

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

CABINET MAKING (BCCM#2)

Table of Content

1. NAME AND DESCRIPTION OF TRADE.....	2
1.1.1. Cabinetmaking	2
2. SCOPE OF WORK:.....	2
2.1. PRACTICAL WORK.....	3
3. SKILL MANAGEMENT PROCEDURES (SM).....	3
3.1. DOCUMENTS REQUIRED.....	3
3.2. PRE-COMPETITION RESPONSIBILITIES	4
3.3. SKILL MANAGEMENT PROCEDURES FOR THE CHIEF EXPERTS.....	4
3.4. HONESTY AND TRANSPARENCY.....	8
3.5. INFORMATION POLICY	9
4. THEORETICAL KNOWLEDGE.....	10
5. MATERIALS	10
6. WORKSHOP INSTALLATIONS	11
7. SAFETY INFORMATION	12
8. TEST PROJECT MARKING.....	15
7.2 MARKS	15
7.3 RATING.....	16
8 COMPETITION PROCEDURE.....	19
9 JUDGING PROCEDURAL REQUIREMENTS.....	19
10 GENERAL SAFETY REQUIREMENTS.....	20

NATIONAL SKILLS COMPETITION
Competitions Sub-Committee
CABINET MAKING (BCCM#2)

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

CABINET MAKING (BCCM#2)

INTRODUCTION

WorldSkills Jamaica, by a resolution of the National Organizing Committee and in accordance with the Constitution, the Standing Orders and the Competition Rules, has adopted the following minimum requirements for this skill for the National Skills Competition.

The Technical Description consists of the following:

- Section 1 – Technical/Competition Description (TD)
- Section 2 – Project Design Criteria (PD)
- Section 3 – Skill Management Procedures (SM)
- Section 4 – Workshop Setup (WS)
- Section 5 – Infrastructure List (IL)
- Section 6 – Appendices

Effective 01.04.07

Grace Mclean (GM)

Chairman, Competition Committee

01.04.07

Daphne Simmonds

Co- Chair

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

CABINET MAKING (BCCM#2)

The National Skills Competitions Sub-Committee has adopted the following minimum requirements for applicants' entry in the Skills Competition.

The effective date will be that date on which this document is issued, and is subject to change by the Skills Jamaica Steering Committee.

1. NAME AND DESCRIPTION OF TRADE

1.1 The name of the trade is:

1.1.1. Cabinetmaking

1.2 Cabinetmaking covers mainly the manufacture, in small workshops, of furniture and built-in units in wood (either solid, veneered, plastic-coated or painted). The cabinetmaker may also work in larger plants as a specialist.

1.3 **This technical description must be known to every candidate.**

1.4 Words implying masculine gender only shall include the feminine gender.

2. SCOPE OF WORK:

The test project consists only of practical work.

2.1 The theoretical knowledge is limited to that necessary to carry out the practical work.

2.2 A test project will be prepared in accordance with the requirements of Appendix 1

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

CABINET MAKING (BCCM#2)

2.1. PRACTICAL WORK

2.3.1 The competitor has to carry out, independently, the following tasks:

Manufacturing a piece of furniture according to a drawing description, using appropriate material.

2.3.2 The appropriate technical skills are:

- Reading and interpreting drawings and written instructions
- Knowledge of components and construction techniques
- Planning processes and sequences
- Joint manufacturing by hand or machine
- Making frames from solid timber – local material (bamboo, coconut board)
- Working with veneers
- Fitting and fixing of hardware
- Making and adjusting moveable parts to allow for smooth movement
- Machine profiles and other operations in a safe manner
- Obtaining dimensional accuracy within tolerances
- Clearing up of surfaces to specifications
- Mark and produce curved surfaces

2.3.3 Manufacturing by machine in compliance with safety regulations.

3. SKILL MANAGEMENT PROCEDURES (SM)

3.1. DOCUMENTS REQUIRED

3.1.1 The Chief Expert will have available a current copy of all documents associated with this skill for the Competition.

3.1.2 The documents required are:

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

CABINET MAKING (BCCM#2)

- Technical Description
- Competition Rules
- Health and Safety documents
- QAMS – all documents
- Any other documents referred to in the documents listed above.

3.1.3 While it is understood that the Chief Expert will have a copy of these documents in there shall also be a complete set that is available for the experts and other competition workers.

3.1.4 The Chief Expert is expected to have a sound knowledge of the requirements and procedures specified in the documentation.

3.1.5 The Jury President is expected to have a thorough knowledge and understanding of the requirements and procedures specified in the documentation.

3.2. PRE-COMPETITION RESPONSIBILITIES

3.2.1 In the period between one National Skills Competition and the next, the elected Chief Expert is responsible to ensure that the requirements of Section 2 – Project Design Criteria are complied with.

3.3. SKILL MANAGEMENT PROCEDURES FOR THE CHIEF EXPERTS

The following speaks to the procedures prior to and during the Competition

3.3.1 The procedures specified below must be adhered to.

3.3.2 On arrival at the Competition site for the first time, the Chief Expert must:

- Welcome the experts and ensure introductions are made
- Inform them of their duties and responsibilities in terms of the Competition Rules and Standing Orders

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

CABINET MAKING (BCCM#2)

- Ensure that the project is endorsed by all the experts and that a copy is signed by all the experts
- 3.3.3 The Chief Expert will then divide the experts into teams for the following activities:
- Verify that the material on site is appropriate and sufficient
 - Verify again that the quantities of material as specified on the material list is accurate
 - Develop a program for the competitors to complete the modules
 - Develop timetables for activities
 - Set up equipment
 - Confirm that the layout, work areas and equipment are in accordance with the workshop setup requirements
 - Confirm that all machinery/equipment is in a safe working order
 - Confirm that all workstations/machinery/equipment are in accordance with the plan, and that they are numbered
 - Confirm that there is sufficient illumination
 - Confirm that there is sufficient space for the competitors to work efficiently
 - Confirm that the barriers are far enough removed from the competitors to ensure that there will be no interference, and if they are not, set up a roster among the experts to police the area during the Competition
 - If necessary, set up duty rosters for activities during the Competition – e.g. keeping watch during lunch, preventing access of unauthorised persons, etc
- 3.3.4 The Chief Expert will then divide the experts into teams for purpose of marking and setting up marking schedules in accordance with the requirements.
- 3.3.5 Suggestions and comments for the revision and improvement of the Technical Description are to be provided to the Deputy Chief Expert in

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

CABINET MAKING (BCCM#2)

writing. The Deputy Chief Expert will reduce the information to a single typed document ready for discussion by all experts. Prior to leaving the Competition site, the Chief Expert, the Deputy Chief Expert and the Jury President will facilitate the discussion and revision of the Technical Description.

- 3.3.6 At any time that a unanimous decision is not achieved within a reasonable time, the Chief Expert will put the matter under discussion to the vote. A majority will be 50% of the experts present plus one. This decision will be final. In the event that an expert is absent at the time that the vote takes place, he/she has the right to be informed of the decision but the matter will not be raised again or voted upon again. The exception to this majority rule will be in the case of approval of the changes to the Technical Description, where the majority of 80% is required.
- 3.3.7 In the event that an extension of time is requested for the Competition to exceed the allotted hours, the matter must be discussed with the Jury President. All possible alternative solutions must be investigated before approval of an extension of time is requested, or will be approved.
- 3.3.8 Prior to the end of the Competition, the Jury President will facilitate the selection of the Chief Expert and Deputy Chief Expert for the next national Skills Competition.
- 3.3.9 Experts are eligible for selection as a Chief Expert if they:
- Have attended the National Skills Competition at least twice before (if less than 4 experts have been to the National Skills Competition before, this criterion may be relaxed at the discretion of the Jury President)
 - Demonstrate a high degree of expertise in the skill
 - Demonstrate leadership qualities.
 - Are competent using a computer and the Internet – specifically to facilitate the Discussion Forum for their skill category.

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

CABINET MAKING (BCCM#2)

3.3.10 The process by which selection will take place is by secret ballot and is as follows:

- Each expert present will list their choice of three experts in order of preference
- The Jury President will allocate a score of three (3) points to each expert's first preference, two (2) points to the second preference and one (1) point to the third preference
- The Jury President will then calculate total scores and announce the three highest scoring experts
- The expert with the highest score will be appointed Chief Expert for the next National Skills Competition
- If the first choice cannot attend, then the second choice will be Chief Expert
- If the first and second choice cannot attend, then the third choice will attend
- If none of the choices can attend, then the jury president will appoint, or facilitate the appointment of a Chief Expert
- The names of the selected experts will be entered into the provided documentation and signed by the Jury President and returned to the co-chair of the competitions committee.

3.3.11 Changes to the method of Competition design or suggestions offered for the next Competition design process or tasks must be written down and signed by 80% of the experts.

3.3.12 The Deputy Chief Expert's primary role is to ensure that the Technical Description is updated to reflect the technological advances of the skill category and include overall improvements for the preparation and running of the Competition. He/she will ensure that all changes to the Technical Description are entered, that all experts sign it, and that it is delivered to the co-chair of the competitions committee as a hard copy and digitally.

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

CABINET MAKING (BCCM#2)

3.3.13 The Deputy Chief Expert also assists in the distribution and collection of the QAMS Audit Questionnaires and assists the Chief Expert where necessary.

3.4. HONESTY AND TRANSPARENCY

3.4.1 The competitors that attend the National Skills Competition have the right to expect fair and honest treatment during the Competition in terms of the following:

- Instructions that are clear and unambiguous
- Marking schedules that provide no advantage to an opposing competitor
- All necessary equipment and material specified within the skill documentation that are required to complete the Competition
- The assistance necessary from judges and officials to ensure that he is able to complete the project. (The assistance deemed necessary will be provided equally and at the same time to all competitors present)
- No undue interference by officials or spectators that may hinder them in the completion of their project

3.4.2 Every competitor has the right to expect and demand that no opposing competitors will receive undue or unfair assistance or intervention that may provide that opposing competitor with an unfair advantage.

3.4.3 All officials and judges present on the Competition site are expected to ensure that paragraphs 3.4.1 and 3.4.2 above are complied with and maintained.

3.4.4 It is the responsibility of the Chief Expert or his Deputy to ensure that all competitors, interpreters, officials and judges comply with and maintain the integrity of the Competition, and additionally ensure that all necessary steps are taken to ensure that:

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

CABINET MAKING (BCCM#2)

- Outside influences do not unduly improve or decrease competitors' abilities to provide a worthy performance.
- 3.4.5 A briefing will be provided to all experts and competitors on the requirements for integrity during the Competition.
- 3.4.6 Additionally, the Chief Expert is expected to identify these and any other factors that may exist on the Competition site that may result in the contravention of paragraphs 3.4.1 and 3.4.2 above, and reduce them to a checklist for continuous reference.
- 3.4.7 In the event that any competitor, judge, official, observer or competitor compatriot is found to be attempting to gain or provide assistance in any form that may result in an unfair advantage, the Chief Expert is to immediately refer the matter to the Jury President.
- 3.4.8 The Chief Expert will receive nominations and appoint a Security Officer whose responsibility it will be to ensure that these requirements are carried out.
- 3.4.9 It will be explained to all experts and competitors that nothing is to come in or out of the site unless specified by the Chief Expert as being allowed after being briefed on this topic.
- 3.4.10 Security checks will be carried out each day on experts and competitors (by experts and competitors) upon entry and exit to the site.

3.5. INFORMATION POLICY

- 3.9.1 During the competition a modified project plan without measurements is to be made available to the public.

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

CABINET MAKING (BCCM#2)

4. THEORETICAL KNOWLEDGE

4.1 Interpretation and execution of drawings and sketches according to ISO-standards.

4.2 Knowledge of materials and processes.

- (Environmentally friendly)

5. MATERIALS

- (All local materials) – (no imported components)

Solid wood

- Up to 60 mm thickness
- Good quality
- Degree of dryness adapted to the climate
- Precise in form and dimensions

5.2 Panels

- Plywood
- Particle boards
- MDF
- These materials may be covered with veneer or plastic

5.3 Veneers (local straws, “jippi – jappa”)

- Sliced wood veneers.
- Laminated plastic (no synthetic materials)

5.4 Special pre-cut materials

- Glass
- Metal

5.5 Hardware

- Key plates and bushes
- Various hinges
- Stays

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

CABINET MAKING (BCCM#2)

- Touch latches
- Knock down, ready to assemble fittings
- Locks

5.6 Additional material (locally fabricated)

- Screws
- Pins
- Joint tongues of plywood
- Dowels, diameters 6/8/10/12 mm
- Biscuit (lamello)
- PVA glue
- Contact –adhesive
- Cleaning rags
- Abrasive papers of various grits (80 – 180)²

6. WORKSHOP INSTALLATIONS

6.2 Each competitor will have a minimum working area of 4 x 4 m. Each bench must have the minimum of one vice with wooden chops mounted on the long side of the work surface of the bench.

6.2.1 The following machines, equipment, accessories and tools will be made available to the cabinetmaking competitors only:

- 1 – combination surface planning and thickness machine with cutter guard
- 1 – bandsaw with guard, wide and narrow blades
- 2 – sliding table panel saws with tilting arbor, riving knife, top guard, pushsticks and T.C.T. saw blades
- 3 – small table saws with riving knife, top guard, pushsticks and T.C.T saw blades
- 3 - drop/mitre saws with guards and T.C.T. saw blades
- 3 – router tables with fence, guard, router and cutter

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

CABINET MAKING (BCCM#2)

- 2 - spindle shaper/moulder with fence, guard and cutters
- 2 - horizontal boring machines with drill bits
- 1 – vertical drill press
- 1 – horizontal pad (stroke) sander with sanding belts
- 1 – horizontal edge sander with sanding belts
- 1 – tool grinder
- 1 – hydraulic hot veneer press with work table
- 3- biscuit cutter machines (lamello)
- Electrical extension cords
- Additional pieces of wood for test pieces. These must be of different specs than the test project.

7. SAFETY INFORMATION

- All machines must conform to minimum safety standards.
- The shopmaster or the workshop machines, including the use of safety glasses and hearing protection.
- All circular saws must have a riving knife and top guard.
- For all machines wooden safety aids could be requested by experts.

The experts will check safety all machines and make a decision safe or not safe.

- 6.3 The working area for each competitor shall be at least sufficient to allow the competitor to work safely, and include the requirements of Sec. 6.1 above, and shall also allow for the equipment and machines specified in Sec. 6.4 below.

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

CABINET MAKING (BCCM#2)

The light conditions must be uniform for all competitors and must be of minimum 300 lux at each bench top.

- 6.4 The following equipment will be made available to each competitor:
- A minimum of 2 screw clamps, of each size, for each competitor (200 – 300 mm, 500 – 800 mm, 1000 – 1200 mm)
 - A planning bench 1 m by 1 m x 0.9 m must also be supplied.
 - A plywood panel 1 m by 1 m must be supplied to display the competitor's drawings.
 - Electrical supply at each work area –It will be the contestant's responsibility to bring a transformer if necessary (220 or 110 v).
- 6.5 The competitor can bring as an example, the following tools in a toolbox (he may bring any other tools that he wishes). These items may also be provide by Worldskills Jamaica
- Pencils
 - Compasses
 - Paper
 - Adhesive tape
 - Rules (tape, steel, vernier)
 - Try square
 - Mitre square
 - Sliding bevel
 - Marking gauges/knives
 - Plywood for templates
 - Chisel approx. 3-25 mm
 - Saws (various)
 - Smoothing plane
 - Rabbet plane

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

CABINET MAKING (BCCM#2)

- Block plane
- Spoke shave (round and flat)
- Files/rasps
- Veneer cutting equipment
- Abrasive paper, grit 80/100/120/150/180/240
- Sanding blocks counter sink
- Set of drills 1 – 10 mm
- Dowel drills 8 and 12 mm
- Extension lead
- Multiple plug
- Mallet
- Hammer
- Screwdrivers, different types and sizes
- Glue
- Scrapers
- Small and large clamps
- Sharpening stone
- Small broom for bench

6.5.1 Hand head electric portable power tools

- Drills
- Sanders
- Routers
- Saws
- Lamello (biscuit machine)

Permitted Stationary mounted machines:

- 1 Chop (Drop) saw
- 1 Inverted router table

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

CABINET MAKING (BCCM#2)

- 6.5.2 A check will be made of competitors' toolboxes to ensure no similar timber or veneer as per test project.

Also a check will be made to ensure no stationary machines not in trade description.

- 6.6 The competitor must set up his workspace within a 4-meter by 4-meter area not to exceed 1.5 meters in height. He may use any equipment that meets the contest safety requirements. His equipment must not interfere with another contestant's workspace. No equipment using installed software will be allowed (e.g. computers or CNC).

8. TEST PROJECT MARKING

- 7.1 The experts will decide together on the test project, the marking criteria and the tolerances on forms 5, 5A and 6, and they will prepare the material list.

7.2 MARKS

objective and subjective

Perfect	- 10 points
Very Good	- 9 points
Good	- 8 points
Rather Good	- 7 points
Sufficient	- 6 points
Medium	- 5 points
Weak	- 4 points
Insufficient	- 3 points
Bad	- 2 points
Very Bad	- 1 point

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

CABINET MAKING (BCCM#2)

Zero - 0 point

No dimension - 0 point

7.3.2 Tolerance + - 0.9 mm

Dimensions must be measured with the competitors own rule.

7.3 RATING

Section Item	Maximum Points
A Main dimensions	10
B Secondary dimensions	9
C Face marking and setting out	4
D Joints before gluing	15
E Joints after gluing	20
F Fittings and moveable parts	16
G Surfaces and conforming to drawing	21
H Use of material	5

7.3.2 The marking for section A, B and H are objective.

7.3.2 The marking for section C to G are subjective.

1. All subjective marking to be done by a team of three.
2. An expert cannot mark his own candidates work. For this situation one or two "spare" experts who would take their place.
3. A group of marking experts should have at least one experienced expert who has attended a number of competitions and one new expert who has attended a number of competitions and one new expert.

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

CABINET MAKING (BCCM#2)

7.3.3 Procedures for subjective markings:

- Before the first marking begins the team must discuss and write down marking guidelines.
- When marking is carried out no communications will take place to avoid any influence by an expert.
- Only when the marking has a difference of more than two marks discussion will take place. Afterwards a second marking will take place.
- Final score must be within two marks.
- When marking is carried out only the chief expert, the deputy expert may be present. All other experts should be away from the marking area.

7.3.4 Modular marking

After 12 hours all candidates must have finished for the modular marking.

7.3.4 Explanation of A – H

A Main dimensions

Most important dimensions e.g. height, width etc.

B Secondary dimensions

Important dimensions of different components.

C Face marking and setting out

Indication of face marking systems, joints and all further machine set-up so that the component can be made without drawing by an other person.

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

CABINET MAKING (BCCM#2)

D Joints before gluing

Must be presented to experts for marking after cutting etc.
Inside of joints need to be seen before gluing. Dowels must be inserted in a uniform manner for presentation/markings.

E Joints after gluing

Inspection of joints of the completion.

F Fittings and moveable parts

Hardware fittings and doors, drawers etc. according to drawing and information sheets.

G Surfaces and conforming to drawing

The quality of finish of all surfaces e.g. solid wood, veneered panels and edges should be suitable for polishing.

The project must conform to the drawing and instructions in all instances.

H Use of material

A penalty for the use of extra materials through mistake to a maximum of 5 marks

7.4 Conversion to the 400 – 600 scale will be done by computer.

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

CABINET MAKING (BCCM#2)

8 COMPETITION PROCEDURE

- 8.1 Before the competition, the experts will carry out duties as per Appendix 2
- 8.2 The competition will be worked on over all two days of the competition.
Wherever possible, modules will be completed on each day for all competitors so that progressive marking can take place, and for results to be made available each day.
- 8.3 Competitors will have time made available to familiarise themselves with material and processes. Where processes are particularly difficult, a subject matter expert will be provided to demonstrate the process and the competitors will be given the opportunity to practice.
- 8.4 The competitors will be given all competition documents including the marking criteria prior to the commencement of the competition so that they may study the requirements.
- 8.5 Prior to the start of the competition, each competitor will receive a detailed timetable reflecting the timing for completion of the modules.

9 JUDGING PROCEDURAL REQUIREMENTS

- 9.1 The experts that attend the competition will be divided into marking groups to deal with each section of the marking criteria.
- 9.2 Every completed module will be marked on the same day in which it was completed.

NATIONAL SKILLS COMPETITION

Competitions Sub-Committee

CABINET MAKING (BCCM#2)

10 GENERAL SAFETY REQUIREMENTS

- 10.1 All competitors must use safety glasses when using any hand, power or machine tools or equipment likely to cause or create dust, chips or fragments that may injure the eyes.
- 10.2 All competitors must bring with and use appropriate protective clothing and regulation footwear.
- 10.3 All competitors must wear hearing protection when necessary.
- 10.4 All machinery, equipment and safety clothing must comply with the safety rules
- 10.5 Competitors must keep their workspace clear of obstacles and the floor space clean of material and equipment – any items likely to cause the competitor to trip, slip or fall.
- 10.6 Failure by the competitor to comply with safety directions or instructions may incur loss of marks for safety.
- 10.7 Judges will wear the appropriate personal safety equipment when inspecting, checking or otherwise working with a competitor's project.

NATIONAL SKILLS COMPETITION
Competitions Sub-Committee
CABINET MAKING (BCCM#2)

APPENDIX 1

Project Design Requirements

1. A 5-hour test project must be drawn and a photograph must be presented to prove that the project has been made.
2. The test project must have a drawer and a hinged component.
3. To qualify for test project selection all documentation must be presented including drawing to the correct specifications. The drawings must be to the scale of 1:1. The orthographic drawing to an identified reduced scale.
4. The maximum size of a project is 3000 mm (length + height + depth).

NATIONAL SKILLS COMPETITION
Competitions Sub-Committee
CABINET MAKING (BCCM#2)

APPENDIX 2 TO BE PLACED IN A GENERAL SECTION

Duties of experts before competition

Timetable for experts:

Day 1

- **Check that all machines and equipment are supplied as per trade description.**
- **Check that light levels on bench and machine area are to the standard 300 lux.**
- **The chosen test project must be checked and if necessary revised.**
- **The materials list must be prepared early for the shop master.**

Day 1 - 2

- **Translations.**
- **Prepare formula 7.**
- **Update trade description.**
- **Select test projects for next competition.**
- **Prepare marking book for computer.**
- **Select judging teams and prepare marking list and schedule.**
- **Prepare material, check for quality and accuracy and sort out for each competitor to ensure that all material is of a level standard.**
- **All machines and equipment must be checked for function, quality and safety.**
- **Any other new duties requested from the chief expert or his deputy, must be carried out by the experts.**