Student's Name:

Cormac Lynch

Student Number:

_____

Dublin Institute of Technology

Dept. of Construction Skills

Dublin School of Architecture

Bachelor of Technology in Timber Product Technology

Course Code:	DT169
Academic Year:	2013/14
Semester:	1
Module:	Jointing techniques and furniture 1
Lecturer:	Aidan Ryan
Year:	1

I declare that the work contained in this submission is my own work and has not been taken from the work of others save to the extent that such work has been cited within the text of this submission.

Signed: _____ Date: _____

Sequence of events for three railed frame

1. Check timber for defects

Timber must be checked for any defects which may affect the construction and look of the frame such as knots and shakes or cracks in the timber

2. Check sizes of timber

Timber must be checked to ensure correct sizes to correspond with plans

3. Mark face side and edge

Face side and edge should be marked on all pieces to allow for accuracy when marking and also for ease of machining and fitting together when piece is finished

4. Mark overall sizes

Overall sizes need to be marked using a square and fine pencil in order to allow for waste on the timber and any ends which need to be squared off

5. Mark dowelled rail position

The dowelled rail position needs to be marked as the dowelling takes place on the bottom edge of the stile and this mark also allows for the rails to marked into position accordingly

6. Mark centre tenoned rail position

The centre rail position needs to be marked into position using the dowel rail position as reference

7. Mark top bridle rail position

The top rail is then marked in position using the dowel rail as reference

8. Cut dowelled rail to exact dimensions

Dowelled rail must be measured and marked to the exact dimensions using a square and fine pencil and then cut to the exact length as is required for using the dowelling machine

9. Mark shoulder lengths on centre and top rail

The shoulder lengths for the centre and top rails should be marked off the bottomed dowel rail as the shoulders will be the exact same length as the overall length of the dowelled rail

10. Mark tenons on centre and top rail

The tenons on the centre and top rail should be marked using the mortise gauge which has been set using the mortise chisel as reference for the width of the tenon

11. Mark mortise postions for centre and top rail on the stiles

The mortise positions for the centre and top rails should be marked in using a square and fine pencil to mark in the dimensions given in the plans

12. Cut cheeks of tenons

The cheeks of the tenons are cut at this stage because the gauge lines will be removed when the rebates are cut

13. Cut large rebate

The large rebate (15mm x 6mm) is now cut on the back of the frame using the spindle moulder which has been set up with the correct size cutter and to the correct height. All safety precautions must be used such as guards must be in place as well as using feather boards/shaw guards to hold the piece in place when being passed by the cutter.

14. Cut small rebate

The smaller rebate is now cut on the front of the frame using the spindle moulder with the correct cutter installed and set to the correct dimensions. . All safety precautions must be used such as guards must be in place as well as using feather boards/shaw guards to hold the piece in place when being passed by the cutter.

15. Cut mortises on stiles

The mortises are now cut using the mortise machine to the lines previously marked using the rebate groove as a reference for the position of the mortise. The piece must be firmly clamped in place and hands must be kept away from the chisel at all times.

16. Cut and square tenon cheeks and shoulders

The tenon cheeks and shoulders are now cut using the tenon handsaw and are squared off using a sharp chisel and a shop made jig which allows for perfectly square shoulders to be pared off. These are then checked to fit into the mortises and any changes needed are made at this stage

17. Cut dowel joints

The dowel joints are now cut in the position previously marked using the dowelling machine ensuring that both the rails and the stiles are placed into the machine with their respective face edges facing up

18. Check joints for square

The frame is now preassembled to ensure that all the joints fit and are square before cutting mitres

19. Mark mitre positions

The mitre positions are marked in using the preassembled rails and stiles as reference for the position of the mitres.

20. Cut mitres

The mitres are now cut in the previously marked positions using a sharp chisel and a shop made mitre jig

21. Dry fit, check all joints and overall frame for square

Once all mitres are cut the frame is then dry fitted together to check that all joints and mitres close and that the frame is square

22. Sand inside edges of frame

The frame is then disassembled and the inside edges sanded down before gluing as this would be much more difficult and time consuming after glue up

23. Glue and cramp frame

The frame is then glued and cramped together for the final time whilst also being checked for overall squareness and any adjustments needed during cramping are done now

24. Sand exterior of frame for finishing

Once the glue has cured the cramps are removed and the exterior of the frame along with any excess glue squeeze out is now sanded off to ensure a smooth finish before being lacquered or polished.

Time management

The estimated time to produce the piece was 4 hours from start to finish, the actual time to make the piece was 5 ½ hours to finish it. This is due in part to too much time spent squaring shoulders and cutting mitres.

Reflections on work piece

As a piece I was somewhat pleased with the outcome of the finished product. But some time saving changes could be made to my approach of the piece especially in regard to the paring and cleaning of the tenons whilst squaring off the shoulders. The accuracy of the mitres also needs improvement which should come with practice and perfecting my method.