Maximum is 60 points, which are given for height differences between 10 and 30 mm. For deviations, points are awarded as indicated in table 6.

Table 6

Height difference (mm)		Points
< = 5	or > = 41	0
6 - 7	36 - 40	20
8 - 9	31 - 35	40
10 - 30		60

Penalty points are given in the following cases:

Too high a stump

Is measured from the centre of the mark at breast height at 1cm accuracy to the upper edge of the felling cut (fractions of a centimetre are rounded commonly up or down - see 2.6.3). Penalty is 100 points. Too high a stump is indicated in the protocol under point 7. Please note: It will not be counted as a fault if the slope of the felling wedge cut was guided through the coloured ring.

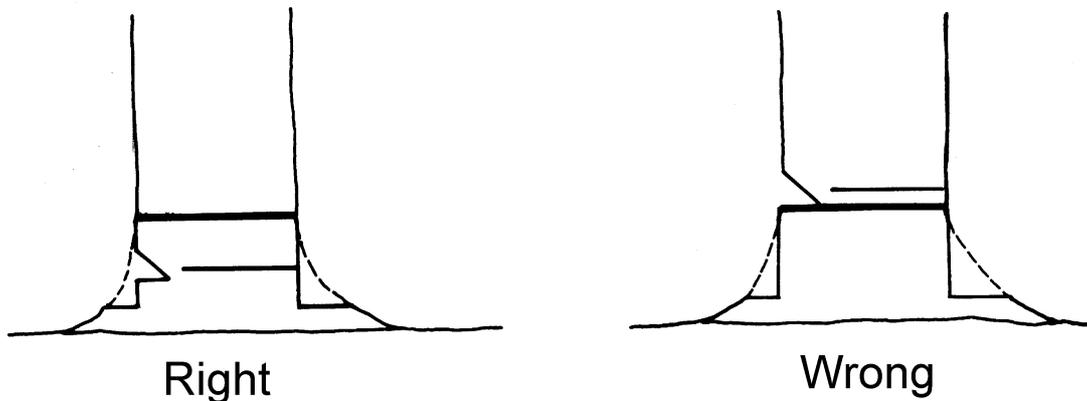


Fig. 9 Height of stump

Felling cut beneath marking

Felling cut above marking

The greatest length of butt cracking caused by a faulty felling method:

Is determined by a measuring tape or a rule at an accuracy of 1cm. The result will be documented in the protocol under point 8. Penalty points according to table 7.

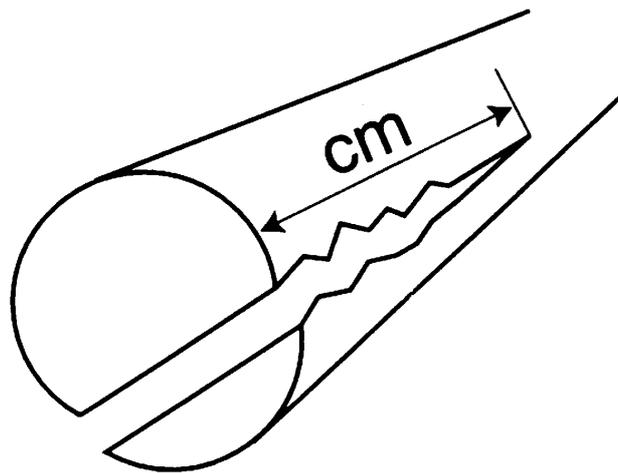


Fig. 10 Butt Cracking

Table 7

Penalty points for length of butt cracking cm

Length cm	Penalty points	Length cm	Penalty Points
< = 5	0	41-50	30
6-10	10	51-60	35
11-20	15		
21-30	20		etc. 5 points/10 cm length
31-40	25		

Incorrect retreat from the tree (i.e. not retreating to the safety zone):

It will be noted in the protocol under point 9. Penalty of 20 points deducted.

Using unauthorised colour marking:

Noted in the protocol under point 10. Penalty of 50 points deducted.

Violations of common work safety regulations according to table 1 to be noted in the protocol under point 11-20. Concerning table 1 item no. 6, and the protocol no.16; it is considered a movement, when the foot is lifted from the ground and the running chain is not in contact with the tree.

If the saw bar gets pinched in the kerf during the performance and the contestant is not able to settle the situation within 5 minutes from the beginning of his performance, or if the tree falls against a standing tree or gets lung up in falling through the fault of the contestant (according to the judgement of the judge), the judges shall interrupt the performance as soon as they establish the emergency situation by the command „stop“ (to be noted in the protocol **under annotations**) and order helpers to settle the dangerous situation. In such cases, the contestant receives no points for felling.

If conditions at the moment of performances are not equal for all contestants (changes in the direction and force of the wind, butt rot or a hollow in the stem at the level of the felling cut), the judges may give the contestant permission to fell another tree, by approval of the Head Jury.

Complaints about butt **rot can only** be made, if this affects the technique of cutting or felling unfavourably.

In case of an even result in felling, **the contestant who has the least deviation from the felling marker peg, BEFORE ROUNDING the measurement, will be declared the winner.**

3.2 Event II. Limbing

3.2.1 Preparation of the limbing event

It is the decision of the host country whether to use artificial or natural branches.

Limbing may be carried out in the same area as felling. For limbing, a number of stems slightly exceeding the number of contestants. When the limbing takes part at artificial branches, the placement of the branches should be equal on all stems. With the use of natural and artificial branches, the trunks will have 30 branches of the total of 900mm. The length of the branches are between 45-55cm long.

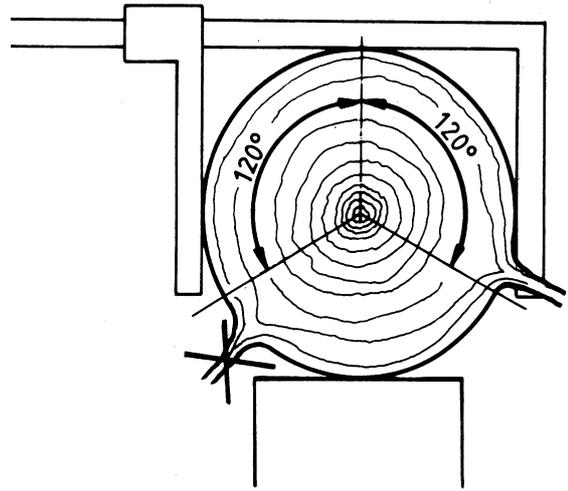


Fig. 11 Limbing sector

In the limbing sector groups of up to 5 branches can be prepared in the stem in holes of 30mm. All limbs and living branches outside the limbing sector shall be taken away. The limbing sectors are 120 degrees on both sides of the middle of the stem.

The sum of the diameters must not deviate more than 5%. The diameter of the branches is measured using a sliding gauge. The precision of measurement is 1mm. Measuring is carried out in two directions at right angles at the estimated place of cutting. The beginning and the end part of the stem to be limbed shall be clearly indicated on the stem.

The start line must be 0.1 m before the first selected branch and the stop line must be 0.3 m behind the last selected branch.

The distance between the start / stop indications are not to vary more than 0,5 m on the different stems. The stems are to lay fastened approximately 60 cm above the ground level measured from the top of the stem. The stems must be marked with the number corresponding to the number of the contestant before the performance. The length from the starting line to the finish line is 4.50m. 1.0m before the starting line and 0.50m behind the finish line remains free of branches.

In the **Italy 2004** WLC the limbing stems will be artificial. A machine rounded stem of **14 cm** diameter will be prepared with 30 artificial branches of 30 mm diameter.

The stem will therefore be parallel sided and will have no bark present. The stem will be painted. The pattern of branches will be the same for all competitors and the pattern will be announced to the competing countries in advance of the championship. The limbing stems as described above have been demonstrated to the IOC and it has their approval.

3.2.2 Performance of the limbing operation

Having examined the tree to be limbed for maximum one minute, the contestant, by order of the judge, moves to the starting line, starts his chain saw and keeps it on the stem with the point of the bar behind the starting indication.

The starting signal is given by one of the judges by a wave of the hand or a flag and the command „start“. At that moment the time keeping starts. Time keeping stops when the nose of the bar has crossed the stop-line.

The contestant stops his saw and waits for the judge's further instructions.

If one or more branches are removed with the arm or leg the event is null.

Points for the performance are awarded for:

The quality of work with a maximum of 200 points to be noted under point 1 in the protocol.

The time taken to be noted under point 2 in the protocol with an accuracy of 0.1 sec. The standard time for the limbing operation is 30 seconds, which means 200 points with an accuracy of 0.1 sec. A faster performance gives an additional 2 points / 0.5 sec. by which the time is shortened. For times in excess of the normal time 2 points / 0.5 sec. are deducted as shown in table 8.

Table 8

Time for limbing / sec. etc. + 2 Points / 0.5 sec.	Points
28,5 - 28,9	206
29,0 - 29,4	204
29,5 - 29,9	202
30,0 - 30,4	200
30,5 - 30,9	198
31,0 - 31,4	196
31,5 - 31,9	194
etc. - 2 Points / 0.5 sec.	

Penalty points are given in the following cases:

Branch stubs higher than 5 mm. Measurement of too long branch stubs over bark is carried out at the highest point of the stubs, in direction of the longitudinal axis of the stem. The measurements are made by a gauge which is 20cm in length and in the middle of which there is a gap with a length of 10cm and a depth of 0.5 cm, the gap should be marked at its mid point. If the gauge is hanging on the stub, the stub is too long, the number of stubs is counted and indicated in the protocol under point 3. Penalty is 20 points per branch stubs.

Use of the measuring rule

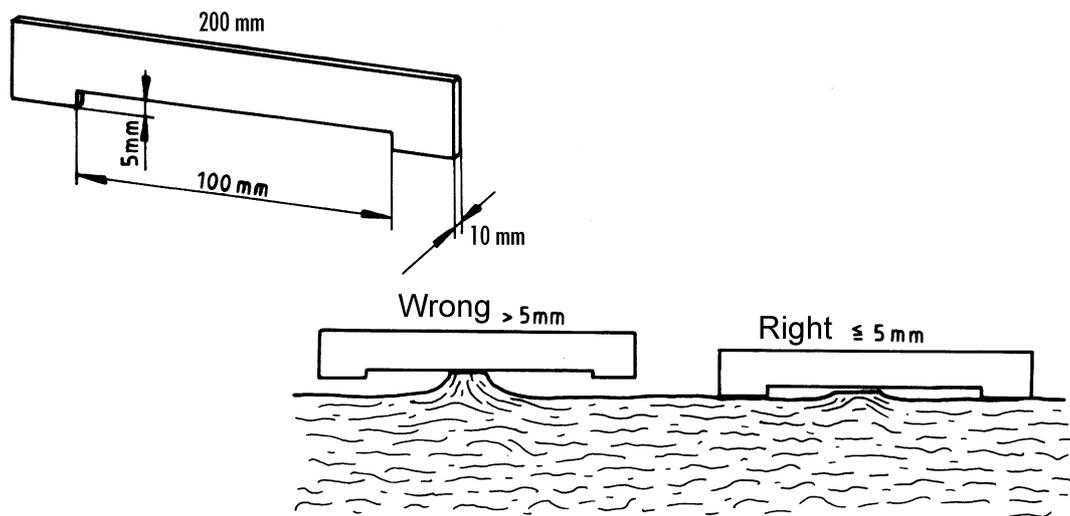


Fig. 12 Height of the branch stub

Damage to the stem over 5 mm. Is measured by a sliding gauge in radial direction under bark. The number of damages on the stem are counted and recorded in the protocol under point 4. Penalty of 20 points per damage.



Fig. 13 Measuring the damage to the stem

Damage to the bark in the longitudinal direction of the stem of 35cm or more.

Penalty of 40 points per damage, regardless of the depth of the damage. The number of damages will be noted under point 5 of the protocol.

Number of unlimbed or partly unlimbed branches are counted and recorded in the protocol under point 6. Penalty of 30 points per branch. Branch stubs and damages of the stem are marked on the stem.

Moving the feet forward when the chain is running and the bar is held on the competitor's side of the stem. 20 penalty points per violation.

Moving branches by hand. 20 penalty points per violation.

Too early start gives 20 penalty points.

Two members of the measuring group /judges has the task to look for movements only. The number of violations has to be noted in the protocol under point 7.

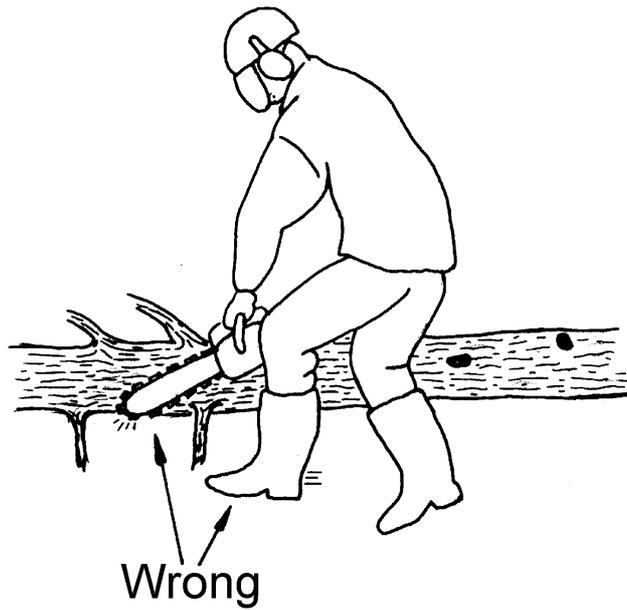


Fig. 14 Faulty movement

Violations of common work safety regulations according to table 1 to be noted in the protocol under point 11-20.

In the case of an even result in limbing, the contestant who has the best time is declared the winner.

3.3. Event III. Fitting another chain and turning the bar

3.3.1 Preparation for the event

The contestant shall dismantle and assemble the cutting apparatus of the chain saw and adjust the tension of the chain in such a way that the saw is ready for use in the following competition:- [bucking by combined cut](#).

The chain is considered to be correctly tensioned (before and after the event) when the side links of the chain are in contact with the underside of the bar.

Before the performance, a judge shall check on an extra table that the saw and the fitting on the cutting apparatus is in its original condition.

The following will be checked by the Judge in particular:

- Length of the screw of the clutch cover,
- Original condition of the nuts and thread,
- Original condition and existence of the chain adjuster screw,
- Existence of the chain catcher,
- Original condition of the holes of the clutch cover.

Furthermore the Judge checks:

- The tension of the chain: it has to be in such a manner that the side links of the chain are in contact with the lower edge of the bar.
- The judge tightens the nuts using a torque wrench which is adjusted to 2.0 Nm (Newton meter).
- The judge marks the bar and puts the checked chain saw upon the table where the event takes place.

3.3.2 Performance of the event

The table of competitions measures 1.50m in length and 0.70m in width and 0.80m in height.

Prior to the start only the following items are allowed to be placed on the table:

The checked chain saw and a new chain
The personal tools of the contestant

The contestant is allowed to act without safety helmet, gloves, eye protection and ear protection but with forest jacket / sweater, leg protection and protection footwear.

Having placed the saw on the table, the contestant moves to the starting line at a distance of one meter from the table. At the signal "start" when the time keeping starts, the contestant shall do the following:

- approach the table
- unscrew the nuts
- if necessary, remove the clutch cover
- remove the old chain
- turn the bar
- put on other new chain in place and tension, if necessary
- put the clutch cover and the nuts in place
- fasten the nuts
- Place the tool on the table

Timekeeping starts on signal, the contestant is allowed to have 2 false starts. After the 3rd false start the contestant becomes disqualified.

Timekeeping stops, when the contestant places his tool on the table. The judges will take the chainsaw to the place of the next performance. The contestant is not allowed to touch the chainsaw before he starts the next discipline.

Points for the performance are awarded for:

Time taken, which is noted under point 1 in the protocol.

Points for time depend on the group to which of the two groups the saw belongs. These two groups are determined according to the fastening mechanism at the bar.

Group 1: Two mounting nuts

Group 2: One mounting nut

The following table 9 (time / points) can be extended up or down, if necessary. The time-readings noted in the protocol will be rounded commonly up or down to the nearest tenth of a second by the calculating group.

Table 9

2 NUTS Group1/Time etc. + 2 Points/0,5 sec.	1 NUT Group 2/Time etc. + 2 Points/0,4 sec.	Points
14,6 - 15,0	9,8 - 10,1	114
15,1 - 15,5	10,2 - 10,5	112
15,6 - 16,0	10,6 - 10,9	110
16,1 - 16,5	11,0 - 11,3	108
16,6 - 17,0	11,4 - 11,7	106
17,1 - 17,5	11,8 - 12,1	104
17,6 - 18,0	12,2 - 12,5	102
18,1 - 18,5	12,6 - 12,9	100
18,6 - 19,0	13,0 - 13,3	99
19,1 - 19,5	13,4 - 13,7	98
19,6 - 20,0	13,8 - 14,1	97
20,1 - 20,5	14,2 - 14,5	96
20,6 - 21,0	14,6 - 14,9	95
21,1 - 21,5	15,0 - 15,3	94
21,6 - 22,0	15,4 - 15,7	93
22,1 - 22,5	15,8 - 16,1	92
22,6 - 23,0	16,2 - 16,5	91
23,1 - 23,5	16,6 - 16,9	90
23,6 - 24,0	17,0 - 17,3	89
24,1 - 24,5	17,4 - 17,7	88
24,6 - 25,0	17,8 - 18,1	87
25,1 - 25,5	18,2 - 18,5	86
25,6 - 26,0	18,6 - 18,9	85
26,1 - 26,5	19,0 - 19,3	84
26,6 - 27,0	19,4 - 19,7	83
27,1 - 27,5	19,8 - 20,1	82
27,6 - 28,0	20,2 - 20,5	81
28,1 - 28,5	20,6 - 20,9	80
28,6 - 29,0	21,0 - 21,3	79
29,1 - 29,5	21,4 - 21,7	78
29,6 - 30,0	21,8 - 22,1	77
30,1 - 30,5	22,2 - 22,5	76
30,6 - 31,0	22,6 - 22,9	75
31,1 - 31,5	23,0 - 23,3	74
31,6 - 32,0	23,4 - 23,7	73
32,1 - 32,5	23,8 - 24,1	72
32,6 - 33,0	24,2 - 24,5	71
33,1 - 33,5	24,6 - 24,9	70
33,6 - 34,0	25,0 - 25,3	69
34,1 - 34,5	25,4 - 25,7	68
34,6 - 35,0	25,8 - 26,1	67
35,1 - 35,5	26,2 - 26,5	66
35,6 - 36,0	26,6 - 26,9	65
36,1 - 36,5	27,0 - 27,3	64
36,6 - 37,0	27,4 - 27,7	63
37,1 - 37,5	27,8 - 28,1	62
37,6 - 38,0	28,2 - 28,5	61
etc. / 1 Point / 0,5 sec.	etc. / 1 Point / 0,4 sec.	

Penalty points are given in the following cases:

Dropping the old chain and / or a tightening nut on the ground (to be picked up and to carry on with the performance). To be indicated in the protocol under **point 3**. Penalty of 20 points.

The bar is not turned. To be indicated in the protocol under **point 4**. Penalty of 50 points,

The chain is not tightened correctly, penalty of 50 points to be indicated in the protocol under **point 5**.

If the chain is mounted in a manner (teeth towards motor block) so that the competitor is not able to carry out the following disciplines, the chain may be fixed under control of the judges and he can carry on with his work. Penalty of 50 points to be noted under **point 6** of the protocol.

Violations of common work safety regulations according to table 1 will be noted in the protocol under **point 11-20**.

If none of the parts have been assembled, the contestant shall receive 0 points.

Should the chain or one of the nuts of the clutch cover fall off either prior to the following discipline (eg. warming up the saw) or during the following discipline (bucking by combined cut), the competitor will be allowed to complete the event after refitting of the chain or nut. The only penalty for the cross cutting event will be 0 points for the time taken. The competitor will receive 0 points for the event Fitting of Bar and Chain.

In case of equal results, the contestant with the best time is the winner.

3.4 Event IV. Bucking by Combined Cuts

3.4.1 Preparation for bucking by Combined Cut

Two parallel positioned saw horses have been placed out on the display grounds. To each of them a turned bole with a diameter of 35cm has been attached. The bolts lie at an angle of 7 degrees to the horizontal plane in such a way that the angles are open into opposite directions. The point of bucking is 70cm above the ground in the case of one, and 40cm above the ground in case of the other one.

If the chain runs slack while the competitor is warming up their saw and is considered unsafe, the competitor will be asked to re-tension the chain. The chain is unsafe if one or more drive link tips are visible out of the bar groove. The competitor will have 50 penalty points deducted.

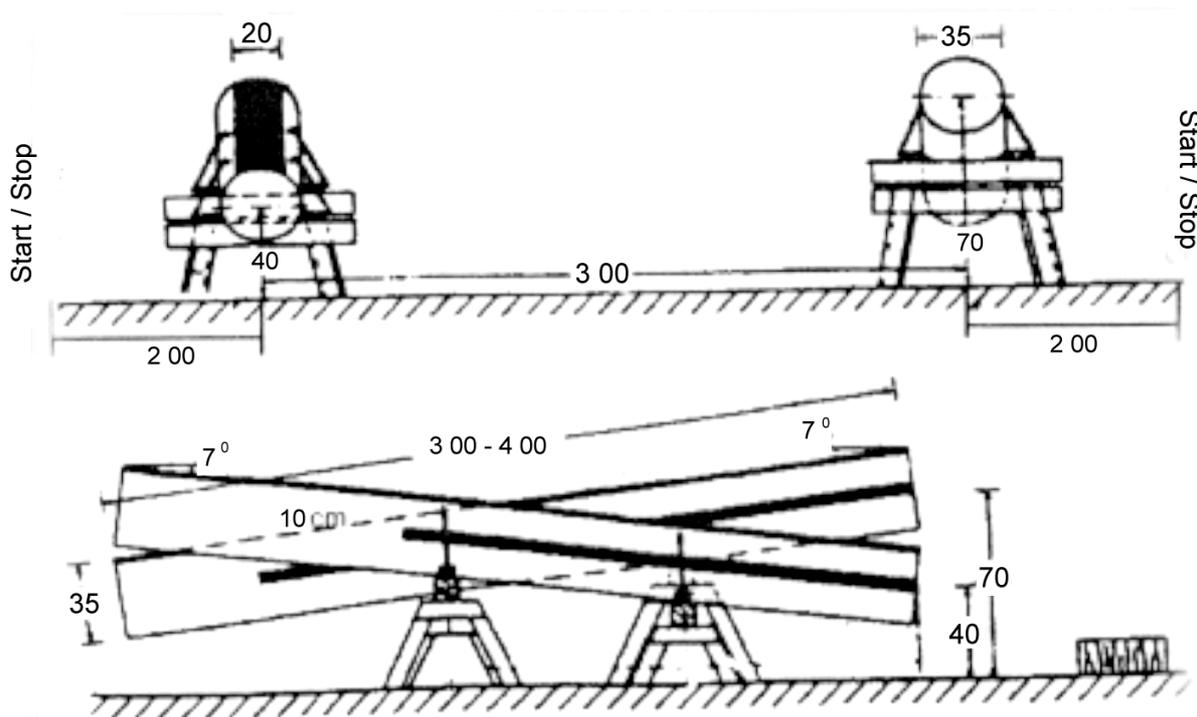


Fig. 15 Bucking by combined cut. Position of the saw horses

On both sides of the bole, 10cm stripes have been painted in the direction of the longitudinal axis. The cut from below and above must be guided into these stripes, but it must not go further. On the upper side a 20cm stripe has been painted to indicate where the cut from above shall begin.

After a competitor has finished this discipline the right-angle will be adjusted again by two assistants.

The contestant cuts a disc from each log in succession. First he makes a cut from below upwards to the 10cm painted strip and then a cut from above downwards. The thickness of the discs shall be at least 30mm and not more than 80mm.

The task is considered as completed if both discs lie on the ground. **If the first disc doesn't fall to the ground the competitor receives 0 points for perpendicularity (prot. 2) and 0 points for the height of the threshold (prot. 3) for the first bole. If the second disc doesn't fall to the ground the competitor will not receive any points for the event. (point 9 of the protocol).** The number of the contestant has to be marked on the discs. Two measuring assistants will "renew" the right angle at the end of the stem before the performance on the next contestant.

3.4.2 Performance of bucking by Combined Cut

The contestant moves to the starting line he chooses himself, starts the engine of his saw, and places the saw with the bar behind the starting line, which is at the distance of 2m from the place of the performance, and waits for the judge's command. After the signal "start", when time keeping begins, the contestant shall do the following:

- take his saw and move to the first bole
- cut from below to the 10 cm stripes
- detach the saw from the kerf and separate the disc from the bole by sawing from above
- start sawing within the indicated zone, and ending in the 10cm stripes,
- stop the chain from running,
- move to the next bole and repeat the sawing from below and from above on this bole
- stop the chain from running and move to the final line

Time keeping ends when the second disc has reached the ground. If the competitor exceed the 10cm marking when cutting, it has to be seen on the disc for measuring. Having completed his performances, the contestant shall hand his saw over to the judges; no further changes are to be undertaken on the saw.

The time spent is to be noted under point 1 in the protocol. Points are awarded on the basis of the cubic capacity of the motor.

Group 1: 46 - 55 cmc	30 sec = 50 points
Group 2: => 56 cmc	27 sec = 50 points

For every second exceeding the ideal time, 1 point will be deducted. For every second under the ideal time the contestant will be awarded 1 point. The accurate time measured with 0.1 sec shall be rounded commonly up or down to the nearest whole second.

The following point/time table 10 is to be extended at the up and down if necessary.

Table 10

Group 1 etc. Point/Time + 1 Point/1 sec.	Group 2 etc. Point/Time + 1 Point/1 sec	Points
25	22	55
26	23	54
27	24	53
28	25	52
29	26	51
30	27	50
31	28	49
32	29	48
33	30	47
34	31	46
35	32	45
etc. - 1 Point/1 sec.	etc. - 1 Point/1 sec.	

The perpendicular angle of the cut is to be noted under point 2 in the protocol.

The perpendicular angle is measured on both boles vertically and horizontally, **aligned through the centre of the log**, with an optical protractor with the measurement accuracy of 30 angular minutes. The measurements of the deviation of the cut from the plane have to be written on the discs. The measurement is rounded commonly up or down to the nearest half of an angle grade. Maximum award is 30 points per log. Points are awarded according to Table 11 on the largest deviation recorded.

For angles over 90° referred to the complementary angle.

Ex. 92° 28' becomes (180° - 92°28') = 87°32'

Table 11

Deviation	Points	Deviation	Points
89°, 90°	30		
88°59' - 88°30'	25	86°59' - 86°30'	11
88°29' - 88°00'	20	86°29' - 86°00'	8
87°59' - 87°30'	17	85°59' - 85°30'	5
87°29' - 87°00'	14	85°29' - 85°00'	2
		84°59' - 84°30'	0

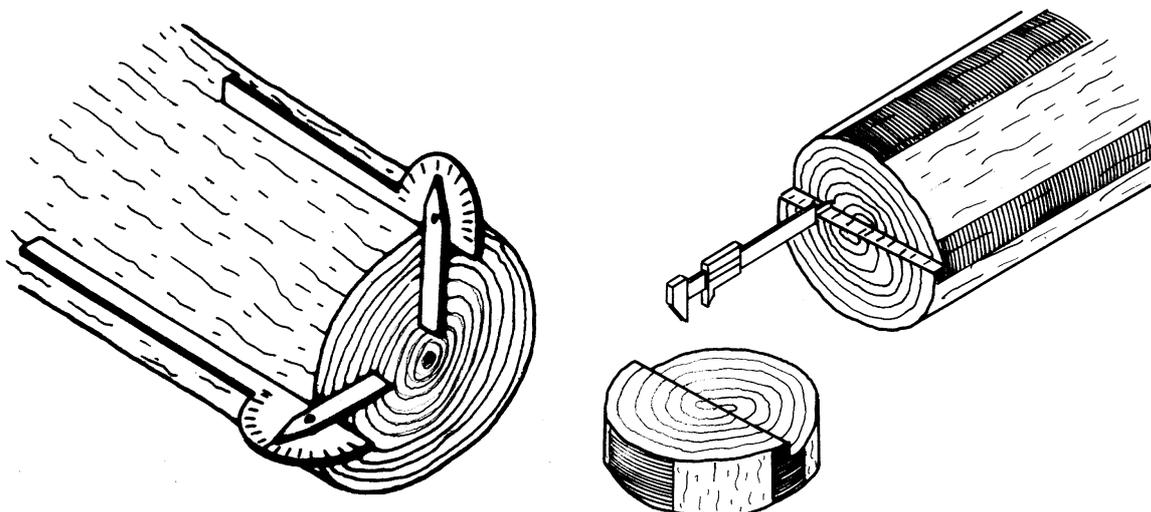


Fig. 16 Using the angular rule

Measuring the height of the threshold

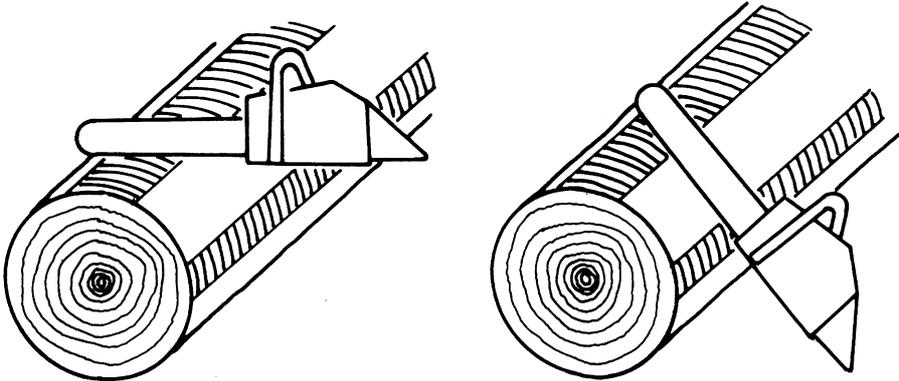
The distance between the plane of two cuts (the height of the threshold) to be noted under point 3 in the protocol. The height of the threshold is measured with the measurement accuracy of 1mm on the bole end and the disc at the painted stripes. The measurements of the height of the threshold have to be written on the discs. Maximum points are 45 points per log. Points are awarded according to table 12 on the basis of the largest distance recorded.

Table 12

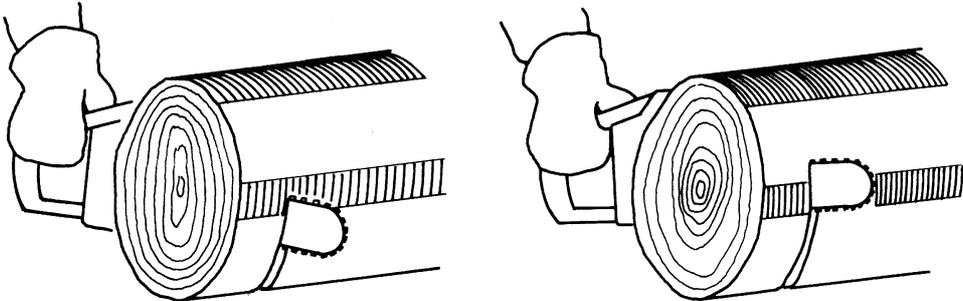
Points for the non - coinciding of the cuts in bucking from above and from below

Heights of threshold mm	Points	Heights of threshold mm	Points
> = 15	0	8	21
14	3	7	24
13	6	6	27
12	9	5	30
11	12	4	33
10	15	3	36
9	18	2	40
		< = 1	45

Beginning the upper cut outside the marked area. To be reported under **point 4** in the protocol. Penalty of 50 points per log.



Right **Fig. 17 How sawing is to be started** **Wrong**



Right **Fig. 18 Cutting in the marked area** **Wrong**

The 10cm marking must not be exceeded nor be fallen short of. If the cuts do not meet in the marked area there will be a penalty of 50 points per log noted in points **5 and 6** of the protocol. If the cuts exceed the 10cm paint band it should be clearly seen on the disc and/or bolt.

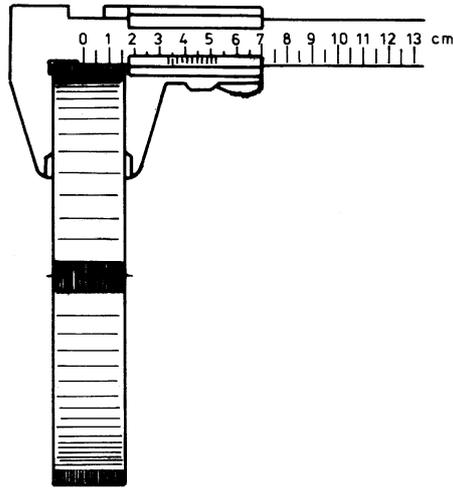


Fig. 19 Measuring the thickness of the disc

If the thickness of the disc is less than 30mm or more than 80mm there will be a penalty of 50 points recorded under **point 7** in the protocol.

Making cuts deeper than 10mm when starting the uppercut. To be noted under **point 8** in the protocol. Penalty of 20 points.

Violation of common work safety regulations according to table 1 to be noted in the protocol under **point 11-20**.

If the chain gets pinched or if the chain falls off the bar or one or more nut(s) fall off the clutch cover the contestant will get 0 points for the time.

All other measurements will be valued and noted in the protocol (**point 10** in the protocol).

In the case of even results the winner is the contestant whose cuts come closest to each other.

If this result, too, is the same, the winner is the one who has the best time of performance.

3.5 Event V. Precision Bucking

3.5.1 Preparation for precision bucking

Two turned boles (without the bark) with a constant diameter of 35cm are placed horizontally on two parallel foundation planks that have been placed close to each other.

Both foundation planks are partly covered by a 30mm layer of moist sawdust in such a way that the contestant can neither see the limit between the bole and the plank nor the limit between plank and the ground. The layer of sawdust shall be 55 cm wide. Refer to Fig 20 for the placement of the sawdust ie level with the outside edges of the logs and extending 20 cm beyond the inside edges of the logs. The bole is placed on the plank in such a way that an empty space of 20 cm remains to one edge of the plank. This empty space shall be on the inside between the two boles (see fig. 20).

The planks lay on the ground. They must be steady and even to the ground. Their surface shall be straight (smooth).

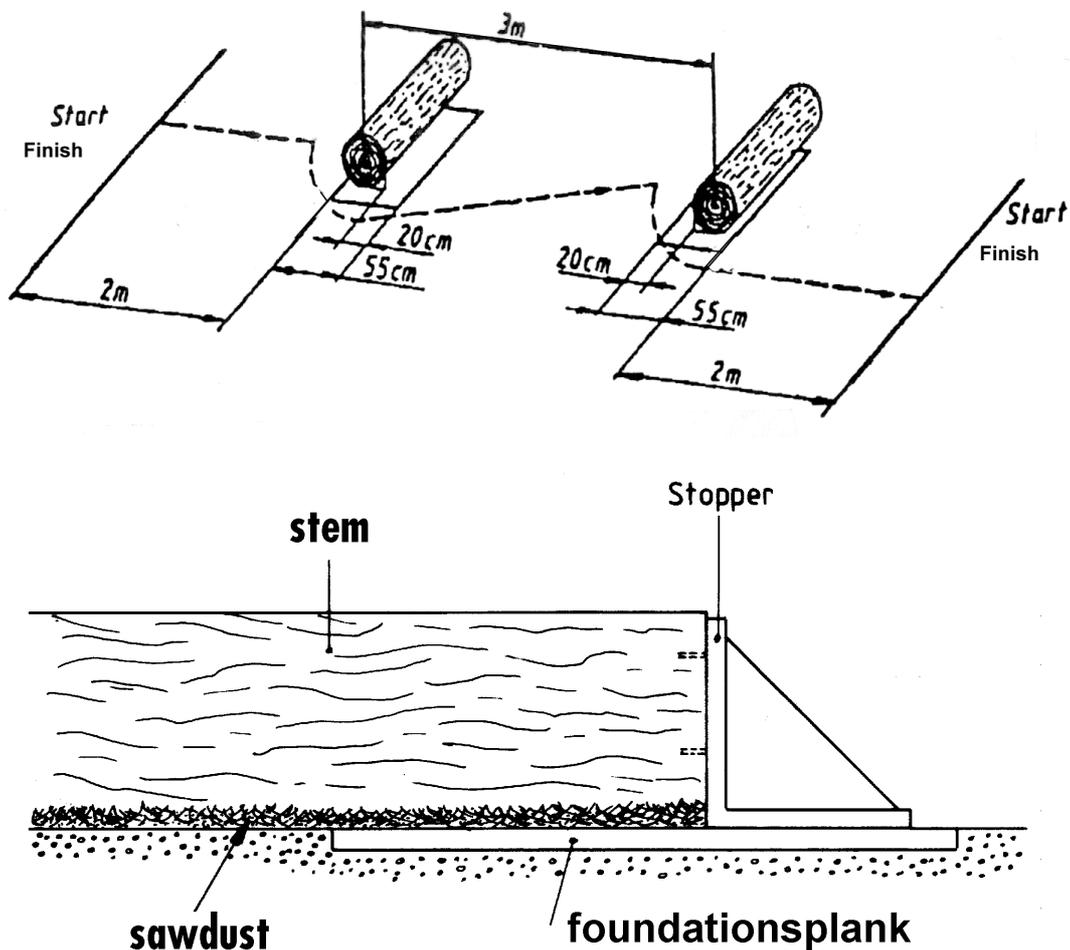


Fig. 20 Position of foundation planks (left) Stopper and stop disc in place (above)

The contestant shall cut a disc from the end of each bole in such a way that the saw chain does not touch the foundation plank. The thickness of the disc shall be at least 30mm and not exceed 80mm. The disc shall be cut at right angles to the longitudinal axis of the bole.

In order to hinder the contestant from breaking off the disc from the bole after sawing, each bolt end is equipped with a stopper that has been equipped with a weight of about 10 kg (fig. 19). If the bole end has a slope of more than 2, the contestant has the right to have the situation corrected.

3.5.2 Performance of Precision Bucking

The contestant will be allowed to adjust the tension of the chainsaw chain before this event. This will incur NO penalties.

The contestant may determine his method of preceeding. The contestant places the saw with the engine running on the starting line he has chosen and that lies at a distance of 2m from the first bole. Then he waits for the judge's command.

After the signal "start", when timekeeping begins, the contestant shall do the following:

- take his saw and move to the first bole
- cut off a disc without touching the foundation plank with the chain
- stop the chain from running
- move over to the next bole
- cut off another disc, stop the chain from running and place the saw on a disc on the ground in front of the bole

The timekeeping stops at the moment the chain saw is on the disc.

The time spent is to be noted under point 1 in the protocol. Points are awarded on the base of the cubic capacity of the motor.

Group 1: 46 - 55 cmc 30 sec = 50 Points
Group 2: => 56 cmc 27 sec = 50 Points

For every second over the ideal time the contestant loses 1 point / second. For ideal time and for every second under the ideal time, the contestant will be awarded 1 point.

The following point/time table 13 can be extended at the start and at the end, if necessary.

Table 13

Group 1 Seconds etc. + 1 Point/sec	Group 2 Seconds etc. + 1 Point/sec	Points
25	22	55
26	23	54
27	24	53
28	25	52
29	26	51
30	27	50
31	28	49
32	29	48
33	30	47
34	31	46
35	32	45
etc. - 1 Point/sec	etc. - 1 Point/sec	

The precision of the right-angle of the cut to the longitudinal axis of the boles is to be noted under point 2 in the protocol. The obliqueness of the cut is measured on both boles in both horizontal and vertical direction at a precision of 30 angular minutes (3 measurements). The largest difference between the 90 angle and the reading recorded is indicated for each bole. Maximum is 20 points per bole and points are given according to table 14.

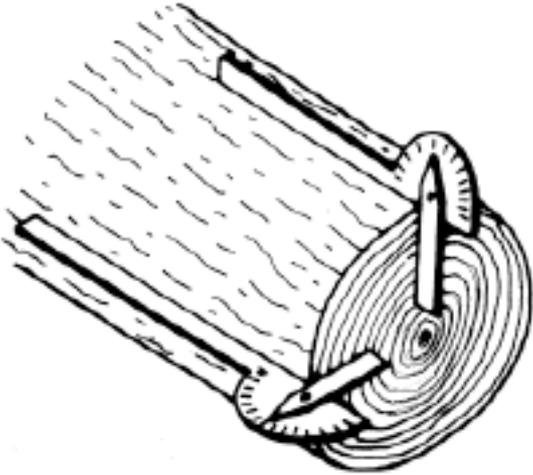


Fig. 21 Using the angular rule

Table 14

Deviation of the cut from the plane at right angles to the axis of the log in bucking

Deviation	Points	Deviation	Points
89°, 90°	20		
88°59' - 88°30'	15	86°29' - 86°00'	4
88°29' - 88°00'	10	85°59' - 85°30'	3
87°59' - 87°30'	8	85°29' - 85°00'	2
87°29' - 87°00'	6	84°59' - 84°30'	1
86°59' - 86°30'	5	84°29' - 84°00'	0

For angles over 90° referred to the complementary angle.

Ex. 92° 28' becomes (180° - 92°28') = 87°32'

Accuracy of cutting to be noted under point 3 in the protocol:

If the contestant cuts the bole without touching the foundation plank, he receives 80 points per bole. If the chain touches the foundation plank, **the contestant receives 0 points for perpendicularity (prot. 2) and 0 points for the thickness of uncut wood (prot. 3) for the bole concerned (noted under point 7 of protocol).** The part of the bole diameter remaining uncut is always measured at right angles to the plank and in the place, where it reaches the maximum distance from the plank. The measurement carried out to an exactness of 0.1 mm will be rounded commonly up or down to the nearest whole millimetre. Points are given according to table 15.

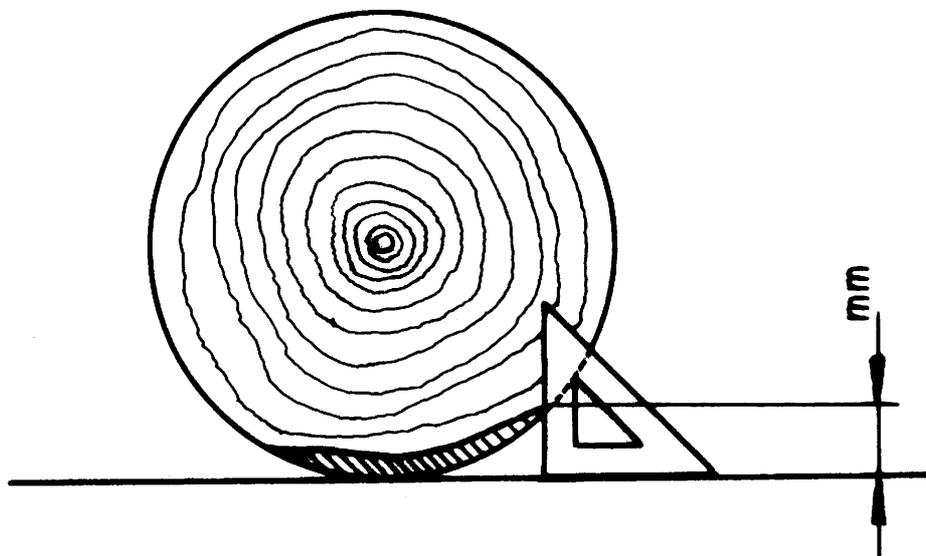


Fig. 22 Measuring the remaining part of the stem

Table 15

Points for the accuracy of bucking

Thickness of undercut part mm	Points	Thickness of undercut part mm	Points
0	80	20	40
1	78	21	38
2	76	22	36
3	74	23	34
4	72	24	32
5	70	25	30
6	68	26	28
7	66	27	26
8	64	28	24
9	62	29	22
10	60	30	20
11	58	31	18
12	56	32	16
13	54	33	14
14	52	34	12
15	50	35	10
16	48	36	8
17	46	37	6
18	44	38	4
19	42	39	2
		> = 40	0

Penalty points are given in the following cases:

The thickness of the disc is less than 30mm or more than 80mm. To be noted under point 4 in the protocol. Penalty of 50 points per disc.

Stepping over the bole or stopper when moving from one bole to another. To be noted under point 5 in the protocol. Penalty of 50 points/bole.

If a contestant removes the sawdust from the plank, he will be disqualified. (Protocol No. 8)

Making cuts deeper than 10 mm when starting the uppercut. To be noted under point 6 in the protocol. Penalty of 20 points.

Violations of common work safety regulations according to table 1 to be noted in the protocol under points 11-20.

In case of equal results the winner will be the contestant who got the better results in accuracy of cutting. If the scores of precision bucking are even too, the best time defines the winner.

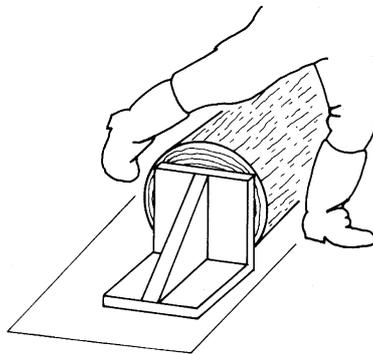


Fig.23. Stepping over a stem in a wrong way

4. Appendix

The IOC is happy to be able to inform all participating countries that the next world championship for loggers will be held in [Estonia in 2006](#).

October 2003

[Mr. Daniele Combi \(Chairman\)](#)

Mr. Peter Bowsher

Mrs.Kari Anne Sand

Mr.Werner Löffler

Mr. Dr. Silvius Wodarz

Mr Ulvar Kaubi

[Italy](#)

United Kingdom

Norway

Austria

Germany

Estonia