Evaluation & Implementation of Chainsaw Operators Certification

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A Brief Review of National Training Provision and Development of International Chainsaw Standards

September 2011

1. REVIEW OF NATIONAL TRAINING PROVISION

*As part of the recent Leonardo da Vinci project "**Evaluation and Implementation of Chainsaw Operators Certification"**[1]. An evaluation and mapping exercise a requirement of the project was undertaken in the early stages to help identify the current situation, from an International perspective, of training and assessment provision for chainsaw operators. As the project title implicates, before any International certification can be implemented, a study and mapping exercise must be undertaken to make a comparison of the current training provision within the different countries participating. This was a key part of the project rationale that was likely to support the transfer of chainsaw training innovations across Europe and world-wide. A parallel study was also initiated investigating reasons behind chainsaw related accidents and evaluating any trends again, from the participating countries perspective. The information gained from this other study upon completion could prove beneficial in raising awareness to chainsaw hazards and risks and by association, aiding the prevention of accidents.*

This process was managed by NPTC (now City & Guilds) the lead vocational education organisation in the UK. The only project partner with known established independent assessment standards which any transfer of innovation was likely to be based upon, at least in the start of the project. The core project team was made up of six countries highlighted in Fig.1 but interested non-partner participants from five other countries contributed to the evaluation. Following discussion meetings questionnaires were sent out for completion to each country. The initial template form used had to be revised due to the fact that if a country had no standards blank forms were returned to the coordinator with little value. The addition of a training column in the new version brought more success and more information to analyse (Fig.2). The questions rose looked at occupational standards that would be expected for a chainsaw operator based on the UK model. The participants had to respond by simple cross-referencing to their situation and ticking the relevant boxes on the form. All participants were able to adequately represent their country position and most were directly involved in chainsaw education & training. For example, one of the project partners and responders representing Skovskolen (Denmark), Mr Bo Brockman has over 20 years experience as a forestry (includes chainsaws) trainer and adviser.

[1] Evaluation & Implementation of Chainsaw Operators Certification (EAICOC) partly funded by the European Commission under the Lifelong Learning Programme (Leonardo da Vinci, project number UK/09/LLP-LdV/TOI/163_210

(Fig.1: Sample European Chainsaw Operator Competency Questionnaire version 2: Robb 2011)

EU Member State:	Completed by (name):	
Fell trees motor-manually (T10.1)		
What the chainsaw operator must be able to do:	**Standard exists (please tick)** (✓)	**Covered in our training (please tick)** (✓)
1. carry out daily and weekly maintenance of **equipment** including settings and pre-start checks as per manufacturers' recommendations		
2. brash trees and remove buttresses to the given specification		
3. select a felling method which is relevant to the **tree size** and **condition**		
4. fell **trees** using appropriate felling aids in accordance with environmental assessments		
5. treat stumps as specified		
6. **take down** hung up trees safely and in line with industry guidelines		
What the chainsaw operator must know and understand:	**Standard exists (please tick)** (✓)	**Covered in our training (please tick)** (✓)
(a) how to identify hazards and comply with the control procedures of risk assessments		
(b) emergency planning and procedures		
(c) how and why to initiate and maintain effective communication		
(d) why an organised felling method would be used		
(e) how to recognise signs of disease and decay in trees and the effects of these on safety		
(f) how to treat stumps safely and effectively		
(g) the legal requirements for felling trees in different circumstances		

All participants responded to the questionnaires as fully as possible with only a few minor misinterpretations occurring during translation from technical English to mother tongue. The questionnaires primarily covered ground chainsaw use on four levels Fig.2. All the countries surveyed provide standard training courses on these levels with the exception of Greece (none) and Romania (none for level 4). Ninety survey forms in total were returned and analysed.

(Fig.2: Mapping Analysis of National Training schemes for Chainsaw Operators: Robb 2011)

Country	Chainsaw Level	Training	Independent Skills Tests	Standards
Belgium	1-Maintenance & Crosscutting	√		
	2-Basic Felling	√		
	3-Advanced Felling	√		
	4-Storm Damage	√		
Finland	1-Maintenance & Crosscutting	√		
	2-Basic Felling	√		
	3-Advanced Felling	√		
	4-Storm Damage	√		
Germany	1-Maintenance & Crosscutting	√		√
	2-Basic Felling	√		√
	3-Advanced Felling	√		√
	4-Storm Damage	√		√
Greece	1-Maintenance & Crosscutting			
	2-Basic Felling			
	3-Advanced Felling			
	4-Storm Damage			
Romania	1-Maintenance & Crosscutting	√		√
	2-Basic Felling	√		√
	3-Advanced Felling	√		√
	4-Storm Damage			√
Slovenia	1-Maintenance & Crosscutting	√		
	2-Basic Felling	√		
	3-Advanced Felling	√		
	4-Storm Damage	√		
Switzerland	1-Maintenance & Crosscutting	√		√
	2-Basic Felling	√		√
	3-Advanced Felling	√		√
	4-Storm Damage	√		√
Holland	1-Maintenance & Crosscutting	√		
	2-Basic Felling	√		
	3-Advanced Felling	√		
	4-Storm Damage	√		
Denmark	1-Maintenance & Crosscutting	√		
	2-Basic Felling	√		
	3-Advanced Felling	√		
	4-Storm Damage	√		
Spain	1-Maintenance & Crosscutting	√		
	2-Basic Felling	√		
	3-Advanced Felling	√		
	4-Storm Damage	√		
UK	1-Maintenance & Crosscutting	√	√	√
	2-Basic Felling	√	√	√
	3-Advanced Felling	√	√	√
	4-Storm Damage	√	√	√

*Note-Project partner countries in bold.

From the countries surveyed only Germany, Switzerland, Romania and the UK had national occupational standards relating to safe chainsaw use. The UK standards for tree work are set and revised by the Government appointed sector skills council-Lantra; in Germany they

are laid down in the national standards for occupational training of forest workers; in Romania they can be found in the Book of Charges including Romanian labour laws and in Switzerland they can also be found in law e.g. the Accident Insurance Act, supported by forestry training manuals and manufacturers guidance documents.

In other countries that do not specifically have their own standards legislation can still exist which relates to chainsaw operations e.g. Spanish Law: 2003/1996 Professional certificate for Forest Workers and the trainers are still supported by forestry training manuals and manufacturers guidance documents.

Duration of training courses range from 2-5 days although all basic felling courses (International Chainsaw Standards - ICS level 2) where they include level 1 (chainsaw maintenance/cross-cutting) last 5 days. In Slovenia there are 2 levels. Level 1 includes International level 1, 2, and 3 (small, medium & large tree felling-level 3) from Fig.2 and level 4 corresponds with level 4 from above (dealing with storm damaged trees). Some courses provide certification whereas others do not although generally a certificate of participation or attendance is given out. In Switzerland there is no requirement for certification at level 4 but courses are offered to forest workers immediately following a storm. Interestingly in Switzerland a training module for tree felling ends with a competency test, a form of integrated training and assessment, as the test is undertaken by the same trainer that delivered the course to the candidate.

It was therefore clear from the analysis that only NPTC had standards for training and completely independent assessment. The project partners and non-partners decided following this evaluation and the trends indicated within the review of accidents, that any implementation of a chainsaw certification should include independent assessment. The next step required would no longer be a desk-top study but would need to be an appraisal of different countries training and methods of assessment in the forest.

2. DEVELOPMENT OF INTERNATIONAL/EUROPEAN CHAINSAW STANDARDS (ICS)

Within the scope of the project, the previous section which included an analysis of accidents & the national training provision between different countries for comparison was referred to as work package 2. With work package 2 complete work package 3[2] could commence. In reality, this Standard Setting package overlapped with work package 5-Pliot Testing and work package 6-Quality Assurance processes. These 3 phases of development evolved together. As the participants found, even once pilot testing was finished they were still fine tuning the standards and therefore updating the changes onto the QA documents e.g. assessor score sheets. **22** Instructors/assessors from **6** countries contributed to the event.

- **Familiarisation, Standard Setting & Pilot Testing-Spain, April 2010**

The original plan to spend five days pilot testing in the forests of Vidra, Spain and then moving on to refining standards and documentation was unrealistic as explained before. We soon came to realise that reaching a quick consensus on techniques and applied skills used within such a large group, of dedicated chainsaw professionals would be a difficult task, never mind the language & cultural differences. The format of the 5 days can be summarised as follows:

Day 1: Familiarisation of each countries training courses and methods of testing in the classroom. Holland, Belgium & Czech Republic have no recognised certification. Germany had different standards applied between the different states for example; Bavaria had its own test. The German apprenticeship scheme involved chainsaw tests both written and practical with oral as an option. The UK scheme was oral and practical. Whilst both Denmark and Spain had adopted the UK scheme rather than 're-invent the wheel' a number of years ago. The Spanish culture and hospitality was excellent and the long-lunch breaks meant it was good to adapt and cram in more work in the morning. Discussions were held on localised issues for Spain such as dealing with forest fires and the particular hazards found with this. The area around Vidra was a National Park making it a little more difficult to find the ideal site for the areas we wanted to cover in felling practice. Due to restrictions in where to fell trees and also what we could not fell such as large trees due to preservation laws and an under storey of box trees (approx. 2-6m tall) reduced site visibility.

Day 2: The format for this day was to review each partner's styles and methods of assessment after undertaking a group risk assessment on site. Observations were made on Dutch non-independent and UK independent techniques of assessment and the pro's and con's of both reviewed with assessors role playing as mock candidates. Field maintenance was also undertaken as well as maintenance in the workshop at the end of the day.

Day 3: Consolidated on the previous days with the focus on chainsaw level 1 and 2. Methods of dealing with hung-up trees was seen as a key issue and dealt with. Some partners did not want to have this item assessed but as seen in information related to the accident review, it was a dangerous activity that should be assessed for competence. Other items discussed were preconditions for assessment, options on how to develop a question bank for the theory aspect and possible online testing. NPTC use these technologies already on skills assessments. ICS1 for example, when the criteria is ready and extracted to be used

[2] The project was actually composed of 7 work packages. In brief, 1-Management, 2-Research, 3-Standard Setting, 4-Consultation, 5-Pilot Tests, 6-Quality Assurance & 7-Dissemination

by assessors in the form of assessor guidance or a score sheet will then become ICC1 or International/European Chainsaw Certificate Level 1. So we will have progression from the standards utilised for tests which will be endorsed by the development of an International Awarding Body. In a 'nutshell' ICS criteria leads to ICC (International/European Chainsaw Certificate) awarded by participating countries if the candidate is successful!

Day 4 & 5: With the 1st draft templates of assessor guidance developed several mock Level 1 and 2 tests were undertaken for the first time including mock verifications of the assessors undertaking the assessments of a candidate. Interestingly, one candidate was failed by an assessor at the same point where the verifier had noted the fail when score sheets were compared and discussed afterwards. Assessments were also timed as consideration for placing a maximum time limit was discussed. Generally, after initial findings a draft template for ICS at levels 1 & 2 as assessment guides based upon NPTC materials successfully constructed. Figs.3 and 4 compare the UK (2 assessments per independent assessor per day) and Dutch (12 assessments per trainer per day) styles of assessment criteria tested during the week.

Brief summary of results:

- Familiarisation of the variety of International chainsaw techniques in practice
- Development of draft ICS Levels 1 & 2
- Development of draft assessor guidance Levels 1 & 2
- Development of draft assessment pre-conditions
- Undertaking mock assessments to different national standards
- Investigating technical content differences and reaching a consensus of opinions

(Photo 1: The beginning of many discussions on International Chainsaw Standards, **ICS**-Spain: Robb 2011)

(Fig.3: Sample Draft ICS Level 2 criteria for NPTC UK assessor guidance: Robb 2011)

ASSESSMENT ACTIVITIES	**ASSESSMENT CRITERIA**	
What the chainsaw operator must be able to do:		
1. Safeguard and maintain your own health and safety and that of those likely to be affected by your work	Assessor to visually observe PPE *When starting and checking operational functions of saw, full PPE as outlined in national safety guidance or manufacture handbook MUST be worn* *Candidate to explain why the PPE is required*	PPE in accordance with health and safety requirements and Risk Assessment and manufactures handbook - Chainsaw safety trousers - Chainsaw safety boots - Safety helmet - Eye & ear protection - Non-snag outer clothing - Personal First Aid Kit
2. Take appropriate action in the event of unforeseen circumstances	Candidate to identify hazards relevant to the site and trees to be worked on in accordance with manufactures handbook and national standards	**RISK ASSESSMENT** **METHOD STATMENT** **EMERGENCY PLANNING**
3. Prepare the tree for felling by safe brashing		Remove low branches taking into account: - Correct "break-in" - Position of the saw in relation to the operator, bar on opposite side of stem - Height to which branches are removed - Saw body not above shoulder height - Operating technique - Brashing close to the stem
4. Select a felling method which is relevant to the tree size and condition 5. Fell trees using appropriate felling aids in a safe and ergonomic way	i. Fell a tree with a basic felling technique	- Choice of felling direction made - Escape route(s) prepared and selected - Tree Inspected for signs of rot or decay e.g. Fungal growth Cavities Die back - Explain methods of felling unsafe trees A sink is cut to determine felling direction, using: - Safe stance - Top sink cut at an appropriate angle and height - Bottom sink cut as near to ground level as practicable - Cuts of appropriate depth - Sink cuts meet accurately - Sink facing in the chosen direction of fall - Chain brake used appropriately The main felling cut/s made using: - Safe stance - "Ears" cut at appropriate depth and height to avoid tearing - Level cut(s) at appropriate height at or above level of sink - "Pushing chain" or "pulling" chain - Safe withdrawal of the saw - Chain brake as appropriate - A hinge is retained of adequate dimensions - Appropriate aid tools are used safely if required to fell tree - A prepared escape route is used as soon as the tree begins to fall - Site checked for safety once tree has fallen

(Fig.4: Sample Draft ICS Level 1 Criteria Dutch B-Form-only used when a candidate fails: Robb 2011)

Maintenance		
Maintenance of the chain		**Comment**
Variable cutter length	☐	
Incorrect depth gauge settings	☐	
Incorrect filing angels	☐	
No inspection of chain components	☐	
Remaining maintenance		
Guidebar maintenance	☐	
Air filter	☐	
Sprocket	☐	
Recoil starter	☐	
Chain brake	☐	
Spark plug	☐	
Overall cleanness of the machine	☐	
Missing or defect safety features	☐	
Safe fuelling	☐	
Maintenance during work	☐	
Operating technique		
Crosscutting technique		
Incorrect handling of the chainsaw	☐	
Horizontal cuts not correct	☐	
Operating chainsaw left handed	☐	
Kick back danger	☐	
Incorrect use of the chain brake	☐	
Incorrect use of the aid tools	☐	
Inappropriate selection of tools	☐	
Unsafe positioning	☐	
Left thumb	☐	
Incorrect undercutting	☐	
Incorrect dimensions	☐	
Unawareness of tension and compression	☐	
Efficiency		
A lot of needless actions	☐	
Works not efficient	☐	
Safety		
Site		
Not aware of other persons	☐	
Not aware of environmental considerations	☐	
Use of PPE's	☐	
No use of PPE's	☐	
Handling of the chainsaw / ergonomics		
Incorrect starting method	☐	
Saw body above shoulder height	☐	
Overreaching with chainsaw	☐	
Inappropriate lifting techniques	☐	

(Photo 2: ICC1-Chainsaw Maintenance Mock Assessment-Spain: Robb 2011)

(Photo 3: ICC2- Basic Tree Felling Mock Assessment-Spain: Robb 2011)

- **Familiarisation, Standard Setting & Pilot Testing-Denmark, Sept 2010**

This second trial with trainers/assessors reviewed ICS2 before looking at developing ICS3 felling of larger trees and undertaking mock assessments once criteria had been agreed. Mock verifications (technical audits) of the assessment process were also undertaken to further help elaborate not only the level required for the chainsaw candidate but the assessor too. Assisted felling techniques and winching methods were looked at. Overall this was a shorter event than previous, run over 3 days, but due to the smaller size of the group of instructors **12** from **6** countries it was still a very effective time spent. The Skovskolen campus within the University of Copenhagen was well situated in the forests provided an excellent venue with all the facilities necessary and good quality log cabin accommodation previously constructed by the forestry students during their studies.

Some windblown root plates were available enabling an opportunity to have some time to consider ICS4 but this was very limited due to the lack of realistic tension forces. However it did introduce the idea to the instructors to start thinking about the criteria. ICS 1 & 2 were reviewed in the format seen in Fig.5 to include numbered practical skills and lettered knowledge items.

Brief summary of results:

- A structure for a theory exam domain list for all ICS levels (ICC1-ICC4) developed.
- Summary in for Level 1 is 100% and it splits in follow headings of assessment areas:
    1. Safety and health 10%
    2. Environment 10%
    3. PPE 25%
    4. Chainsaw maintenance 25%
    5. Cutting techniques 20%
    6. Aid tools 10%

- Pilot tests of ICC3 & 4 undertaken and analysed
- Draft ICS guidance for ICC3 & 4 developed
- Draft assessor guidance for ICC3 & 4 developed
- Demonstration of a possible on-line theory exam presented & discussed
- Agreement to develop a theory question bank
- Agreement on pre-conditions to assessment
- Analysis of trial verifications of an assessment being conducted

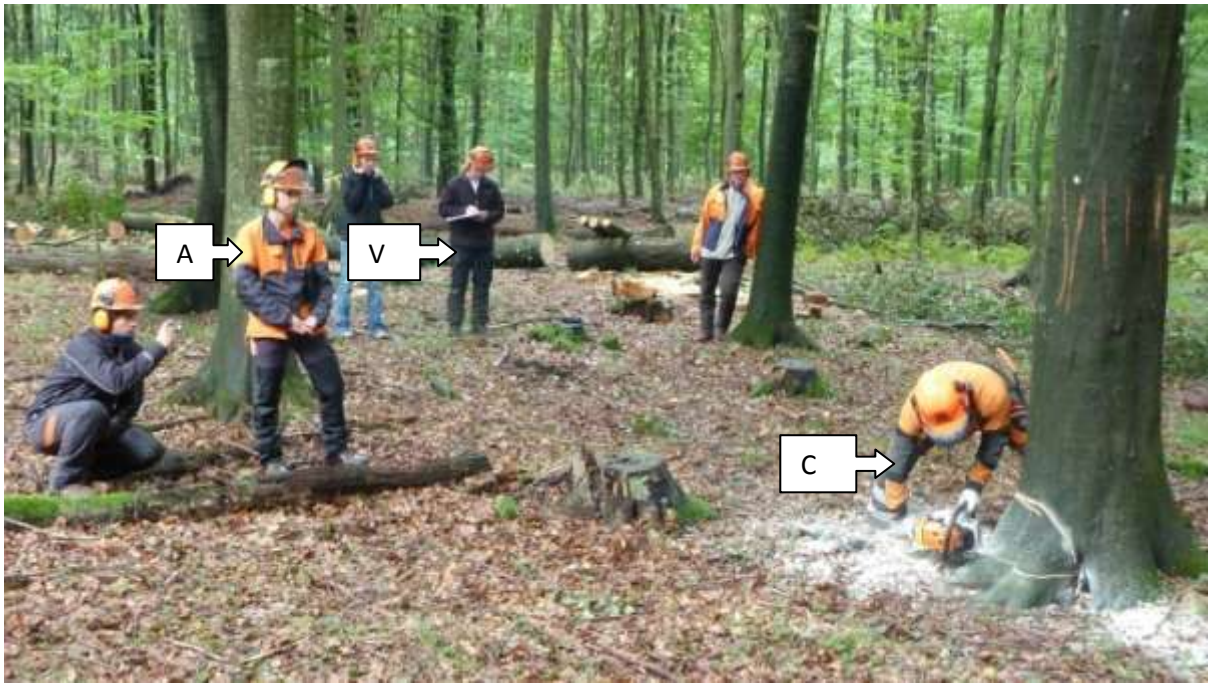
(Fig.5: Sample Draft ICS Standards: Robb 2011)

ICS Modules	
ICS 1: Chainsaw Maintenance and Crosscutting	
What the chainsaw operator must be able to do:	
1	carry out daily and weekly maintenance, settings and pre-start checks as per manufacturers' recommendations
2	maintain the safety and security of chainsaw(s) and other equipment
3	meet specified legislative and organisational environmental requirements
4	safeguard and maintain your own health and safety and that of those likely to be affected by your work
5	maintain effective teamwork when working with others
6	inspect timber and choose safe work position
7	use safe crosscut methods
8	select and use appropriate aid tools
What the chainsaw operator must know and understand:	
a	how to identify hazards and comply with the control measures of risk assessments
b	emergency planning and procedures
c	the implications of terrain, ground conditions, season, weather and species
d	causes of, and how to prevent, potential pollution, environmental damage
e	how to identify your own capabilities and limitations as operator
f	how to identify tension and compression in timber
g	precautions to take to avoid the danger of logs rolling
h	how to apply ergonomic working methods and the implications of manual handling regulations
i	the principles of safe/ergonomic manual handling techniques whilst crosscutting under guidebar length in diameter
j	how to move or roll timber by hand and with mechanical assistance
k	the methods and safeguards required when dismantling timber (e.g. hardwood or similar tops) with vertically aligned stems, branches or sections
ICS 2: Basic Felling	
What the chainsaw operator must be able to do:	
1	maintain the safety and security of equipment
2	maintain effective teamwork
3	safeguard and maintain your own health and safety and that of those likely to be affected by your work
4	brash trees and remove buttresses to the given specification
5	select a felling method which is relevant to the tree size and condition
6	fell trees using appropriate felling aids
7	take appropriate action in the event of unforeseen circumstances
8	delimb trees to the given specification in a safe and ergonomic way
What the chainsaw operator must know and understand:	
a	how to identify hazards and comply with the control procedures of risk assessments
b	the implications of terrain, ground conditions, season, weather and species
c	emergency planning and procedures
d	the legal requirements for felling trees in different circumstances
e	causes of, and how to prevent, potential pollution, environmental damage
f	how and why to initiate and maintain effective communication
g	your own role in work systems and procedures
h	how to recognise signs of disease and decay in trees and the effects of these on safety
i	how to take down hung up trees safely and in line with industry guidelines
j	how to recognise situations where a powered winch is appropriate
k	how to use a hand-powered winch and hand tools for the take-down of trees
l	difference between delimbing conifers and broadleaves

The instructor/assessor seen in photo.4 provides a good performance whilst 5 other instructors observe. Several more trials took place providing discussion and information to develop the standards criteria further, including windblown methods for ICC4 and the

inclusion of an exam matrix. During both events discussions were ongoing to technical items that should be classified as minor, major or critical during assessment.

(Photo 4: ICC3 Mock Assessment & Verification-Denmark: Robb 2011)



In the photo's C is the candidate, A is the assessor and V is the verifier.

(Photo 5: ICC4 Mock Assessment & Verification-Risk Assessment-Denmark: Robb 2011)

- **Familiarisation, Standard Setting & Pilot Testing-Czech Republic, June 2011**

By the time of the 3rd trainer's event a lot of work had been undertaken since Denmark. The results of which were presented on the first day indoors of the 5 day event supported by Mendel University, Brno, Czech Republic. When the chainsaw certification is finalised and ready to run the next stage in the project was the establishment of a bank of assessors and/or verifiers. Assessors would need to ensure that candidates worked to the ICS criteria whilst Verifiers would need to check that Assessors worked to the international criteria which needed to be developed in the form of an Assessor Code of Practice. All of this relied on updated versions of the standards and agreement on their suitability.

It was now time to put the assessors (including myself) to the test by undertaking mock assessments as candidates and having our practical skills technically evaluated at the same time! This would help to develop the bank of assessors & verifiers which is one of the project objectives. By using the revised standards from the last event at Denmark updated versions of the assessor score sheets were tested with a lot of feedback provided for improvement in technical content. **27** instructors from **11** different countries participated in this event.

(Fig.6: List of potential International Awarding Bodies: Robb 2011)

Potential NA	Country	Potential Assessors
CCA	Czech Republic	4
SKOVSKOLEN	Denmark	2
IPC/VANBIJSTERVELDTEN DAAMEN	Holland	To discuss
INVERDE	Belgium	4
KWF	Germany	1
ARPANA	Spain	2
CITY & GUILDS	United Kingdom	2
TCI	Ireland	2
BFW	Austria	3
CFFE	Spain	1
CPPP	Romania	2
CTFC	Spain	2
TAPIO/SEDU	Finland	3

Day 1 revised and updated assessment documentation and how to implement the chainsaw registration database for future use by national awarding bodies (NAB's) linked to an appropriate international website. The remainder of the week was spent in the forest. ICC levels 1-3 were tested and fine tuned to be made ready for revision before the final meeting in Dumfries, Scotland. By the end of the week the first potential International assessors passed their technical evaluation tests 17 out of 23. It was agreed that the standards were now good quality and the results were a reflection on that as all the candidates were experienced chainsaw instructors. Many instructors commented that the score sheets were still difficult to work with and needed further improvement.

Brief summary of results:

- 17 ICC Assessors Technically Evaluated. 11 Pass, 6 Fail.
- 11 National Awarding Bodies proposed for accreditation
- 7 ICC Lead Verifiers successfully evaluated
- ICC Levels 1,2,3 tested, evaluated & further developed
- National Awarding Body documentation to be further developed

(Photo 6: ICC2 Technical Evaluation of an assessor-Czech Republic: Robb 2011)

In relation to photo 6 a normal assessment is usually on a one to one basis. During the evaluations even experienced and suitably qualified instructors were making errors simply due to the fact that nearly 30 other instructors were observing! Although it does no harm for chainsaw assessors to remember that candidates can be nervous on skills assessments and therefore an observation of natural performance is extremely difficult to achieve. Different techniques imported from the transfer of innovation project included wide acceptance of a variety of felling techniques such as the Danish felling cut demonstrated in photo 7. Different types of split-level felling methods are more commonly found in the UK & Belgium for example. A variety of other perfectly safe felling methods existed in different countries which had to be approved for acceptance & recognition within the standards.

(Photo 7: ICC2 Demonstration of the Danish felling method-Czech Republic: Robb 2011)

(Photo 8: ICC2 Demonstration of the UK split-level felling method-Czech Republic: Robb 2011)

(Photo 9: ICC1 Demonstration of field sharpening-Czech Republic: Robb 2011)

(Photo 10: ICC2 Stump analysis-how an assessor evaluates accuracy of sink cuts, main felling cuts, thickness of hinges etc-Czech Republic: Robb 2011)

(Photo 11: ICC2 Taking down a hung-up tree with a felling bar-Czech Republic: Robb 2011)

(Photo 12: ICC2 Taking down a hung-up tree with poles-Czech Republic: Robb 2011)

(Photo 13: ICC2 Taking down a hung-up tree with a hand-winch –Czech Republic: Robb 2011)

(Fig.6: The 1st technically evaluated & approved International assessors: Robb 2011)

Potential NA	Country	Lead Verifier	Assessor
CCA	Czech Republic	Billy Robb	Kristyna Dvorackova Tomas Veverka Billy Robb
SKOVSKOLEN	Denmark	Jens Hansen	Jens Hansen
INVERDE	Belgium	Kris Hofkins	Kris Hofkins
ARPANA	Spain	Miguel Munoz	Miguel Munoz
CITY & GUILDS	United Kingdom	-	Billy Robb Kevin Birchall
TCI	Ireland	Kevin Birchall	Kevin Birchall
CFFE	Spain	Miki Casas	Miki Casas
CTFC	Spain	-	Daniel Gabarro Oriol Mola
IPC/VANBIJSTERVELDTEN DAAMEN	Holland	-	Jasper Visser

The Brno event proved that the standards could be used for assessments but some refinement to the format of the score sheets was needed. A question bank was being trialled but although oral tests were carried out a separate theory examination was still to be tested. Not enough time to fully evaluate Level 4 dealing with windblown/damaged trees was available and some potential assessors not participating in the evaluations would be interested to do this in the future. It was finally decided to hold the 4th meeting in Scotland as this would provide the perfect environment to undertake standard setting on Level 4!

- **Familiarisation, Standard Setting & Pilot Testing-Scotland, UK, September 2011**

The culmination of the project occurred in Dumfries hosted by Barony College. **28** participants from **9** different countries took part. A large number of important final decisions and agreements meant that the management team could completely revise all the chainsaw standards and complete this task prior to the project end date of 30th September 2011.

Level 4 was supported by the assistance of three experienced NPTC national chainsaw verifiers and successfully tested allowing the final revision of the standards to be undertaken. Feedback on assessor approval was extensively debated resulting in amendments to the proposed code of practice.

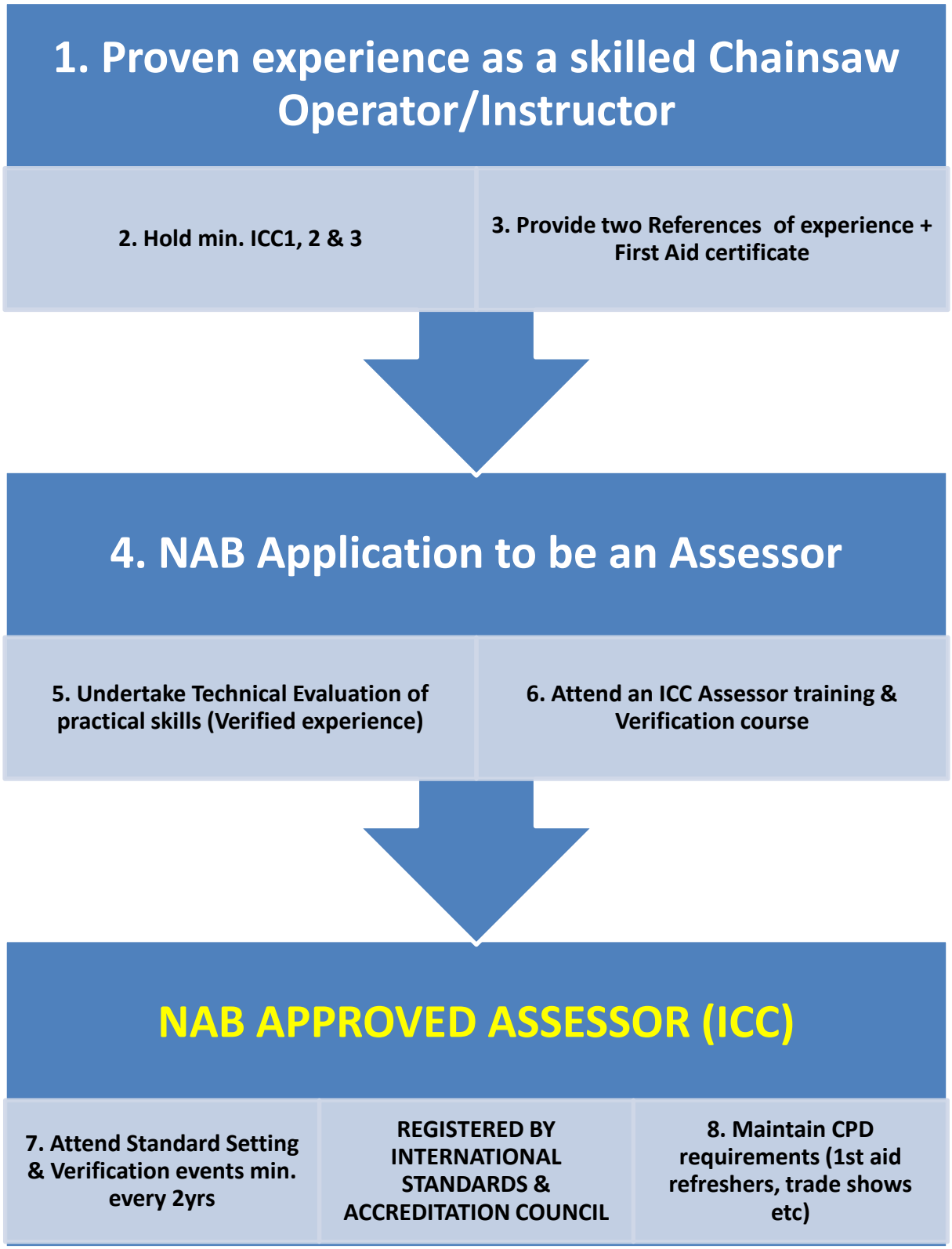
National Chainsaw Assessor Approval Procedure amended and agreed:

1. Minimum period of relevant experience as a Chainsaw Operator required according to the national guidance
2. Hold min. ICC1, 2 & 3 levels
3. Provide two references of experience + First Aid certificate
4. NAB-Application to be an Assessor
5. Undertake Technical Evaluation of practical skills
6. Attend an ICC Assessor Training & Verification course
7. NAB approved assessor (ICC):
8. Attend Standard Setting & Verification event min. every 2 years (Verifiers to undertake annual event)
9. Maintain CPD requirements (1st aid refreshers, trade shows etc)

- For Technical Evaluation (TE) – it is necessary to demonstrate wider and deeper practical knowledge

An assessor approval procedure chart was developed to help explain the process of achieving assessor status.

(Fig.7: Process for NAB assessor approval: Robb 2011)



Further to the earlier technical evaluations 3 new additions were added to the International bank of assessors representing Holland, Austria and Germany with successful results.

(Fig.8: Process for International assessor approval: Robb 2011)

INTERNATIONAL/EUROPEAN CHAINSAW STANDARDS: 2011 **ICS 1: Chainsaw Maintenance and Crosscutting Techniques** **What the chainsaw operator must be able to do: (Practical Test-Recommended guide bar size 30-38cm & maximum time allowed 60min)** **Pre-requisite: none**		Diagnostic tools				Level of importance			
		Written	**Practical**	Oral	Other	Minor	Major	**Critical**	
LO-1	**TAKE CARE OF YOURSELF (PPE) AND OTHERS AROUND YOU AT WORK-** Candidate to wear appropriate PPE, sign RA & show ID:	√	√						**1**
1:1	Chainsaw safety trousers		√					√	**1:1**
1:2	Chainsaw safety boots		√					√	**1:2**
1:3	Safety helmet		√					√	**1:3**
1:4	Eye & ear protection		√					√	**1:4**
1:5	Gloves appropriate to task		√			√			**1:5**
1:6	Non-snag outer clothing		√				√		**1:6**
1:7	Personal /Squad First Aid Kit		√					√	**1:7**
1:8	Whistle/Mobile/Radio		√				√		**1:8**
LO-2	**CHAINSAW MAINTENANCE-**Candidate to check function of safety features:	√	√						**2**
2A:1	Chain brake		√					√	**2A:1**
2A:2	Anti-vibration mounts		√					√	**2A:2**
2A:3	Safety chain		√				√		**2A:3**
2A:4	Throttle lock		√				√	√	**2A:4**
2A:5	Exhaust away from the operator		√				√		**2A:5**
2A:6	Chain catcher		√					√	**2A:6**
2A:7	Legal symbols		√				√		**2A:7**
2A:8	Right hand guard		√				√		**2A:8**
2A:9	Left hand guard		√					√	**2A:9**
2A:10	Chain/Bar cover		√					√	**2A:10**
2A:11	Functional clearly marked on/off switch		√					√	**2A:11**
	Candidate to sharpen whole saw chain:								
2B:1	Chain checked for damage and compatibility with bar and sprockets		√					√	**2B:1**
2B:2	Cutters sharpened using file of correct size with handle fitted & correct top/side plate angles		√				√		**2B:2**
2B:3	Equal length of cutters maintained		√				√		**2B:3**
2B:4	Filing burrs removed		√			√			**2B:4**
2B:5	Height and profile of depth gauges		√					√	**2B:5**
	Candidate to maintain guide bar:								
2C:1	Straightness of bar checked		√			√			**2C:1**

(Fig.9: Example of ICC1 Assessor score sheet/record of assessment: Robb 2011)

Assessment Criteria **ICC1**		Feedback comments to candidate & Result √/x
CHAINSAW MAINTENANCE & CROSS-CUTTING: RECOMMENDED GUIDE BAR SIZE 12"-15" (30-38cm) Max.Time Allowed - **60mins**		
1. **Take care of yourself (PPE) and others around you at work**		
Candidate to **wear appropriate PPE, sign RA** & show **ID**:		
1. **Chainsaw safety trousers**	c	
2. **Chainsaw safety boots**	c	
3. **Safety helmet**	c	
4. **Eye & ear protection**	c	
5. Gloves appropriate to task		
6. Non-snag outer clothing		
7. **Personal /Squad First Aid Kit - on work site**	c	
8. Whistle/Mobile/Radio		
2. **CHAINSAW MAINTENANCE (chainsaw OFF)**		
Candidate to check **function of safety features:**		
1. **Chain brake**	c	
2. **Anti-vibration mounts**	c	
3. Safety chain		
4. **Throttle lock**	c	
5. Exhaust away from the operator		
6. **Chain catcher**	c	
7. Legal symbols: Head/eye/ear defender		
8. **Right hand guard**	c	
9. Left hand guard	c	
10. Chain/Bar cover	c	
11. **Functional clearly marked on/off switch**	c	
Candidate to **sharpen <u>whole</u> saw chain** (Assessor to provide samples if saw already sharpened):		
1. **Chain checked for damage and compatibility with bar and sprockets**	c	
2. Cutters sharpened using file of correct size with handle fitted & correct top/side plate angles		
3. Equal length of cutters maintained		
4. Filing burrs removed		
5. **Height and profile of depth gauges (rakers)**	c	
Candidate to **maintain guide bar** (assessor to provide samples if guide bar already in good condition):		
1. Straightness of bar checked		
2. Identify uneven/damaged/blued/cracked rails	c	
3. Burrs removed and edges chamfered/curved		
4. Groove (depth checked) and oil holes cleared		
5. Sprocket nose greased if applicable		
6. Bar turned to reduce wear		

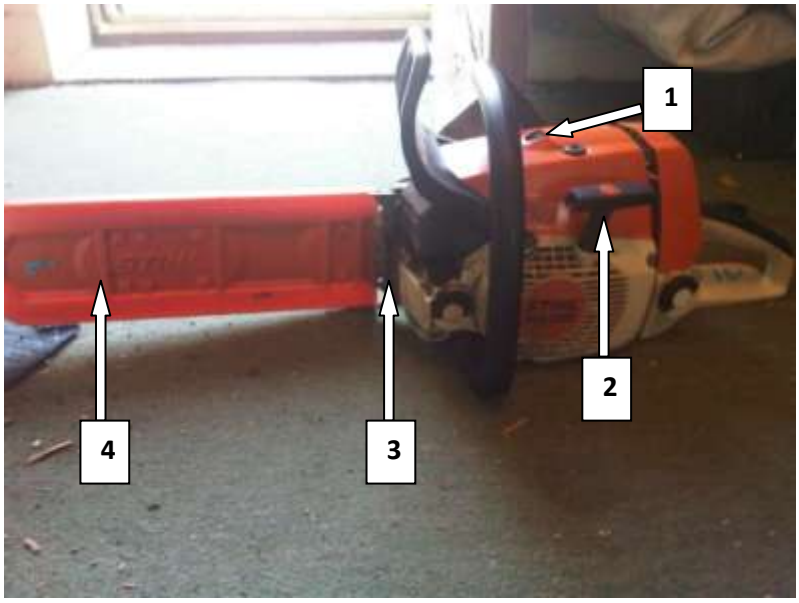
(Photo 14: ICC4 dealing with windblown root plates-Scotland: Robb 2011)

(Photo 15: Final project discussions indoors-Scotland: Robb 2011)

Examples of the theory tests undertaken indoors also are shown below.

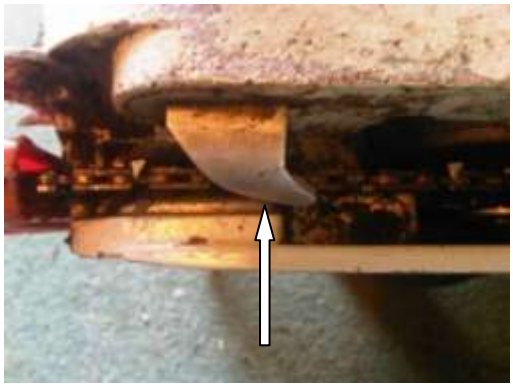
1. *In the picture below which arrow indicates an **essential** safety feature?*

a) 1
b) 2
c) 3
d) 4



2. *In the picture below which statement correctly describes the function of the safety feature indicated by the arrow?*

a) To reduce the potential for kickback
b) To reduce the potential for vibration damage
c) To reduce the potential for a chain to throw back to the operator
d) To reduce the potential for a chain to throw forward to the operator



(Photo 16: And finally there was sunshine!!-Scotland: Robb 2011)

Brief summary of results:

- Assessor Code of Practice final draft produced
- ICS 1-4 final draft produced
- ICC Assessor Score Sheets 1-4 final draft produced (now included assessor guidance)
- Bank of International assessors/verifiers approved representing the following countries
    1. **UK**
    2. **Austria**
    3. **Germany**
    4. **Holland**
    5. **Belgium**
    6. **Czech Republic**
    7. **Spain**
    8. **Denmark**
    9. **Ireland**

Overall the project was very successful and achieved all the objectives and more. Following intense debate on alternative structures to manage the chainsaw certification, within the project partnership, it is envisaged that the scheme will continue to develop in 2012.

Proposals include the development of an **International Awarding Body Association** consisting of national awarding bodies that will take forward project products such as the international standards leading to recognised International and European chainsaw certification. This can be achieved through the development of an appropriately qualified and experienced international standards and accreditation council consisting of partner countries with equal representation on future developments.