





ΥΠΟΥΡΓΕΙΟ ΕΘΝΙΚΗΣ ΠΑΙΔΕΙΑΣ & ΘΡΗΣΚΕΥΜΑΤΩΝ ΕΙΔΙΚΗ ΥΠΗΡΕΣΙΑ ΔΙΑΧΕΙΡΙΣΗΣ ΕΠΙΧΕΙΡΗΣΙΑΚΟΥ ΠΡΟΓΡΑΜΜΑΤΟΣ ΕΚΠΑΙΔΕΥΣΗ & ΑΡΧΙΚΗ ΕΠΑΓΓΕΛΜΑΤΙΚΗ ΚΑΤΑΡΤΙΣΗ (Ε.Π.Ε.Α.Ε.Κ. ΙΙ)

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CHAPTER 1

THE WORLD OF WOOD

A world without wood would be unthinkable. From early shelter wood has been essential to humankind. It provides the habitat for countless species of flora and fauna.

An equally important function of wood is its role with the oceans as the lungs of our planet and, through its own rhythms of take-up and release of moisture, the vital part it plays in regulating our climate.

Conifers, which we call softwoods, emerged 275 million years ago, eventually covering two-thirds of the earth's surface. The broad-leaved, flowering, and fruit-bearing hardwood trees first emerged about 140 million years after the conifers. The conifers provide the bulk of the world's lumber.

GRAIN-FIGURE-ODOR

We are all familiar with the tree's growth rings. As the sap rises in the spring and stops in the fall in temperate climates, this interrupted growth cycle causes a distinctive wood layer to form, and this is called a growth ring. These are not really "annual rings" by which to count the age of a tree, because cold winters or periodical droughts can interrupt the growth cycle. In the tropics the growth may be continuous, and the wood may appear to have no growth rings at all.

Each growth ring has two distinct zones. Fast-growing earlywood cells formed in the spring have thin walls and large cavities, while slower-growing latewood cells formed in the summer have small cavities with thick walls. It is the contrast between those two layers that enables us to identify the tree with naked eye, when viewing an end section.

Grain, strictly speaking, refers to the lines visible on a cut board that show the intersection of the growth rings and the plane of the board itself.

The natural arrangement of the wood fibers in relation to the main axis of the tree produces several types of grain. Crossgrain appears when the fibers are not parallel to the main axis of the tree, and wavy grain where the fibers form short waves in a regular pattern. You can also find curly grain and spiral grain, diagonal grain and interlocked grain.

Texture is governed by the variation in size of the early- and latewood cells. There is also the quality of luster – which is the ability of the wood cells to reflect light, and

this is related to texture. Smooth, fine-textured woods are more lustrous than coursetextured ones.

Then there is odor. Resinous pines and many other woods have a strong natural odor. One such is camphorwood, which is used to line the interior of closets; another is cigar-box cedar, which is used to make humidifiers.

CONVERSION

Before wood can be used, it has to be transformed from its raw lumber form into "dimensioned" form. This process is known as conversion. It is a process that usually comprises cutting, grading, seasoning, and preserving.

Lumber is usually cut to maximize the yield of planks. The way it is cut will not only determine how much usable wood you can get from a log, but also how the resultant wood will release and absorb moisture, and therefore how it shrinks and expands as it does so.

Flat-sawn wood is less economical. It produces the widest but least stable boards. Radial sawing will be less economical but produce greater dimensional stability.

Lumber is graded according to the use it will be put to. In the case of furniture, appearance will take precedence, while strength will be more highly prized in, say, constructional use.

Wood is hygroscopic. That is to say it picks up moisture, and will experience internal "movement" as it dries. Seasoning, therefore, is important if that phenomenon is to be minimized.

Air drying is the traditional method of reducing moisture content. This is done by maximizing the drying effect of the wind while minimizing the effects of the windblown rain and fog. This system is used with varying degrees of success depending on the climate. In some wetter climates it is often used only as a predrying process prior to treating with preservatives and kilning.

Kiln drying, especially in bulk, is usually the preserve of professional dryers. Lumber is stacked, often with smaller pieces of softwood placed between the planks, to give support and allow air to flow evenly. Kilns are sealed and the temperature and humidity are monitored, as well as the duration of kilning. Too fast a drying process can be as disastrous as one that's too slow.

Preservation extends the life of wood, providing a protective "shell". Some woods have a natural resistance to insect attack and decay. These naturally durable woods

can last for a few years to several centuries, depending on the degree of exposure. There are three main types of preservative. Tar oils are mainly applied on outbuildings. Water-borne preservatives are applied by vacuum/pressure impregnation. Then there are organic solvent-borne preservatives again applied by vacuum/pressure or by dip. Brushing provides only minimal protection.

Useful vocabulary

Conifers= κωνοφόρα Fauna= ζωικό βασίλειο Flora= φυτικό βασίλειο Softwood= μαλακό ξύλο Hardwood= σκληρό ξύλο Lumber= χοντρή ξυλεία Fruit-bearing= καρποφόρος Growth-ring= αυξητικός δακτύλιος Grain= νερά ξύλου Sap= $\kappa \alpha \mu \beta i o$ Earlywood= πρώιμο ξύλο Cell=κύτταρο Cavity= κοιλότητα Cross section = εφαπτομένη τομή Intersection = ακτινωτή τομή Crossgrain= τεμνώμενα νερά Camphorwood= καμφορά Luster= $\lambda \dot{\alpha} \mu \psi \eta$ Conversion= μετατροπή Seasoning= κλιματισμός Air drying=φυσική ξήρανση Kiln drying=ξήρανση σε κλίβανο Weathering= ξήρανση σε αέρα Dip= βουτώ, εμβαπτίζω Layer= στρώση Radial= ακτινωτός

Comprehension questions

Why is wood important to our world? What is the growth ring? What are its zones? Name different types of grain. What kinds of texture of wood are there? What do we call conversion? Why is the way we cut wood important? What kinds of cutting wood are there? What do we call air drying and what kiln drying? What kinds of preservatives of wood are there and why is preservation important in wood processing?



Grammar in use

Simple Present

Χρησιμοποιείται για να περιγράψουμε:

-επαναλαμβανόμενες πράξεις e.g. I ride my bike to school every day.

-συνήθειες e.g. I get up early every Sunday.

-μόνιμες καταστάσεις e.g. I live in Athens.

- γενικές αλήθειες e.g. The sun rises in the east.

Για να σχηματίσουμε άρνηση χρησιμοποιούμε το do not/don't + κύριο ρήμα (I, we,

you, they) και το does not/doesn't + κύριο ρήμα (χωρίς –s για το he, she ,it).

e.g. We don't drive to school every week.

She doesn't go to the cinema on Mondays.

Για να σχηματίσουμε ερώτηση χρησιμοποιούμε το do+ υποκείμενο + κύριο ρήμα (Ι, we you, they) και το does+ υποκείμενο+ κύριο ρήμα (χωρίς –s για το he, she, it).

e.g. Do you send e-mails?

Does he write letters?

Κανόνες ορθογραφίας για γ' ενικό πρόσωπο.

- Προσθέτουμε –s στο κύριο ρήμα. e.g. He swims as a fish.

- Προσθέτουμε – es όταν το ρήμα τελειώνει σε –ss, -ch, -sh, -x, -o. e.g. She goes to school at eight o'clock.

- όταν το ρήμα τελειώνει σε σύμφωνο+ y αφαιρούμε το –y και βάζουμε –ies.
 e.g.She studies English.

Χρονικές εκφράσεις στο Simple Present.

-Μπαίνουν στην αρχή η στο τέλος της πρότασης. Μερικές είναι οι εξής: every day/ every week/ every month , in the morning/ in the afternoon/ in winter / in summer , on Mondays/ on Sunday morning, once a month e.t.c. e.g. I go to work by bus every morning.

-Τα επιρρήματα συχνότητας (always, usually, often, sometimes, seldom, rarely, never) μπαίνουν πριν το κύριο ρήμα και μετά το βοηθητικό. e.g. I never go to school on time.

She is always late for school.

Find examples of Simple Present in the text and then make your own examples. about your habits.

Ch.1 EXERCISES

Ex. 1.Fill in the gaps by putting the verbs in Simple Present.

- 1. Mary ...tries.. (try) to come up with new ideas.
- 2. Shedoes.. not.. go.. (not/ go) to see her parents very often.
- 3. Wedo...not.... watch...(not/watch) films every week.
- 4. DoesJane...visit....(visit) her friends on Mondays?
- 5. They always...come....(come) to school on time.
- 6. She.....does not...have (not/have) many good friends over here.
- 7. Do...you..normally...drive..(drive) your dad's car?
- 8. Johnis not...(be) the boy who always ...does..(do) his homework on his own.
- 9. Books .. are.. not.. (be/not) the best present for him.

Ex.2. Join the two columns and make correct sentences.

- 1. They always do a. arrives at school late.
- 2. She never b. borrow money from his dad?
- 3. Jim often c. the housework alone.
- 4. We do not d. to the cinema only on Mondays.
- 5. Does he always e. not like waking up early.
- 6. Tom and Pam have not f. often come to the village.
- 7. My friends normally g. reads books during her holidays.
- 8. She always does h. their homework when they get back from school.
- 9. I go i. got any friends at home.
- 10. He does j. visit me at the weekend.

Answers:a/3,b/5,c/8,d/9,e/10,f/4,g/2,h/1,i/6,j/7.

Ex.3.Fill in the gaps with one of the following words (grain, sap, cavity, air drying, layers, dip, flora).

- 1. The way we work on a piece of wood depends on its.....(grain)
- 2. The process which helps wood dry is called......(air drying).
- 3. You can paint the chair if you.....(dip) it in thick pigment.
- 4. The (flora) of a country depends mostly on its climate.
- 5. You have to fill in the.....(cavity) of the tree with a bit of soil.
- 6. The dry grass comes in.....(layers) of five square meters.

Ex.4. Fill in the gaps using the verbs given in Simple Present.

- 1. We never.....(drive) on the left side of the road here.
- 2.(he/play) any musical instrument?
- 3. She.....(not/often/come) to work late.
- 4. They.....(not/work) here at night.
- 5.(they/allow) you to go out alone at night?

6. Jim.....(go) to the office every day at ten o'clock.

- 7.(you/mind) coming with us tonight?
- 8. She.....(own) ten houses these days.
- 9. My parents.....(prefer) holidays by the sea to holidays in the mountains.
- 10. Jane.....(study) English because she likes foreign languages.

Ex.5. Fill in the gaps by using the verbs that make correct sentences (does not sleep, drive, cut, let, avoid, makes, brush, likes, do not look, puts on, comes back).

- 1. He.....a lot in the summer because of the heat.
- 2. First he.....his clothes and then he goes out when he feels like it.
- 3. He does not.....her go out on Saturdays.
- 4. They their teeth before they go to bed.
- 5. We..... for trouble when things seem to be fine.
- 6. Wethe logs before we put them in the kiln.

Ex.6. Fill the gaps by using one of the given words (cells, lumber, luster, conversion, weathering, growth-rings, conifers, fruit-bearing, fauna).

- 1. The.....of a place is rich when there is a variety of animals living there.
- 2.trees are rare here, so fruit is quite expensive.
- 3. is a necessary process before wood goes through manufacturing.
- 4. Blood..... multiply in great speed.
- 5. Fine-textured wood is distinctive because of its.....
- 6. is the process which turns wood into something else.
- 7. We estimate the approximate age of a tree by looking at its.....
- 8. are some of the oldest trees on Earth.
- 9. First we take the..... and we turn it into planks.

CHAPTER 2 WOOD AND TECHNOLOGY

PLYWOOD

Plywood is made from very thin sheets of timber peeled from the logs in a continuous roll (much like shavings in a pencil sharpener) or sliced very thinly from the log in a vertical chopping manner. It is then cut into sheets and glued in layers, with the grain laid in alternate directions. Having the grain layered in this manner gives uniform strength across the board. This method of construction makes plywood stronger and less likely to warp and split than natural timbers. However, that is not to say plywood does not warp. It is known as a stable material, but as the tensions in each veneer are not the same it can warp, as it also will do when affected by heat and water damage. Plywood is usually made with an odd number of sheets, the minimum being three; the greater the number of plies, the stronger the board. This method of construction gives plywood better mechanical properties, more so than other manufactured boards. Plywood has advantages over natural timbers in that it is relatively cheap by comparison, and comes in broad sheets and a range of thickness. By using a waterproof glue, some plywood is made suitable for exterior use and boat building. A range of decorative veneers can be glued to the surface to save on rare or expensive timbers or plastic coatings can be applied to give a waterresistant surface. Plywood also has a greater flexibility than natural timber and thus can be formed into curves. Individual pieces of veneer can be glued and allowed to dry while tightly clamped in formers. Items and shapes made in this manner are known as laminated forms.

PARTICLEBOARD

Particleboard, also called chipboard, has been manufactured since 1948. Most people will come into with this material, as it is widely used in many areas such as in kitchen cabinet construction. Particleboard is available in sizes from 3600 x 1800 mm to 1800 x 900 mm, and a variety of thickness from 3.2 to 43 mm.

THE RAW MATERIAL

The availability of a raw material is a vital factor in the selection of a material for a particular product. The raw material used in particleboard is usually radiata pine plantation thinnings; offcuts and faulty wood considered too poor in quality to mill.

Hardwood is sometimes included.

MANUFACTURE

Particleboard is made by bonding together small flakes of wood with a synthetic adhesive, under heat and hydraulic pressure. The structure of this material is changed so that there is no general grain direction, unlike a natural timber. The tension and stresses that occur in solid timber due to changes in temperature and moisture content are eliminated. Solid timber tends to warp, twist, shrink and expand, whereas particleboard is relatively stable. Like other wood products, it is affected by excess moisture which causes it to swell in thickness. Moisture-resistant particleboards have been developed and are suitable for flooring in wet areas such as bathrooms and kitchens. The manufacture of particleboard is a continuous and largely automated process carried out under closely controlled conditions. The manufacturing processes can be altered to suit the type of board required for a particular situation, by changing the size of the particles and the type of resin. There are a number of different types of particleboard available. The intended use of the particleboard will help determine which type is best. Having some knowledge of the different types may help in your selection.

THREE-LAYERED PARTICLEBOARD

Three-layered particleboard is made up of layers of different sizes. Fine particles are placed on the outside while the central core is made up of larger flakes. The two outside layers contain more glue and moisture than the inside layer. This creates a board that is denser with a smooth surface.

The manner in which this type of particleboard is constructed increases its bending strength and stiffness properties. After this material has been processed it can be finished with adhesive veneer, melamine, plastic laminate, and most other finishes, including paint products.

DECORATIVE CHIPBOARDS

Decorative chipboards have a layer of wood veneer, plastic laminate or thin melamine foil. The wood - veneered boards are finished by lightly sanding, whereas the plastic laminate and melamine need no further surface finishing as such. However, when used in most construction jobs an edge trim will usually need to be fixed.

Useful vocabulary

Plywood= κόντρα πλακέ, αντικολλητό Sheet= φύλλο Timber= ξύλο Glue= κόλλα, κολλώ Warp= σκεβρώνω Split= σχισμή, σχίζομαι Board= σανίδα Veneer= καπλαμάς Particleboard= μοριοσανίδα Raw material= πρώτη ύλη

Clamp= σφιγγτήρας, πιάνω με σφιγγτήρα Former= καλούπι, σχηματοποιητής Laminated wood= καπλανισμένο ξύλο Chipboard= μοριοσανίδα Pine= πεύκο Adhesive= κόλλα Manufacture= κατασκευάζω μέσω βιομηχανίας Stiffness= σκληρότητα, ακαμψία Mill= αλέθω Thinnings= πριονίδια

Comprehension questions

What is plywood and how is it made? Why do we prefer plywood to natural timbers? How is particleboard made and what are its advantages over solid timber? In what areas do we normally use particleboard and why? What kinds of particleboard have we got? How are they made? Which properties has the three-layered particleboard got?



Grammar in Use

Adjectives-Adverbs

Τα επίθετα(adjectives) μπαίνουν πριν από ουσιαστικά και τα χαρακτηρίζουν. Είναι τα ίδια σε όλα τα γένη και στους δύο αριθμούς. e.g. He is a good person.

Τα τροπικά επιρρήματα (adjectives of manner) απαντούν στην ερώτηση <u>how?</u> και σχηματίζονται αν προσθέσουμε τη κατάληξη -ly στο επίθετο. e.g. strange, strangely.

e.g. He behaves strangely.

<u>Εξαιρούνται</u> τα επίθετα good =καλός good=καλά (επίρρημα)
fast =γρήγορος fast =γρήγορα (επίρρημα)
hard=σκληρός hard=σκληρά (επίρρημα)

Note: όταν πριν από τη κατάληξη – y του επιθέτου υπάρχει σύμφωνο τότε τρέπεται σε –i και μετά προσθέτω –ly. e.g. happy, happily

Ενώ όταν το επίθετο λήγει σε -e, τότε μερικές φορές το -e αποβάλλεται και προσθέτουμε -ly.e.g. simple, simply

Αλλά: brave, bravely

Note: Μετά από τα ρήματα: look, smell, taste, feel, sound χρησιμοποιούμε επίθετο και όχι επίρρημα. e.g. She feels great.

Όταν υπάρχουν τροπικά επιρρήματα, χρονικές και τοπικές εκφράσεις τότε η σειρά τους στη πρόταση είναι τροπικά επιρρήματα, τοπικές εκφράσεις και τέλος χρονικές. e.g. She plays quietly in the park every afternoon.

Όταν υπάρχουν ρήματα κίνησης στη πρόταση τότε η σειρά είναι τοπικές εκφράσεις, τροπικά επιρρήματα και χρονικές εκφράσεις.e.g. She went home very quickly yesterday.

Όταν υπάρχουν πολλές χρονικές εκφράσεις τότε προηγείται το μικρότερο από το μεγαλύτερο. e.g. They came back to Athens at ten o'clock yesterday.

Find adjectives and adverbs in the text and spot their position in the sentence they are found.

Ch.2.EXERCISES

Ex.1.Find the adverbs from the following adjectives and fill in the gaps (quick, strange, quiet, fast, good, main, careful, tidy, loud, proper).

- 1. He looked at me......(quickly) and then he moved away.
- 2. She can drive more....(carefully) if she wants to.
- 3. They don't always speak.....(loudly), although they can.
- 4. She had to speak......(properly), if she wanted to be understood.
- 5. Joe looked at me.....(strangely) before going.
- 6. You have to drive(fast), if you want to get there before them.
- 7. You are expected to talk(quietly) in front of the President.
- 8. She can only cook.....(well). That's all I know.
- 9. This is(mainly) the only way we can take.
- 10. Put your things away.....(tidily) before you go.

Ex.2.Fill in the gaps with one of the adjectives coming from the following adverbs.(happily, badly, hard, bravely, quietly)

- 1. He says he is a very.....(happy) man, indeed.
- 2. We have to be.....(quiet) or else the baby will wake up.
- 3. She is a(brave) woman because she saved me from drowning.
- 4. You don't have to be(bad) to be disliked.
- 5. You have to be a(hard) person to survive these days.

Ex.3. Find derivatives from the following words and fill in the gaps (fault, synthesis, selective, flexible, decoration, adhesion, nature, suit).

- 1. You can find a great(selection) of books in this shop.
- 2. It is only......(natural) to like having a good time.
- 3. There are some new......(decorative) elements around the house.
- 4. You can use some......(adhesive) when you want to glue these two pieces together.
- 5. I think the machine you bought is.....(faulty).
- 6. I have to find(suitable) shoes to wear.
- 7. You can show some.....(flexibility) with people who are nice.
- 8. We can use some.....(synthetic) resin to glue the two joints.

Ex.4. Fill in the gaps with adverbs coming from the following adjectives (repeated, steady, alternative, polite, free, surprising, late, recent, decisive, high).

- 1. You have to talk, if you want them to be nice with you, too.
- 2. I haven'tseen them in town.
- 3. He has to act....., if he wants to move forward.
- 4. Jim is paid at his latest job.
- 5. You can't always come home....., if you want them to trust you.
- 6. She is a nice person, I think.
- 7. You can come round for a cup of tea.
- 8. He said her name....., until he wasn't heard anymore.
- 9. You may move..... in the room. There is enough space.
- 10. They moved..... towards the shore, until it got dark.

Ex.5. Fill in the gaps with the derivatives of the words in brackets.

- 1. You can see a great(various) of rare species on the island.
- 2. There is still enough(moist) on the piece of wood. It hasn't dried yet.
- 3. You can see there is(excess) wealth in the palace.
- 4. You can ask for good.....(qualitative), as long as you pay money.
- 5. The insult against them was definitely not.....(intension).
- 6. The(strong) of the bed is guaranteed.
- 7. If you find wood with great(stiff), then you have to find the right tools, too.
- 8. The wood is.....(manufacture) in a big factory and sold abroad.
- 9. If the wood goes through the mill, there will be some......(thin) left aside.
- 10. The(construct) of furniture demands great labour.
- 11. If you.....(requirement) better results, work harder.
- 12.(know) is not gained easily.
- 13. The.....(continuity) renewal of the components of the machine, keeps it in good condition.
- 14. The three-.....(layer) particleboard is broadly used nowadays.
- 15. When wood flakes go under hydraulic(press), they turn into particleboard..
- 16. The new (produce) of the company have already been promoted.

CHAPTER 3

WOOD AND TECHNOLOGY

FIBREBOARDS

Fibreboards are wood-based panels or sheets manufactured from wood fibres and bonded together with a synthetic resin adhesive. Boards of different densities are produced for different purposes.

HARDBOARDS

Hardboard is a high-density fibreboard produced from wet fibres. Hardboards produced in Australia are made from eucalypts. The raw material comes from sawmill offcuts, forest thinnings or wood considered too faulty to mill. The raw materials used in hardboard are converted into chips, which are then heated with steam and ground up. The resulting fibres are suspended in water and fed onto a wire mesh belt. The water is removed by suction, and the material is cut into lengths and placed into a hot press. The natural resins in the fibres complete the bonding process. Hardboards made from eucalypts do not have glues added, making this material cheaper than other manufactured boards. Hardboards are commonly used for a range of purposes. Their high density and surface finish are important factors to be considered, along with their hardness.

MEDIUM BOARDS

This board is made in a similar manner to hardboard. Medium boards are produced in two grades: low density (LM) and high density (HM). Low-density board is available in 6 to 12 mm thicknesses and is commonly used for pinboards or wall panelling. High-density board is stronger than low - density board and is used mainly for interior panelling.

MEDIUM -DENSITY FIBREBOARD

Customwood is an example of a medium - density fibreboard (MDF). It is made from raw materials selected from a range of pine species. Like hardboard, custom board uses timber from low-grade logs. The boards are made from dried wood fibres, which are bonded under heat and high pressure using urea formaldehyde resin (a type of glue). This glue gives the material its high strength. MDF has mechanical and physical properties approaching levels found in solid wood. Because of this it is widely used as a substitute for solid wood. The sheets are light brown and come in a range of standard sizes and thickness. Customwood is used extensively in the furniture, joinery and construction industries. It has advantages over natural timber in that it is uniform in structure, dense, and free of knots and grain pattern. It lends itself to intricate and precise machining and finishing techniques. Although this material is not solid timber, many of the same finishing processes can be used. If, for example, you have used the electric router in making a trench or to profile an edge you will notice that the edge is quite smooth and did not chip away.

SAFETY PROCEDURES

Always follow basic safety precautions, such as not working towards yourself, keeping your hands behind your work, keeping your work area tidy, and working on a flat surface. Always read the instructions for a power tool before use. Do not wear loose clothing. Secure - your work firmly before commencing work, ensure cords are clear of the working area, and wear protective equipment for eyes, ears and face. When working in a dusty environment, make sure you wear a dust mask and operate dust extractors. Safety even extends to how you behave and move about in the workshop. There are recommended ways in which to carry and lift your timber, so always follow these procedures to avoid injuries.

Practice is the key to success in using most tools. It helps you to discover the potential of the tool, learn the various functions it performs, and improve your expertise. You will gain greater success if, when learning how to use a tool, you compliment this with learning about the structure of timber. This will allow you to learn how to work the grain and overcome problems such as knots, reverse grain and fiddleback.

TOOLS

Tools can be divided into categories according to their function, so that each category includes a range of tools that perform a particular task.

Measuring and Marking out

Compass, level, marking gauge, sliding bevel, steel rule, straight edge, tape measure, try square.

Hitting implements

Claw hammer, wooden mallet

Related tools

Nail punch, round-nosed pliers

Shaving tools

Chisel, gouge, plane, router plane, spokeshave

Saws

Panel saw, tenon saw, coping saw

Drills

Brace, drill bit, hand drill, screwdriver

Power tools

Biscuit jointer, circular saw, power drill, jig saw, power sander, router

Woodworking machines

Bandsaw, circular saw, drill press, finishing sander, drill press, lathe, planer, radial arm saw

Joining materials

Glues

Polyvinyl acetate (PVA), urea formaldehyde glue, hot-melt glues

Nails

Flat-head nail, bullet head nail

Screws

Slotted screw, Phillips-head screw

Dowel

Useful vocabulary

Fibreboard= ινοσανίδα	Hardboard= σανίδα υψηλής πυκνότητας
Density= πυκνότητα	Grind up= αλέθω
Mesh= πλέγμα	Pliers= τανάλια
Chisel= σμίλη	Resin=ρητίνη
Edge trim= σόκορο	Custom board= σανίδα στήριξης
Knot= ρόζος	Mill= σπαστήρας
Router= φρέζα	Trench= αυλακιά, γκινισιά
Profile= προφίλ	Dust extractors= εξαγωγείς σκόνης
Level= αλφάδι	Marking gauge= σημαδούρα
Sliding bevel= αρθρωτή γωνιά Steel rule= ατσάλινος χάρακας	
Wooden mallet= ματσόλα	α Gauge= μέτρο
Mortise= υποδοχή ξύλοι	υ Tenon= τόρμος, δόντι ξύλου

Blade= λεπίδα	Bevel= κεκλημένη ένωση
Lever= μοχλός	Nail punch= ζουμπάς
Round-nosed pliers=τανάλια Plane= πλάνη	
Router planer= γκινόσο	Spokeshave= ξύστρα
Coping saw= σέγα	Gouge= σκαρπέλο
Groove= κάνω αυλακιά	Biscuit joiner= λαμέλο
Brace= πρέσα	Circular saw= δισκοπρίονο
Dowel= καβίλια	Lathe= τόρνος
Jig saw= ηλεκτρική σέγα	Power sander= ηλεκ. τριβείο
Band saw= ταινιοπρίονο	Drill press= τρυπάνι
Biscuit= μπισκότο	Radial arm saw= δισκοπρίονο εγκάρσιας τομής

Comprehension questions

-What do we call fibreboards? How are they made? What kinds of fibreboard are there?

-How are hardboards made and what are their main properties?

-Where are medium boards used?

-How is MDF made and what are its properties and why is it preferred to solid timber?

- What are the most important safety regulations you should follow in your working area?



A range of hand tools



Grammar in Use

Passive voice (παθητική φωνή)-Simple present

Χρησιμοποιούμε παθητική φωνή όταν το πρόσωπο που εκτελεί τη πράξη είναι άγνωστο, ασήμαντο η ευνόητο. e.g. English is spoken all over the world The car is made in Japan.

Σχηματίζουμε τη παθητική φωνή χρησιμοποιώντας το ρήμα του be+ τη παθητική μετοχή του ρήματος . e.g. Olives are grown in Greece.

-Simple Present: am/is/are+ παθητική μετοχή του ρήματος

Για να τρέψουμε την ενεργητική πρόταση σε παθητική κάνουμε τα εξής:

-Το αντικείμενο της ενεργητικής γίνεται υποκείμενο της παθητικής.

-Βάζουμε το ρήμα to be στο χρόνο που είχε το κύριο ρήμα στην ενεργητική πρόταση, και το κύριο ρήμα στην παθητική μετοχή.

-Το υποκείμενο της ενεργητικής μπαίνει μετά την πρόθεση by και είναι το ποιητικό αίτιο της παθητικής φωνής.

e.g. Jim writes a letter every week.

A letter is written by Jim every week.

Το ποιητικό αίτιο παραλείπεται όταν δε ξέρουμε ποιος κάνει τη πράξη.(they, someone).

Find examples of the passive voice in the text above and turn them into active voice.

Ch.3. EXERCISES

Ex.1. Fill in the gaps by using the correct word (density, grind up, trench, mortise, plane, dowel, mill, dust extractors, drill, knot).

1. You can join two pieces of wood by using the joint of a tenon and a.....(mortise).

2. You have to.....(drill) a hole in order to put a screw in.

3. The wood we bought is full of(knots) and it should not be very expensive.

4. The.....(dowel) is a hidden bit of wood which joins two edges together.

5. The workshop can stay clean of dust if we use the(dust extractors).

6. If you put a piece of wood in a(mill), it turns into wood thinnings.

7. You can(grind up) this side of wood, if you want to make it smooth.

8. If you use a chisel, you can make the(trench) slightly deeper.

9. The(density) of the grain affects the appearance of the wood.

10.The.....(plane) is a tool used to make uneven surfaces of wood even.

Ex.2. Put the verbs in brackets in the correct form in Simple Present.

1. Children are...taught....(teach) French at school.

2. The book...is not written.....(not/write) in all languages of the world.

3. The main speech...is given...(give) by the prime minister.

4 Is the letter sent......(the letter/send) to each candidate free of charge?

5. The reason why he is leaving ... is explained......(explain) in his letter.

6. Is rubbish emptied.....(rubbish/empty) in the river by the citizens?

7. Forests...are burnt...(burn) by insane people.

8. Money.....is not....easily...earned..(earn) nowadays.

9. Furniture.....is....imported...(import) from Japan.

10. English.....is spoken...(speak) all over the world.

Ex.3. Turn the following sentences from active voice into passive.

1. They renovate the rooms every year.

The rooms are renovated every year.

2. They open a few new shops in town.

A few new shops are opened in town.

Ex.4. Fill in the gaps using one of the following words (radial arm saw, mallet, level, fibrefoard, finishing sander, screwdriver, marking gauge, nail, try square, hardboard). 1. is one of the hitting implements we use when making furniture. 2. We normally use a when we want to pull something heavy. 3. is made if we bond fibres together with resin. 4. You can use a before applying the stain on the furniture. 5..... is normally used for interior paneling. 6.You can put aon the wall if you want to hang a picture. 7. Give me ato put the missing screw back in. 8. Use the to let them know what is the exact size of the pieces the planks will be cut into. 9. You can make sure the two pieces are parallel by using a..... 10. You cut the planks into smaller pieces by using a **Ex.5.** Turn the sentences from active into passive voice. 1. They often buy new furniture and throw away their old one. 2. My brother often renovates his house. 3. The company employs new people every month. 4. The computer company makes new offers once a month. 5. The man you met annoys most of his neighbors. 6. She drives her dad's car because she is allowed to do so. 7. First of all you screw the lid on. 8. They write books and they are already famous. 9. They carry the wood into the workshop before starting working.

CHAPTER 4

MAKING PROCEDURE – PREPARATION OF TIMBER

MAKING PROCEDURE

It greatly simplifies the complexity of woodworking if an overall plan or strategy can be developed. Most woodworking articles follow a 'skeleton' procedure for making. There are some exceptions, overlaps and interchangeability, but it is generally possible to break the procedure down into seven basic stages.

1 Preparation of timber. Accurately prepare all components to the required size prior to making. (Also known as 'squaring'.)

2 Marking out. Using a pencil or biro, steel rule, try square, etc., map out the intended form or shape of the object and any joint-cutting details or features.

3 Cutting/shaping. Using chisels, saws, planes, etc., carefully cut the joints and shape the other features of the work.

4 Assembly. Put together the components, whether they be a frame or carcase, to check that they fit (sometimes in part after gluing).

5 Gluing up. Apply glue, assemble the components, and clamp them under pressure. 6 Cleaning up. Plane or scrape a few fine shavings off the external surfaces of the work and then use grades of abrasive paper on a handblock or a finishing sander (internal surfaces are cleaned up prior to gluing).

7 Finishing. Apply oil, lacquer, stain etc., to protect the completed object and enhance the texture and colour of the surfaces. Sometimes internal members are cleaned and finished before gluing.

PREPARATION OF TIMBER

Sometimes referred to as 'squaring timber', the preparation of timber is an essential prerequisite to all making operations.

When you purchase timber, it is either rough sawn, and therefore irregular, or it is planed (in case of softwoods) and the chances are it will have cupped or twisted slightly and needs redressing accurately. You cannot expect to make accurate work involving precise marking out and cutting operations unless the material is accurate to start with.

Making timber accurate in dimension can be achieved by hand or machine methods and it is advantageous to understand, and indeed practise, the traditional hand method, even if the machine method is achieved in a fraction of the time and with greater ease. Of course, there are occasions when the hand method is best, such as when the wood is very small, or when the grain is particularly difficult to work - although some instances of interlocking grain can be more successfully dressed by very fine and razor-sharp machine planing. Certainly, the control and accuracy offered by the modern planer-thicknesser can be as great, if not better than hand methods and will be the preferred method in most cases.

For timber to be prepared accurately (that is, ready for marking out and cutting operations) it has to fulfil certain requirements. A piece of timber has six surfaces: two sides, two edges and two ends. All surfaces should be flat, all adjacent surfaces should be 900 and all opposite surfaces should be parallel.

SQUARING BY MACHINE METHODS

The plane-thicknesser is an extremely useful modern machine and is essential for quick repetitive 'squaring' operations. Not only will it accurately dimension large work, but very small sections as well. When using this machine, there are two operations: 'surfacing" and 'thicknessing to width'. A bandsaw, or a circular saw or a radial arm saw can be used to cut the wood slightly oversize before machine planing and the radial arm saw is an ideal tool for squaring off the ends.

The knack of accurate preparation of timber relies on supporting the timber in the most appropriate way, mounting the wood low and firmly in the vice. The plane has to be kept razor sharp (re-sharpened before and during the process if needed) and set exactly right. That usually means taking a finer cut, even if it is slower. Checking for flatness with a steel rule is done up against the light. So too is checking for squareness with the try square at random intervals along the length. Repeated checking is essential. Gauging has to be done slowly, and you can either hold the wood freehand or prop it against a slightly open vice.

Shading waste is imperative, as the diagonal lines actually show up the marked line better than the line itself. When removing large amounts of wood it may be better to saw off the bulk and then finish with a plane. The guide to knowing when you have finally arrived at the line is to flick the fibres where the line has been gauged. When sawing, it pays to choose a sharp, medium-toothed tenon saw. The wood has to be held firmly in the bench hook or in the vice. When squaring off the ends it is not usually necessary to smooth them flat, as subsequent jointing of ends is common. When several identical pieces need to be prepared to size, such as table legs, it actually makes more sense to copy the marked lengths from one member, rather than to re-measure each time.

Useful vocabulary

Complexity= πολυπλοκότητα

- Procedure= διαδικασία
- Component= συστατικό μέρος
- Marking out= μαρκάρισμα
- Joint= ένωση ξύλου
- Carcase= σκελετός
- Glue=κόλα
- Abrasive= τραχύς
- Finishing= $\varphi_i v(\rho_i \sigma_\mu \alpha)$
- Lacquer= λάκα
- Stain= βαφή
- Texture= υφή
- Surface= επιφάνεια
- Twist= στρίβω
- Thicknesser= ξεχονδριάστρα
- Edge= άκρη
- Flat= επίπεδο
- Vice= μέγγενη
- Try square= γωνιά



Requirements of prepared timber

Comprehension questions

-Which are the basic steps you should follow when making something with wood?

-What is preparation of wood also called?

-What should one do before trying to make any accurate work with wood?

-In which cases do we prefer working by hand and when with a machine when making something?

-What does actually " the timber is prepared accurately " mean?

-Why do we see a plane-thicknesser as a very useful machine?

-Apart from checking for flatness what else is essential when preparing timber?

-What do we actually do when we need to prepare several identical pieces to size?

Grammar in use

<u>Gerund</u>

Το γερούνδιο είναι ρηματικός τύπος που σχηματίζεται προσθέτοντας στο ρήμα τη κατάληξη –ing. (όταν προσθέτουμε –ing ακολουθούμε τους κανόνες ορθογραφίας του Present Continuous). e.g. run, running

-Μπορούμε να χρησιμοποιούμε γερούνδιο ως:

-υποκείμενο πρότασης e.g. Swimming is good for you.

-μετά από προθέσεις e.g. I am good at speaking English.

-μετά από τα εξής ρήματα η εκφράσεις:

begin, enjoy, find, finish, start, hate, like, love, remember, stop

can't help, can't stand, feel like, spend time e.g. She hates being alone at home.

To γερούνδιο μετά το ρήμα go εκφράζει δραστηριότητες η χόμπι. e.g. We often go sailing at the weekends.

The infinitive (το απαρέμφατο)

<u>Full infinitive</u> (to go) μπαίνει μετά από τα εξής ρήματα: want, would like, agree, ask, help, hope, tell, would prefer, manage, offer, allow, invite, threaten. e.g. He would like to stay at home tonight.

Επίσης μπαίνει μετά από ερωτηματικές λέξεις. e.g. He didn't know what to say.

Kαι έπειτα από το too και enough. e.g. She is too young to go to the party alone. He was not old enough to understand.

<u>Bare infinitive</u> (go) μπαίνει μετά από modal verbs(can, could, may, might, should, will, must) e.g. She should be more quite in class.

Μετά από τα ρήματα: feel, hear, see, watch. e.g. I can see him drive his car.

Μετά από τα ρήματα:make, let. e.g. You cannot make me eat it all!

Find the gerunds and the infinitives in the text and notice which verbs they follow or in which cases gerunds are the subject in the sentence.

Ch.4 EXERCISES

Ex.1.Find the derivatives of the following words and fill in the gaps(measured, identity, square, repetition, assemble, dimensional, intension, complex, developed).

1. You have to.....(measure).. and find the correct sizes before cutting the wood.

2. You may(repeat)..... the same movement as many times as you want.

3. You can start gluing the components together after their.....(assembly).

- 4. The two chairs are(identical).
- 5. You have to check for...(squareness)... before gluing the components together.

6.If you know the exact size of the piece, it means you know its...(dimensions).

7.We don't know the....(intended).... size of the table.

8. The design of this machine is well-known for its...(complexity).

9.You may(develop).. the drawing further , if you wish to.

Ex..2. Fill in the gaps by either using the gerund or the full or the bare infinitive of the verbs in brackets.

1. They hope....(to move)... into a new town soon.

2. She wants.....(to buy)... a new sofa after April.

3. I hate......(driving)... on the national road.

- 4. She started.....(looking) for another flat around here.
- 5. He would like....(to come).... round for a cup of tea.
- 6.We agreed...(to travel).. by car rather than by plane.
- 7. They cannot...(fulfil).. their promises anymore.
- 8. You must clean the house before...(going).. on holidays.
- 9. I cannot stop dreaming about....(going)... to stay in London.
- 10.Don't let them...(manipulate)... you.
- 11.When will you finish....(working)?
- 12.She enjoys....(spending)... time with her relatives.
- 13. We had to borrow their tools without...(asking).
- 14. How can you make me ... (agree) to help them?
- 15. We decided....(to accompany)... her to the office.
- 16. Jane is trying.....(to compromise) before it is too late.

Ex.3. Try to fill in the gaps by using derivatives from the following words (instant, accurate, flat, sharp, preparation, necessary, interchange, repeat, use, exact).

1. The of a knife depends on the frequency of its use.

2. We can only hope that food is already.....

3. The usefulness of the components depends on their.....

4. noise makes me stressed.

5. This is what I always wanted to have.

- 6.For, you can help me cut the wood.
- 7.She may buy it only if it is something

8..... is important when measuring and before cutting wood.

9.The of the table can be easily reassured.

10.You..... to sand the wood down before polishing it.

Ex. 4. Fill in the gaps using full or bare infinitive or even gerund.

- 1. I like(drive) my brother's car a lot.
- 2. She decided.....(accept) my invitation for the party.
- 3. We hate.....(be) the first ones to arrive here.
- 4. She began.....(cry) after she had seen me.
- 5. We hate.....(leave) without(say) goodbye.
- 6. He agreed.....(come) as long as he could(come) alone.
- 7. She threatened me.....(talk) to my parents, if I didn't accept the invitation.
- 8. I cannot (lift) the box on my own.
- 9. She allowed me.....(use) her computer.
- 10. I can't make them.....(work) any harder.
- 11. We didn't manage.....(talk) to them again.
- 12. She told me..... (save) some money for the holidays.
- 13. We would prefer.....(come) back early tonight.
- 14. He is too young(go) out on his own.
- 15. What is the best way.....(get) there on time?
- 16. We may.....(arrive) there at half past ten.
- 17. He offered.....(help) us finish the project.
- 18. Jane tried.....(avoid) crashing on the tree.
- 19. She kept on..... (talk) to herself for hours.

CHAPTER 5

MARKING OUT

The advent of power tool woodworking has not eliminated the need for marking out. Indeed, it is a good example of where old and new methods need to combine. Accurate marking out is not only a vital prerequisite to the entire making process, but is one of the few techniques that is exclusively a 'hand' skill.

You can plane or saw wood and cut specific joints or other features by hand or with power tools, but accurate marking or setting out has to be done by hand, even if it is merely an indication mark in which the cutter of a power tool can engage; the power tool in turn directs its own path. The only notable exception is where a jig is used to guide the path of the tool, as in the case of template or guide bush routing.

One important point about hand and power tool work is that when using the former the measurements or data are usually related to joint shoulder lines, but with the latter they are taken from the ends of the pieces. This is because machine jointing normally 'jigs' against the ends of the wood, and shoulder lines are not required.

Marking out is usually the first task in woodwork. The ultimate success of your work, no matter how good your making skills, depends entirely on the care and the accuracy of this first stage.

Marking out generally refers to lines drawn on the wood to depict the shape of the object to be made, in both its main dimension and detailed parts (for example, joints). Subsequent cutting or shaping operations, such as sawing, planing, chiselling, and so on, use the marked line as a strict reference point.

Marking out also includes the important identification and coding of component parts, including face marks and a number system. This identification is absolutely essential for efficient and methodical working.

Useful vocabulary

Marking= μαρκάρισμα Power tool= ηλεκτρικό εργαλείο Eliminate= περιορίζω Skill= δεξιότητα Template= φόρμα Routing= φρεζάρισμα Measurement= μέτρηση Sawing= πριόνισμα Planing= πλάνισμα Reference point= σημείο αναφοράς

Comprehension questions

-What is a proof that a combination of old and new methods are necessary on woodworking?
-Which process is a "hand' skill?
-Why is marking out such an important process of woodworking?
-What does a good marking out refer to or include?

Grammar in Use

Simple Present Perfect

Χρησιμοποιούμε Present Perfect Simple για να περιγράψουμε :

-μια πράξη που έγινε στο παρελθόν και έχει σχέση με το παρόν.e.g. She has injured her leg.

-μια πράξη που άρχισε στο παρελθόν και συνεχίζεται στο παρόν (συχνά με το for, since). e.g. She has been in this office for a year.

O Present Perfect Simple $\sigma_{\chi\eta\mu\alpha\tau}$ ($\zeta_{\epsilon\tau\alpha}$ $\mu_{\epsilon\tau}$ τ_{0} $\rho_{\eta\mu\alpha}$ have/has+ $\pi\alpha\theta_{\eta\tau}$ (κ_{1} κ_{1} κ_{2} κ_{1} κ_{2} $\kappa_{$

Για να σχηματίσουμε άρνηση χρησιμοποιούμε haven't/hasn't +παθητική μετοχή.e.g. I haven't had lunch yet.

Για να σχηματίσουμε ερώτηση have/has+υποκείμενο+ παθητική μετοχή e.g. Has the teacher arrived yet?

Time expressions

-For $(\pi \epsilon \rho) \gamma \rho \Delta \phi$ in η $\delta \rho \kappa \epsilon \rho \Delta \phi$ and $\rho \Delta \phi$ in $\rho \Delta \phi$ in $\rho \Delta \phi$ in $\rho \Delta \phi$.

-Since (περιγράφει το χρονικό σημείο στο παρελθόν κατά το οποίο άρχισε μια πράξη) e.g. I haven't seen him since Monday.

-Always ($\pi \dot{\alpha} v \tau \alpha$) e.g. They have always liked holidays by the sea.

-Ever (ποτέ) e.g. Have you ever been to Japan?

-Never $(\pi \sigma \tau \epsilon)$ e.g. They have never been to Athens before.

-Already (ήδη) e.g. She has already phoned me.

-Just (μόλις) e.g. They have just arrived at the airport.

-Yet (ακόμη) e.g. She hasn't come to see us yet.

-How long? (πόσο καιρό) How long have you lived in London?

-<u>Have been to:</u> χρησιμοποιείται όταν θέλουμε να πούμε ότι κάποιος πήγε κάπου και έχει ήδη επιστρέψει.e.g. I have been to Greece before.

-<u>Have gone to:</u> χρησιμοποιείται όταν θέλουμε να πούμε ότι κάποιος πήγε κάπου και δεν έχει επιστρέψει.e.g. Has she gone to the shops?

Present Perfect Simple (Passive Voice)

Σχηματίζουμε Present Perfect Simple σε παθητική φωνή με το ρήμα του be σε Present perfect Simple (have/has been)+παθητική φωνή. e.g. They have built a new castle.(active voice) A new castle has been built. (passive voice) *Find examples of Present Perfect Simple in the text.*



Indication mark for the radial arm saw

CH.5. EXERCISES

Ex.1. Fill in the gaps using one of the following words (measurement, eliminate, skill, specific, shape, power tool, components).

1. Before deciding how you can do the assembly of the furniture you have to know what are the correct(components).

- 2. The(shape) of the chair determines the tool we are going to use.
- 3. If you don't have any(skills), you cannot succeed in life.
- 4. You can only(eliminate) the possibilities of failing by trying harder.
- 5. Fine (measurement) can help you make a nice table.
- 6. You can get there by following(specific) steps.
- 7. They can route the plank by using a(power tool).

Ex. 2. Fill in the gaps using the Simple Present Perfect.

- 1. Luke......(has not arrived) at the station yet. (not/arrive)
- 2. They....(have already read).. his book ten times. (read)
- 3. (Has..she ever been)... to Japan? (be/she)
- 4. They ...(have not seen)... the good side of his character yet. (see)
- 5. Jane .. (has gone).. to the supermarket to buy some milk. (go)
- 6. Mary.....(has recently come) to visit us. (come)
- 7. We .. (have not been) to the islands since last year. (not/be)
- 8. (Have you ever tried) to fly an aeroplane? (try/you)
- 9. We (have not seen).. each other for years. (see/not)

Ex.3. Turn the sentences from active into passive voice.

1. They have recently painted their house.

Their house has recently been painted.

- 2. She has written a new book.
- A new book has been written by her.
- 3. Michael has not paid me since Christmas.

I have not been paid by Michael since Christmas.

- 4. Jim has not ever given his address to me.
- I have not ever been given his address by Jim.

Ex. 4. Fill in the gaps using the words given (sawing, reference, indication, ultimate, shaping operations, identification, template).

1. Parachuting is, I think, the..... experience.

2. A good power tool can help you perform all the.....

3. always comes after some good marking of the wood.

4. Making to a chair already made is necessary if you want to make a copy of it.

5. You have to use a of a chair made in order to make the same one.

6. This was an that something was going wrong.

7.She may be accepted into the camp only , if she uses somedocuments.

Ex. 5. Turn the following sentences from active into passive voice.

1. The children have never tried this food before.

.....

2. Joan has already passed her exams.

.....

3. He has not achieved his goal yet.

.....

4. They have never offered us any presents.

.....

5. Have you ever visited a museum?

.....

Ex.6. Fill in the gaps by using the Present Perfect Simple.

- 1. She.....(not/ give) any sings of life yet.
- 2. We(not/ send) any letters to them for years.
- 3. Jack.....(see/lately) a good film.

4. They.....(visit) the island of Skiathos.

5.....(you/try) to talk to them yet?

6.(she /ever/be) to this restaurant before?

7. My friend.....(try) to contact me three times.
CHAPTER 6

CONSTRUCTION STRATEGIES

Before the advent of "manufactured" board, virtually all woodworking was in the solid, but nowadays 'solid' work tends to refer to chair making, frame and small carcase work (using mostly traditional joints and allowing for versatile shaping and featuring). Veneered work is primarily 'flat panel' work using a manufactured board (chipboard or MDF) as the base material. Indeed, it might be more apt to call it manufactured board construction, as veneer is just one surface reatment. There are other treatments, such as melamine or paint, and stain or lacquer, which can be used on bare plywood, and an epoxy resin coating for raw chipboard.

Manufactured board construction lends itself generally to carcases - storage cabinets and table tops. A table design might combine solid wood and manufactured board construction whereby the legs and rails are solid and the top veneered chipboard for maximum strength and stability.

SOLID WOOD CONSTRUCTION

By its fibrous nature, wood shrinks and expands across the grain predominantly as it takes up or loses moisture. This may be unequal on each side of a board, causing bowing or twisting. There are also internal stresses caused during the growth of the tree and during subsequent seasoning. Solid wood construction has to provide for timber movement. Well-designed solid wood construction should either minimize the problem of movement, or allow for it, whilst maximizing the strength of the material; whereas wood moves predominantly across the grain, it is strongest along the grain. Different species of timber vary enormously in strength and timber movement. Oak is rigid and fairly stable, and so too is ash, which combines rigidity with flexibility. Seasoned beech is tough and stable, whereas elm is brittle and moves a lot. Sometimes the most exotic timbers are the wildest to work, which can contain tiny cracks or shakes in the living tree.

Forming by wastage

In a sense, most woodworking involves forming by wastage or reduction - cutting away from the solid piece, as in rebates, grooves, slots, tapers and so on. Joints and entire structures are the result of reduced pieces being connected and interlocked. Indeed, the craft of woodcarving relies on timber reduction.

Here, we can briefly apply the term to specific applications, such as cutting

mortises by hand, or powered methods for joints, cutting away a single piece of wood to form a box by using a router or milling machine, or forming shapes such as bowls on the woodturning lathe. In each case, the problem of short grain has to be observed.



Basic vocabulary of woodworking cutaway features

Frameworks

Solid wood frames can be made in a variety of ways, ranging from simple mitre or halving joints, to haunch mortise and tenons, depending on the usage. By changing the timber sections, the dimensional strength and visual character also change. Picture frames can be cut on a mitre saw and reinforced with veneer keys, whereas a table frame might be dowelled, and a sturdy framed door will be mortise and tenoned for maximum strength. Of course, the strongest framework configuration is triangulated and generally frameworks gain strength from adjacent members (e.g. box frameworks) and/or panel inserts that offer triangulation.



Range of solid wood frameworks

Panel construction

The traditional frame and panel construction, with its haunched mortise and tenons and grooved loose solid panel has resolved the problems of strength and timber movement for centuries. The early medieval oak panelled chest is still a source of inspiration today and many interiors, notably churches, still use this method of construction, which cannot be faulted technically. Inevitably the solid panel has evolved, and is now largely superseded by flush and more open structures, whereby narrow boards are stack laminated to make up wide panels.



Modern flush panels

Solid Carcases

Any solid carcase is best made by edge jointing narrow board to stabilize the timber when in wide panels. Careful preparation of the material should minimize wastage and the surface can be sanded with a belt or orbital sander. If intermediary fixed panels, such as shelves, are used it is best to align the grain direction with the carcase so it all moves together.

Adjustable 'floating' shelves (for bookcases, etc.) can employ a variety of wood, metal or plastic means of support and adjustment which can be a strong design feature of the piece. The back panel can be thin plywood or MDF grooved or rebated in, using the router; indeed, this tool can cut most of the joints needed in cabinet or carcase construction. The simplicity of contemporary carcase design aims to maximize the figure of the wood, highlighting the end grain, and employing perhaps an interesting joint, such as finger or dovetail joints, on the top corners, where they are seen. Bottom corner joints can be machine rebated, dowelled or biscuited and the shelves can be housed or carcase pinned for maximum strength and visual impact.

Drawers

The traditional drawer, with lap dovetails at the front, common dovetails at the rear and a loose, grooved, solid drawer bottom is still used by many contemporary woodworkers. However, tight drawers in the winter often rattle loose in the summer, which arguably falls short of meeting the requirements of good, functional, contemporary design. There is certainly great appeal in the neatly jointed construction and precision of a traditional drawer especially if the woodworker uses fragrant-smelling timber, such as cedar or Lebanon for the drawer bottom on a chest of drawers. There are various ways of supporting, sliding and locating the drawer, not to mention gripping it, and numerous construction options in solid wood, as it is, in effect, a small carcase. In most antiques the drawers rattle loose. Precision drawer sliding can be achieved by using proprietary metal glides.

Chair frames

There is no other human artefact that has been so over-designed as the chair. How the chair looks is a subjective matter, as designers express personal styles, and nowadays it is true that anything goes. However, the demands of serious chair design are stringent as not only must the chair be comfortable, it must be strong enough to withstand tilting and racking when placed on an uneven floor. Above all, it must look good from all angles, and that is something few chair designers achieve, mainly because the conventional way of designing is at a drawing board in three elevations.

MANUFACTURED BOARD CONSTRUCTION

Woodworkers nowadays are divided over their preference for chipboard or MDF. The latter tends to be heavier and more expensive, and its dark colour can show through some light-coloured veneers such as sycamore, but it is generally considered more stable than chipboard.

Panels and frameworks

The simplest manufactured board construction is a flat panel, which can be painted, lacquered or veneered (with lipped or veneered edges). It is possible to create a 'frame' by simply cutting away the inner material to a marked line using a pilot hole and jigsaw. Alternatively, a router with a straight cutter can be jigged up to cut through and edge trim the inner profile, in which case the radiused corners can be squared with a chisel or abrading stick.

Such a simple method can, naturally, apply to curves or other shapes for a variety of applications, from mirrors to freestanding pieces of furniture. There is no reason why manufactured board cannot be used for certain 'framed' structural applications, provided its tendency to sag is catered for.



Cutaway view of manufactured board construction which relies on sturdy sections

Manufactured Board Carcases

Carcases are boxes, held together by a range of quick and accurate machine joints, from biscuit jointed butt and mitre joints to machined double lap joints. If you consider all carcases as wide frames with back panels grooved or rebated into the rear, the front opening can be faced with a solid wood, frame assembly afterwards or lipped (if veneered) to accommodate recessed or overlapping doors. The doors, can be solid wood or manufactured board construction. Grain direction is relatively unimportant structurally, but not visually, on veneered or plywood carcases.

The component panels of veneered constructions are generally veneered prior to construction and assembly, although in some small carcases, or where there is a curved component, the veneering is done afterwards.

Veneering is a complex art, and relies on experimentation and experience. However, the contemporary woodworker is more likely to be interested in enhancing or complementing the general line of a piece in some subtle detail. A simple, straight-lined, essentially rectangular tabletop can look a million dollars if veneered in matching veneers, and the radiused edges of the tabletop reflected in a contrasting wood inlay with curved corners, cut by the router. This illustrates the marriage of a traditional technique with modern tool technology and is therefore appropriate to the work of today.

Veneering allows the woodworker freedom to play with grain figure, pattern and grain direction, which solid wood construction tends to inhibit, but it is tempting to go overboard with the decorative use of veneer. A basic problem to deal with is the 'untruth' that veneer represents. It looks like solid wood until the end grain direction gives it away. This problem can be either disguised or featured, and points to the importance of design and intention when making a new piece. The use of a burr veneer, for instance, can get over this problem.

Veneer cutting is best done with a marking knife, straight edge, and backing board such as MDF. Cutting across the veneer before it is cut along the grain allows for the risk of splitting at the ends. Modern veneers are bonded with PVA or synthetic resin glues and clamped in presses or vacuum bags, then left to cure for upwards of two hours. Trimming of veneers after they have been glued is done with the marking knife, tilting the board or structure so that pressure is maintained at the cut. As veneer joints are, in effect, butt joints, the final edge can be softened with an abrading block so that the join is not seen.



Work has to be tilted to ensure firm pressure when trimming the veneer

Useful vocabulary

Plywood= ξύλο κόντρα πλακέ	storage cabinets= ντουλάπια αποθήκευσης
Tabletop= Πάνω μέρος τραπεζιού	construction= κατασκευή
Shrink=συρρικνώνομαι	expand=αυξάνομαι σε όγκο
Moisture= υγρασία	seasoning= ξήρανση
Bowing= γύρισμα	twisting= στρήψιμο
Oak= δρύς	elm= φτελιά
Beech=οξιά	rigidity= ακαμψία
Flexibility= ευκαμψία	cracks= ανοίγματα στο ξύλο

Reduction= αφαίρεση (εδώ σε ποσότητα ξύλου slot= άνοιγμα Taper= δίνω σχήμα που λεπταίνει προς τα κάτω groove= αυλακιά Rebate= αφαίρεση ξύλου από την άκρη mortice= μορσότρυπα Tenon= δόντι ξύλου halving joint= ένωση όπου οι άκρες έχουν κοπεί κατά στο μισό Mitre joint= λοξή ένωση ξύλου frame= $\pi\lambda\alpha$ iσιο Triangular= τριγωνικός,τριμερής insert= $\epsilon i \sigma \alpha \gamma \omega$ Solid= συμπαγής sand= περνώ με γυαλόχαρτο Shelf= ράφι dovetail= ψαλιδωτή σύνδεση Drawer= συρτάρι rattle= βροντάω Cedar= κέδρος drawer bottom=κάτω μέρος συρταριού Chest of drawers= συρταριέρα slide= γλυστρώ Grip= πιάνω rear= πίσω μέρος Overlapping= καλύπτοντας εν μέρει assembly= συναρμολογώ Curve= κυρτώνω split=χωρίζω Bond= ενώνω clamped= πιάνω με μέγγενη Trimming= αφαίρεση του περιττού

Comprehension questions

-What other surface treatments are there apart from veneer?

-What are the changes in wood volume and why do they take place? How have we solved this problem?

-What is a joint?

-Which different solid wood frames are there? Which is the strongest framework configuration?

-What minimizes wood wastage when working with wood?

-What is the aim of the simplicity of contemporary carcase design?

-What is a common type of drawer?

-How can we achieve precision in drawer sliding?

-How do we know a chair is properly made?

-How can a frame be made?

-What are carcases?

-What does good veneering depend on and why do we prefer it to solid wood construction? How is veneer cutting best done?

Grammar in use

Modal and semi-modal verbs (can, could, should, may, must, be able to, have to) Ακολουθούνται από το κύριο ρήμα χωρίς το to και παραμένουν τα ίδια σε όλα τα πρόσωπα ενικού και πληθυντικού αριθμού.

Για να σχηματίσουμε άρνηση βάζουμε not μετά από αυτά.

Για να σχηματίσουμε ερώτηση βάζουμε το modal πριν το υποκείμενο.

Σύντομη απάντηση: Yes/no, υποκείμενο +modal verb.

Χρησιμοποιούμε **can** για να εκφράσουμε ικανότητα και για να ζητήσουμε άδεια. e.g.

He can speak ten languages

Can I drive your car for a while?

Χρησιμοποιούμε **could** για να εκφράσουμε ικανότητα στο παρελθόν και για να ζητήσουμε κάτι ευγενικά.e.g. He could ride a bike when he was young.

Could I come along with you to the cinema?

To **be able to** $\chi \rho \eta \sigma \mu \rho \pi \sigma i \epsilon$ avtí tou can $\gamma \mu \alpha \tau i$ $\sigma \chi \eta \mu \alpha \tau i \zeta \epsilon i$ $\rho \mu \alpha \lambda \alpha$ $\delta \lambda \sigma \sigma \sigma$ tous $\chi \rho \delta \nu \sigma \sigma$. I am able to swim very well.

Χρησιμοποιούμε το **should** για να δώσουμε η να ζητήσουμε συμβουλές. e.g. You should eat less if you want to lose weight.

Χρησιμοποιούμε το **may** για να εκφράσουμε μελλοντική πιθανότητα η για να ζητήσουμε άδεια. e.g. It may rain tomorrow.

May I go out for a while?

Χρησιμοποιούμε το **must** για να εκφράσουμε υποχρέωση.e.g. You must pay the bill before you go.

Χρησιμοποιούμε το **have to** που εκφράζει κι αυτό υποχρέωση γιατί σχηματίζει ομαλά όλους τους χρόνους. e.g. He had to go earlier that night.

Find examples of modal verbs in the text and find out what they express.

Ch.6. EXERCISES

Ex.1. Fill in the gaps by using one of the following words (combine, biscuited, pinned, options, functional, interlocked, curved corners, tendency).

- 1. The joints of the bottom corners have to be ...(biscuited).
- 2. There is a...(tendency) to consume as much as you can nowadays.
- 3. You can ...(combine) many new methods to solve the problem.
- 4. The machine has primarily a lot of (functional) problems.
- 5. The grain of the wood can be .. (interlocked) or can be parallel.
- 6. One of the ... (options) is to go on holidays abroad.
- 7. The table he bought was full of (curved corners).
- 8. The pictures have to be ... (pinned) on the wall.

Ex.2. Fill in the gaps by using one of the modal or semi-modal verbs (may, must, can, have to...) in positive or negative form.

- 1. He..... (may) come. He doesn't know if he will.
- 2. (Can I)... borrow your pen, please?
- 3. He (must).. pay the fine at the police station.
- 4. She (didn't have to) accompany me to the wedding.
- 5. He (was able to).. swim well when he was young.
- 6. (Have you ever been able) to drive a lorry?
- 7. She (can't) be at home. I saw her in the supermarket earlier on.
- 8. You (must).. be James. You look like your mother.
- 9. (May) I come to help you tomorrow?
- 10. You ..(should) .. try to lose some weight.
- 11. They.(don't have to).. get up early tomorrow. It's a holiday.
- 12. It..(may) rain, tomorrow. I don't know.
- 13. (Should) I come to help you for the party?
- 14. He ..(can).. speak ten languages.
- 15. (Do you have to).. learn how to ride a motorcycle?
- 16. He..(can't) be the person I met ten years ago.
- 17. She .(must) ... go and vote in her hometown.
- 18. She (can) ... avoid talking to him.

Ex.3. Fill in the gaps by using the words given (manufactured, stabilize, adjust, contemporary, movement, flexibility, wastage, reduction, taper, entire structure).

1. Chipboard is a kind of board preferable to solid wood.

2. The legs of the table, means that they get thinner towards the edges.

3. You have to show to him, if you want to make him feel better.

4. The..... of the prices will bring more people to the shops.

5. The..... will collapse, if you take this piece away.

- 6. I don't like design very much.
- 7. You like, means you like dancing as well.
- 8. Lots of wood is thrown away through.....

9. You have to the lever before you turn the machine on.

10. If you don't the chair, I cannot repair it.

Ex.4. Use the following modal and semi-modal verbs in positive or negative form to fill in the gaps (can, may, must, should, have to, be able to).

1. The children..... study hard for the exams.

2. You..... avoid talking to him. He is angry with you.

- 3. I ride your bicycle?
- 4. He..... count to ten since he was one years old.
- 5.She..... come to the party alone yesterday.
- 6. He..... be his brother. They don't look very similar to each other.
- 7. I go and leave you alone?
- 8. You pay the bill, otherwise you will be arrested.
- 9. He write in Arabic when he was ten but now he cannot.
- 10. Tomas..... come back home so late. They don't let him do so.
- 11. We..... take our jacket with us. It is not cold.
- 12. He listen to what his parents say.
- 13. They avoid doing their homework.
- 14. She use my car, if she wants to.
- 15.you give me a hand?
- 16. She..... work so hard. She has enough money already.
- 17. he wear something formal at the opening of the exhibition?

CHAPTER 7 ASSEMBLING FURNITURE

Collecting the parts

Get together all the parts that are to go into the finished project. If they are carefully made, your identification marks will still show. You will know how each part, joint and piece fits to the next.

Checking all the parts to see they are finished

To be considered completed, the parts will be scraped and sanded. If there are duplicate parts, rails, or legs, check each one of them to make sure they are all the same in size and shape. Check whether the joints are clearly marked. Your plan of procedure or the drawing shows whether the project is to be assembled with glue, screws, or nails.

Making protective pieces

Before attempting to clamp the pieces together, cut some protective pieces to place between the clamps and the project. These protective pieces are not needed if you use hand screws or if the metal clamps have plastic clamp pads.

Assembling the project temporarily

A trial assembly will allow you to see if the parts fit properly. This step is simple if you are assembling a project such as a bookcase or a hanging wall shelf made with parallel sides and crosspieces with dado or rabbet joints. Then all you need are flat pieces of scrap stock, cabinet clamps that fit across the project on the front and back, and a pair of clamps for each shelf. Such projects as stools and small desks usually have legs and rails with corners made with mortise-and-tenon joints or dowel joints. In either case you will need clamps to go across the ends and cabinet clamps to go across the sides.

After assembling the project with clamps, check with a square to make sure that the project is squared up. Using a steel tape or rule, measure across the corners and up and down to check that the sides and ends are parallel. By shifting a clamp or tapping a side or a leg with a mallet, you can bring it into place.

Assembling with glue

If the project can be assembled at one time, do it that way. If the project is a desk, or a stool you will assemble and glue the end section one day and assemble the rest later. In addition to the proper parts, clamps, scrap pieces, and glue, have ready a rubber mallet, a rule or tape measure, and a square. If animal glue is used, heat the the wood parts before assembling.

Useful vocabulary

Identification marks = σημάδια αναγνώρισης Scrape= ξύνω Duplicate= διπλός Trial= δοκιμή Crosspieces= τεμνόμενα κομμάτια Stool= σκαμπό Square= γωνιά Tape measure= ταινία μέτρησης Rule= χάρακας



Checking the project for squareness

Comprehension questions

-What do you have to do before assembling the parts of a wood project? -Why is it important to place protective pieces between the clamps and the project? -Why is a trial assembly important?

-What do you have to do after you have assembled the project?

-Can you assemble the project at one time if you are making a stool?

Grammar in use

Simple Future

Χρησιμοποιείται για κάτι που θα γίνει στο μέλλον, για να κάνουμε μια πρόβλεψη η να δώσουμε μια υπόσχεση. e.g. In twenty years time people will travel to the moon. Σχηματίζεται με το ρήμα **will** και το κύριο ρήμα χωρίς το to. Άρνηση σχηματίζουμε βάζοντας not μετά το will και ερώτηση αντιστρέφοντας το will με το υποκείμενο.

Σύντομη απάντηση: Yes, I will. No, I won't. (σύντομος τύπος)

Έχουμε κι άλλους τρόπους να μιλάμε για το μέλλον. Χρησιμοποιούμε το **be going to** για να περιγράψουμε μελλοντικούς σκοπούς e.g. I am going to visit my grandparents on Monday.

Ενώ χρησιμοποιούμε Present Continuous για να μιλήσουμε για μελλοντικά

σχέδια.e.g. He is going to the Bahamas for his summer holidays.

<u>Time expressions</u>: Tomorrow, soon, one day, next week, in a minute, tonight, this evening, later. e.g. He is coming to see us tomorrow.

Find examples of Simple Future in the text.

CH.7. EXERCISES

Ex.1. Fill in the gaps using one of the following words (sand, scraped, procedure, duplicate, trial).

1. The piece of wood has to be .. (scraped).. and cleaned of any thinnings left on its surface.

2. The...(trial).. assembly is the one through which you make sure the components of the chair are in the right place.

3. If you want to have two chairs which are the same, you have to ..(duplicate).. them.

4. Before painting the chest of drawers you have to ..(sand).. it down.

5. The making..(procedure).. of a piece of furniture is creative.

Ex.2. Find the correct way to talk about the future (will, be going to, Pr. Continuous)

- 1. Look! He ..(is going to jump off).. a bridge.
- 2. I think, he .. (will finish) ..school this year.

3. We..(are visiting).. our parents next week.

- 4. In 2030 people..(will go).. to the moon on holidays.
- 5. The clouds are grey. It is.. (going to rain) ...soon.
- 6. I am not sure if he ..(will travel) .. by train or bus.
- 7. They .. (are going).. to Spain on holidays in the summer.
- 8. The phone is ringing! I..(will answer) .. it.
- 9. He ..(is sitting).. an exam tomorrow.
- 10. He has had a bath. He ..(is going to dry up).. his hair before going out.
- 11. He ..(will try).. harder to pass the exams, I think.
- 12. He expects that I .. (will help) .. them to move out.
- 13. Look at them! They..(are going to get off).. the bus at the next bus stop.
- 14. Yeah! I .. (am going to look for).. a new job next week.
- 15. They ..(are buying).. a new car next year.
- 16. (Is he going to come).. over for a drink tomorrow?

Ex. 3. Fill in the gaps by using the correct words(protective, temporarily, steel tape, rule, shift, stool, dado joint, rail).

1.You have to use a mask if you want to make sure your eyes are safe.

2. The crosspieces will be joined with a

3. You may keep my dog because I am off on holidays.

4. We can use a to measure the length of the sofa.

5. The is used for drawing straight lines.

6. The two edges of the chair will be joined with a curved.....

7. We bought a new to sit on in the kitchen.

8. You can only..... the direction of the lines from left to right.

Ex. 4. Find the correct form to talk about the future.

1. Wait for me! I.....(come) with you to the cinema.

2. He.....(arrive) at ten he said.

3. Mary.....(get married) with Jim in September.

4. My prediction is that they.....(get) a divorce.

5. Look at the sky! It.....(snow) soon.

6. I.....(accompany) you to work. I am not sure!

7. They.....(visit) us next week.

8. He(probably come by) after work.

9.....(he/ finish) his studies next year?

10. He(talk) to the manager, I think!

11.(he/work) on Monday?

12. She(she/ fly) to Chicago next Monday.

- 13. Don't worry! I.....(come) over to help you with it.
- 14.(you/visit) your friends tomorrow morning?
- 15. Jerry maybe(not/ go) to work on Tuesday.
- 16. The wind is blowing! It.....(start) raining in a few minutes.
- 17. I have got an invitation! They(have) a party next weekend.

18. The phone is ringing! I(pick) it up.

CHAPTER 8

BUILDING FURNITURE

TABLE AND STOOL CONSTRUCTION

Most tables or stools are made with four legs joined by rails. The legs and rails are usually fastened together with either dowel construction or mortise-and-tenon joints. To strengthen the joining parts, a wood or metal corner block is inserted. The corner blocks help to hold the table square. They also add support at its weakest points.

CABINETS, CHESTS, AND DESKS

Most cabinets, chests and desks include drawers and doors. There are three steps in installing a drawer in a table: cutting the rail to receive the drawer, making the drawer and making the drawer guide. In chest and desk construction only the last two steps are needed.

DRAWER CONSTRUCTION

The drawer may be made to fit flush with the opening, or it may be a lip drawer (fit over the frame). To make a lip drawer, a 3/8 inch rabbet is cut around the inside edge of the drawer front. Then the lip drawer overlaps the frame. A common way of joining the front to the sides is with a rabbet joint. The back is joined to the sides with a butt or dado joint.

DRAWER GUIDES

The three most common drawer guides are the slide-block guide and runner, the side guide, and the center guide.

DOORS

Common hinge doors can be made of either plywood or particleboard. This is often covered with plastic laminate or veneers. Better quality doors are of panel construction. They have the advantage over solid construction. They warp less. Only the frame can change in size.

The two most common methods of mounting a swinging door are the flush door and the lip door. The flush door fits inside the frame or the cabinet or case. The lip door has a rabbet that has been cut around the inside edge of the door on three or four sides so that the door covers part of the frame of the cabinet. Sliding doors may be used in areas in which it is difficult to have doors that swing open and shut. Sliding doors are usually made of plywood, hardboard, or glass.

FITTING A FLUSH DOOR

Check the opening of the door. Plane the edge that will fit against the frame. Make sure that each stile, or side piece, will be about the same width when the door is fitted. Measure the height of the opening. Lay out and cut the bottom rail. If the frame is square plane this end square with the first edge. Measure the width of the opening at the top and bottom. Sometimes the frame opening will not be exactly parallel from top to bottom. Cut and plane the edge until the door fits properly. Alter the hinges which are installed, it must still have some "play" to swing open. This edge should be planed at a slight bevel inward the back of the door. This gives the stiles proper clearance when the door is open or closed.



Several ways of attaching a tabletop to the rails

Useful vocabulary

Rail= σανίδα που χρησιμοποιείται για σχηματισμό πλαισίου του τραπεζιού

Strengthen= δυναμώνω

Guide= οδηγός συρταριού

Lip drawer= συρτάρι με χείλος

Slip= γλιστρώ

Hinge= μεντεσές

Swinging door= πόρτα που κινείται με βοήθεια μεντεσέδων

Flush door= πόρτα που εφαρμόζει ακριβώς στο πλαίσιο

Lip door= πόρτα με χείλος

Sliding doors= συρόμενες πόρτες

Hardboard= σκληρό χαρτόνι Fit= ταιριάζω Install= εγκαθιστώ Bevel= κεκλιμένη πλευρά

Comprehension questions

-How are most tables' and stools' joints fastened together?
-How do we install a drawer of a table?
-How is a lip drawer different from a flush drawer?
-What are the most common ways of putting the joints of a drawer together?
-What kind of drawer guides are there?
-Why is it preferable to make a paneled door rather than a solid one?
-What kind of different doors are there?
-Why do we plane a flush door slightly at one edge?

Grammar in use

Modal verbs (passive voice)

Σχηματίζουμε παθητική φωνή χρησιμοποιώντας το modal verb + be+ παθητική μετοχή του ρήματος. e.g. They can make a table easily. (active voice)

A table can be made easily. (passive voice)

He should listen to her words carefully. (active voice) Her words should be listened to carefully. (passive voice)

Find examples in the text of the use of modal verbs in passive voice.

CH.8. EXERCISES

Ex.1. Fill in the gaps using one of the following words (swinging, warp, dowel, insert, lip drawer, edge).

1. When you get to the ...(edge).. of the cliff, you should be very careful.

2. We can fit in two .. (swinging).. doors, which move easily back and forth.

3. When wood gets wet it might ...(warp).

4. If you .. (insert).. a coin in the machine, it will start working.

5. A..(dowel).. is a kind of hidden joint of two edges of wood.

6. A ..(lip drawer) .. has an edge which covers the four sides of its frame.

Ex.2. Turn the sentences from active into passive voice.

1. My brother will help me with my homework.

I will be helped with my homework by my brother.

2. He may offer her a wedding present.

She may be offered a wedding present by him.

3. I won't allow them to come back late.

They won't be allowed to come back late by me.

4. They cannot learn Chinese easily.

Chinese cannot be learn easily.

5. Should I lose some weight?

Should some weight be lost by me?

6. Can he pick you up later?

Can you be picked up by him later?

7. She may use my pen.

My pen may be used by her.

8. Must I pay the fine now?

Must the fine be paid by me now?

9.He should avoid writing in English.

Writing in English should be avoided by him.

10. They may allow us to go to the party.

We may be allowed to go to the party.

11. Will you give me a piece of paper?

Will a piece of paper be given to me by you?

Ex.3. Fill in the gaps using one of the following words (fastened, strengthen, add, cabinets, install, drawer guide, flush, hinges).

1. We are going to a new container outside the house.

2. We normally use a to make a drawer slide inwards and outwards easily.

3. The door doesn't have any lips around its frame.

4. The two edges can be together tightly.

5. We make to store things in kitchens or bathrooms.

6. If you want to the chair, put its screws in tightly.

7. You can some sugar to your tea to make it sweeter.

8. We use to connect doors with their frames and help them move back and forth.

Ex.4. Turn the sentences from active into passive voice.

1. He may say it to his parents. 2. He will drive my car for a while. 3. She won't give me any money. 4. Should I help them to move out? 5. Can I try your trousers on? 6. He should pay off his debts. 7. Luke must do his homework. 8. Do I have to bring her with me? 9. They won't pass the exams easily.

CHAPTER 9

REPAIRS TO CHAIRS

REPAIRING BACKFOOT JOINTS

The joints that cause most trouble are the ones where the side and back seat rails meet the backfoot. If the tenons, dowels, and the mortises are all intact, the work involved is straightforward. Everything will need cleaning up and all old glue will have to be removed. It will then be a matter of re-gluing the joints and cramping them up. It is this last job - cramping up - that may be difficult if the backfoot is curved just where you want to place the cramp. To get over this, you may, have to make a cramping block with a slightly, curved face.

The situation may be further complicated by the side seat rails being fixed at an angle to form a seat that tapers from back to front. Unless you arrange a cramping block , any cramping force may distort the seat frame and weaken the joints all round. The cramping block can be attached to the front seat rail with either a G-cramp or a thumbscrew.

There is still another direction in which to cramp, namely the joint between the back seat rail and the backfoot, but as this is a square joint, a sash cramp can be positioned to span the backfeet and then tightened up.

Before work can begin, you will have to ensure that the remainder of the chair frame is held firmly in place, because removing the rails and the backfoot will only lead to more weakening of the same kind at the other joints. Usually the best way to hold the frame together firmly is by pinning thin strips of wood temporarily on to the underside of the seat frame, arranging them crosswise.

You can begin re-jointing by chopping the old tenon out of the mortise on the backfoot to make a new one, and working a matching mortise on the end of the seat rail. First, the end of the seat rail may have been cut at a slight angle to match the curve on the backfoot, and this angle must be retained. Second, before the joints are finally glued and cramped up, you may need to glue in some tiny pieces of veneer to compensate for the wood that was lost when sawing through them. The new tenon on the side seat rail needs to be a loose tenon that is equal in length to the combined depths of the two mortises, minus a total of about 5mm to allow for glue spaces at each end. Once the glue has set on this joint you can turn your attention to the one between the backfoot and the back seat rail.

In the case of antique chairs, however, you may come across another variation of the joint, where both the side and the back seat rails are tenoned into the backfoot; the ends of the tenons are usually mitred so that they meet inside the joint. Its main disadvantage is that a lot of wood is taken away at the very point where the backfoot is most vulnerable. Modem synthetic adhesives, however, are frequently stronger than the wood they are applied to, and using one of them on this type of joint should give plenty of strength.



Mitred tenons inside a backfoot joint

REPAIRING SHAPED PARTS

Such repairs can only be dealt with generally because there are so many different shapes on so many different chairs. The one factor that is common to all such repairs is that cramps must be used very carefully because all too frequently they have to be applied to shapes. If this is done carelessly, the whole frame may be distorted.

Balloon-back chairs were particular favourites with the Victorians and were made in great numbers. If this design is damaged at the corner of the back, a new replacement piece will be glued and dowelled in; and it will be roughly worked to shape. Final shaping and glasspapering will be done once the piece is glued firmly in place and the glue has set.

The corner of the shield-back chair is a more delicate proposition, and probably the best way to hold the repaired parts together while the glue sets is first to cover them with a thin plastic film and then bind them tightly with adhesive tape followed by strong twine.

SPRUNG TENON JOINT

This is rather an unorthodox joint that can be useful where a new rail has to be inserted without dismantling the frame, but it should only be used for rails that are not subjected to undue stress. A typical example is the stay rail or slat in a chair back. As you can see, the end of the tenon is cut off at a slight angle. There has to be enough 'give' in the wood to enable you to spring the tenon into the mortise. For safety's sake, fix a sash cramp over the top of the back to avoid breaking the joints there.



Using a "sprung" tenon joint

SPLICING

This is the kind of repair that is often needed, either when a piece has been completely broken off, or where the end of a part (usually a leg) has been badly worn away. The best plan is to glue and cramp on a slightly oversize repair piece. When the glue has set, it can be trimmed to fit and screws driven in. Their heads should be well countersunk and plugged.

On antique pieces, the toes of the legs can be badly rubbed away where they have been dragged backwards and forwards across a rough floor. In such cases, they may need tipping with new toes and, it may be better to splice them on with V-joints.

Hold the template firmly against the leg and mark round it. If necessary, you can cramp a strip of scrapwood to the leg so that it lines up with one side of the notch and guides the saw. The strip can then be moved to the other side and the sawcut repeated. Then use the template to mark out the repair piece, making sure the grain matches that on the leg as much as possible, and saw it out. If the two parts do not match exactly, always make any corrections to the repair piece and never to the notch on the leg. Once they do fit sweetly, fit a thumb or G-cramp temporarily to the leg to prevent any chance of its splitting when the repair piece is glued in and cramped up.

SHAPED LEGS

A common repair job is to make good a chipped toe. The remedy is to cut back the chipped part so that you have a flat surface in sound wood to which you can glue a block. The block is made deliberately oversize so that you can saw, chisel and rasp it to the correct shape. This design is called a 'club foot' and was turned on the lathe so that rounding off the block to be circular should not present a problem.

When the shaft of the leg has snapped, it is almost always because of some fault in the grain. Here, an oversize strip of matching hardwood is let in at the back of the leg and round.

The tricky part is working the slot for the strip. You will have to drill a series of holes that almost touch each other and make them into a slot with a mortise chisel.

TRIPOD TABLE CLAW LEGS

The design of these elegantly shaped legs is unstable, and any damage usually occurs at one of two points - where the leg is jointed to the base of the pillar, or at the 'ankle', which is the thinnest and weakest part of the leg.

On many tables you will find that metal strengthening plates have been screwed to the lower ends of the pillars and the undersides of the legs. In any case, if any tripod table you are working on does not have such a plate, it would be well worthwhile making one up and fitting it.

The slot dovetail and its housing in the bottom of the pillar are, or should be, tapered so that each leg is introduced at the bottom of the housing and tapped upwards until it is home. This does make dismantling relatively easy because, after having been steamed, the joint should be loose enough for the leg to be knocked out downwards.

Mending a burst joint at the base of the pillar is a matter of introducing glue into any cracks and splits, with possibly a few dowels judiciously located to strengthen the whole thing. Unless you are repairing the table from the point of view of conservation, the job is one that calls for a really strong adhesive such as epoxy resin. The next problem is how to apply cramps to close the splits effectively. If you have removed only one leg, the other two are bound to get in the way and prevent any kind of tourniquet being applied. In these circumstances the best plan would be to dismantle the two remaining legs. This leaves the base of the pillar around which you can apply a tourniquet type of cramp or, better still, a couple of hose clips. Once the glue has set, the next step is to glue the legs back in and cramp the joints up.

SPLITS IN THE BACK BOW

Let us consider the split that has developed in the back bow, probably as a result of some fault in the wood which was put under pressure while being bent. The obvious remedy is to splice a new piece in and this should make an effective repair provided its grain direction matches as closely as possible that of the bow itself. Make the new piece slightly oversize and glue it in. The best way to hold it in position is to bind it tightly with masking tape, followed by another binding with strong twine. Once the glue has set, it can be spokeshaved to shape, and two screws driven in, with their heads well countersunk and pelleted.

MAKING A NEW BOW FOR A WINDSOR CHAIR BACK

This is a major operation, and not one to be undertaken lightly because, in addition to the actual work involved, some special equipment will have to be built.

PREPARING AND FITTING THE NEW BOW

Assuming that the bow for the back has been bent satisfactorily, you now have to assemble it into the seat of the chair. If it is a straightforward replacement, it will simply be a matter of preparing the new bow to match the old one. This means dealing with its ends, and also drilling new holes for the sticks in the back. You can obtain the drilling angles by referring to the template, or by cramping the new bow on top of the old one so that they coincide all round. Drill one hole at a time by inserting one of the back sticks into one of the holes in the old bow and using it as a guide to drill the new one.

It is a more complicated job to prepare a new bow. First, you will have to fashion its ends to fit the mortises which are already on the seat. If, however, the seat is also new then there are several ways to fit the bow securely.



Repairing a split bow on a Windsor chair

Useful vocabulary

Angle=γωνία	cramp=μέγγενη	
G-cramp=μέγγενη σε σχήμ	α G seat rail=μέρος καρέκλας που μπαίνει το κάθισμα	
Remainder=υπόλοιπο	underside=κάτω μέρος	
Chop=κόβω	adhesive=κόλλα	
Replacement=αντικατάστα	ση glasspapering=τρίψιμο με γυαλόχαρτο	
Spring=ξεπηδώ, βγαίνω από τη θέση μου twine=σπάγκος		
Dismantle=αποσυνδέω	slat=πηχάκι	
Splice=ενώνω, κολλώ	wear=φθείρω	
Countersunk=βιδωμένος	plugged=κλείνω με τάπα	
Rub away=τρίβω	template=φόρμα	
Notch=εγκοπή, χαρακιά σε σχήμα v split= ραγάδα		
Chip=βγάζω κομματάκι ξύλου Shape=σχήμα		
Rasp=λíμα s	snap=σπάω	
Shaft=άξονας	slot=σχισμή	
Strip=λωρίδα	pillar=στήλη	
Hose clips=κλίψ που εφαρμόζουν ακριβώς bow=τόξο		

Comprehension questions

-Which are the joints which cause most trouble? When are they easily repaired and when do things get more difficult?

- -What is the difference between antique and ordinary chairs?
- -What is common in repairs of different shaped parts?
- -Where do we use splicing when repairing chairs?

-What do we do when we have a chipped toe on a chair and what when a snapped leg?

-How do we deal with a burst joint base of the pillar of a tripod table?

-Why do bows of chairs split and what do we have to be careful with when repairing them?



Grammar in use

First Conditional

Χρησιμοποιείται για μια πράξη που είναι πιθανό η δυνατό να συμβεί στο παρόν η στο μέλλον.

Aποτελείται από δύο μέρη, την υπόθεση(If + Simple Present) και την απόδοση (Future Simple).e.g. If it rains tomorrow, we will stay in.

To will $\mu\pi\sigma\rho\epsilon$ va avtikataota $\theta\epsilon$ i amó á $\lambda\lambda\alpha$ modals (can, may...).e.g. If he is invited, he may come.

Eπίσης αντί για if not μπορούμε να χρησιμοποιήσουμε unless. e.g. Unless it rains, we will go on a picnic.

Temporals

Χρησιμοποιούμε τις παρακάτω λέξεις όταν μιλάμε για το μέλλον, και μετά από αυτές βάζουμε Simple Present.

-when ($\delta \tau \alpha v$), before ($\pi \rho i v$), after ($\alpha \phi o \dot{u}$), until/till ($\mu \epsilon \chi \rho i$), as soon as ($\mu \delta \lambda i \varsigma$).

e.g. I will talk about it with him when he comes in.

Find examples of the First Conditional in the text.

CH.9. EXERCISES

Ex.1. Fill in the gaps using one of the following words (intact, tighten, underside, depth, chop, trimmed, snaps).

- 1. The ..(depth).. of the hole depends on the size of the screw.
- 2. You have to ..(chop).. the edge off and then glue the new bit on.
- 3. If you ..(tighten).. the screws, you can sit back on the chair.
- 4. The new pieces of wood will stay..(intact), and therefore they will be brand new.
- 5. When the edges are..(trimmed).., you can apply the stain on.
- 6. If the leg of the table..(snaps), you have to make a new one.
- 7. You can cover the.. (underside).. of the chair with a new piece of plywood.

Ex.2. Fill in the gaps with the correct form of the verbs.

- 1. If you...(come)... home early, phone them.
- 2. She will be happy if they..(get) married soon.
- 3. If they are ready, they....(can come)... to the party.
- 4. Mary won't arrive early if her plane..(is).. late.
- 5. She won't be happy unless he ..(asks).. her to marry him.
- 6. They ...(will carry).. the books alone if we won't help them.
- 7. He...(may help) us with it if we ask him to.
- 8. They won't repair the chair if we...(don't pay).. them.
- 9. She can do it if you..(insist).. on it.
- 10. We won't avoid them if we...(follow) this way.
- 11. I will go out unless it ..(rains).

Ex.3. Fill in the gaps using: when, before, after, till, as soon as.

- 1. She will be ready..(when).. you are back.
- 2. They may stop working..(as soon as).. they finish with the project.
- 3. I will phone him..(before).. he phones me.
- 4. He will return home..(after).. he has finished working.
- 5. Don't look at him..(until).. he gets to the end of the road.
- 6. (When)... the phone rings, pick it up.

Ex.4. Fill in the gaps using one of the following words (worn, dismantled, countersunk, chipped, mend, cracks, slice, oversize).

1. The furniture is......We need new one.

2. You have to the leg of the table. It is broken.

3. The door is full of We need to put some filler in them.

4. If the seat is, you need to trim it at the edges.

5. When the surface of the table is, you need to sand it.

6. First you put the two edges together, that is, you..... them.

7. When the screws are, you may sit on the chair.

8. After you have..... the components, you put them back together.

Ex.5. Put the words: when, after, till, as soon as, before in the following gaps.

1.the time comes, we will help them with the project.

2.the project is ready, you will get your mark.

3. He will be back..... I arrive home.

4. She won't have the table repaired she finds the money for it.

5. We will get at the station the train arrives.

6. I see them, I will talk to them.

Ex.6. Fill in the gaps using the correct tense of the verbs in brackets.

1. If someone finds your wallet, what.....(you/do)?

2. We won't go out unless it.....(get) dark.

3.If you apply the first coat on the chair,(let) it dry for a while.

4. She may not turn up if you.....(not/invite) her.

5. Don't accompany her if she.....(not/ask) you to do so.

6. They may not buy a new flat unless they(find) the money for it.

7. If you like it, I.....(buy) it for you.

8. When he(finish) work, he will come by.

9. We will pay him back as soon as we.....(find) the money.

10. The project will be finished after we(work) for some time.

11. We won't leave until the kitchen(be) tidy.

12. If he talks too much in class, they.....(punish) him.

CHAPTER 10 REPAIRS TO TABLES

REPAIRS TO WARPED TOPS

When a top made from one solid piece has become hollow it is removed from the frame, it can be sawn lengthwise into strips about 76mm or 102mm wide, which should effectively remove any tension in the wood. You can then rub-joint the strips back together, pinning and gluing on thin strips of matching wood to the longer edges to compensate for the wood, and consequently the width, lost in the sawcuts. The method does have the disadvantage that the repairs are all too obvious both on the top and on the ends, but the top could be covered with a sheet of plastic laminate, and the edges lipped.

Although you can use hardwood strips, they are better cut from plywood, which is inherently more stable. Each strip must be in one full length piece and slightly wider than the depth of the groove so that you can plane them flush later.

There is yet another way of pulling the top flat, and that is by laying a sheet of veneer on the underside. Any polish must be cleaned off first, followed by planing the surface. The veneer must be laid with a veneering hammer.

SPLIT TOPS

There is one awkward kind of split which follows the angle of the annual rings. The best way to deal with this is first to clean out any dust, wax, etc, and then cut the split to a regular tapered shape, using a saw tilted at the appropriate angle. You can then glue and tap in the filling piece, which should be oversize so that it can be planed back flush when the glue has set. The natural tendency of one of the lips of the split will be to slide upwards. Dealing with an end split by inserting a filling piece, plus a dovetail key to prevent further splitting.





PATCHES AND HOLLOWS

Patches can be used to replace unsightly knots, scars, or blemishes in general, and although they are usually diamond-shaped, there are occasions when the grain configuration calls for a curved patch. Usually a patch need not be much thicker than 6mm or so, but its grain has to be chosen very carefully, not only from the point of view of colour but also so that the light will be reflected from it as it is from the remainder of the table top. Try brushing a coat of shellac on to each of the prospective samples because this will give them a simulated 'polished' appearance. The patch should be slightly lighter in colour because you can always darken it. Make a template out of thin card and lay it over the blemish, and mark the grain direction on it. You can then transfer it to the wood you are using for the patch, adjusting it and marking round it to give the best effect. Then tape the template to the wood with double-sided adhesive tape and saw it out. Use a file or glasspaper to undercut the edges slightly. It is also a good plan to scratch a few small grooves on the underside. Don't forget to make the patch thicker than the depth of the recess. Marking the recess from the template and cutting it out is straightforward enough. If the top is polished, lay strips of masking tape round the marks. Not only will they protect the polish but will also act as guides when you drill and chisel out the waste.



Chopping out round a pre-bored hole

RAISING HOLLOWS OR DENTS

The adoption of this remedy depends upon whether the surface is polished or not, and whether it is veneered or solid. In either case, you would be well advised to leave well alone and accept the fault, because either the polish or the veneer, or possibly both, would be seriously affected. The polish would almost certainly be marked, and the glue beneath the veneer could be liquefied, allowing the veneer to lift.

If the timber is in the white cut a few slits along the grain with a craft knife and fill the hollow or dent with a puddle of water. Then soak a small piece of rag in water and lay it in the hollow. Press down the rag with the point of an electric iron until the water steams and raises the grain to fill the hollow.

DROP - LEAF TABLES

It sometimes happens with this type of table that the top shrinks across the grain and thus becomes narrower. As a result, the flaps can no longer hang vertically but are pushed outwards slightly by the underframe.

Unscrewing the rule-joint hinges and removing the leaves is the first step, followed by taking off the top. You have to examine the top to ascertain whether it is solid or veneered. If it is solid the grain will run parallel to the shorter side, across the top. This must be so because it would be difficult to work the rule joints on end grain. If the grain and figure are not too flamboyant and distinctive, the easiest solution is to saw across the top at the centre so that you separate it into two halves. You can then glue in a filling strip. It would be a good plan to strengthen the joint with dowels, which could penetrate right through the strip. If possible, it would also help to screw and glue a batten on the underside of the top as a further reinforcement.

If the top is veneered, inserting a filling strip would obviously spoil its appearance. It may be possible to scrape or plane away some wood from the end frames so that the leaves can hang vertically, but this can only be effective in mild cases. The alternative is to cut away the rule joint at each end of the top and fit replacement strips that will bring the top to the required size. The strips will need rule joints worked on them first so that you can check that they fit those on the leaves. The strips, can then be dowelled and glued in place.



A fault that can develop with a drop-leaf table

REPAIRS TO JOINTS

The three joints most frequently used on flap or drop-leaf tables are the rule joint, the knuckle joint, and the finger joint - the last named being found mainly on antique pieces.

The rule joint is the one most generally employed to hinge the leaf of a drop-leaf table, and the faults that usually develop are that the joint opens and closes with difficulty; and damage occurs to the hinge because of misuse. Binding that occurs even when the hinge is in good order and correctly positioned is usually due to dampness that has swollen the wood on the meeting edges. The best and usually the most effective remedy is to unscrew the leaf and leave it and the table in a warm, dry atmosphere for as long as possible. It sometimes helps if you glasspaper the convex edge lightly, holding the glasspaper on a wooden rubber shaped exactly to the reverse of the profile. If the old hinges need replacing, you must position the new ones precisely to make the joint work properly.

Both knuckle and finger joints swing laterally to provide support for their flaps, and the trouble is that they become sloppy and do not hold the flaps at a truly horizontal level. Over the years, the holes wear away and become too large. The simplest solution is to remove the pin, enlarge the holes, and insert a new pin.

There is another possible cause of the sloppiness, which is that the bearing surfaces of the knuckles or fingers have worn, and slackness is the result. Some kind of bushing is required, and small slips of veneer can be glued on to the bearing surfaces. These can be trimmed and glasspapered to shape after the glue has set, until the required sliding fit is obtained. By holding it in the vice and chiselling away a shaving or two from each face, sufficient space will be created to insert the slips.



Dealing with a loose knuckle or finger joint

Useful vocabulary

Hollow=κούφιος	strip=λωρίδα
Sheet=φύλλο	flush=κάνω επίπεδο
Split=άνοιγμα ξύλου	tilt=γέρνω
Knot=ρόζος ξύλου	scar=σημάδι
Blemish=ψεγάδι	grain configuration=σχηματισμός νερών
Patch=κομμάτι ξύλου	recess=εσοχή
Craft knife=σουγιάς	liquefy=υγροποιώ
Rag=πανί	drop-leaf table=τραπέζι που ανοίγει
Vertically=κάθετα	hang=κρεμώ
Binding=δέσιμο	convex=κυρτός
Reverse=αντίθετο	knuckle joint=ένωση σε μορφή γροθιάς
Finger joint= ένωση σε μορφή δακτύλων flap=φύλλο τραπεζιού	
Pin=καρφίτσα	

Comprehension questions

- -What do we do when a table is hollow?
- What do we do to repair splits of tables?
- -Why do we use patches when repairing tables? How can we make one?
- -What does the way we treat dents of tables depend on?

-Why are there usually problems with drop-leaf tables? What kind of joints are used on them?

-Why do flaps of tables become sloppy?

Grammar in use

Comparison of Adjectives

Comparative (συγκριτικός βαθμός)

Χρησιμοποιείται για να συγκρίνουμε δύο διαφορετικά πράγματα μεταξύ τους.e.g. Tom is taller than James.

Χρησιμοποιούμε επίθετο+ er και τη λέξη than:

-όταν το επίθετο είναι μονοσύλλαβο.e.g. short, shorter

-όταν το επίθετο είναι δισύλλαβο και τελειώνει σε -y. Τότε το -y τρέπεται σε-i και έπειτα προσθέτουμε τη κατάληξη-er.e.g. happy, happier.

-όταν το επίθετο είναι δισύλλαβο και λήγει σε –ow, -er, -le.e.g. slow, slower.

Χρησιμοποιείται more/less +επίθετο και η λέξη than:

-όταν το επίθετο έχει περισσότερες από τρεις συλλαβές.e.g. modern, more modern.

-στα υπόλοιπα δισύλλαβα επίθετα.e.g. boring, more boring.

Superlative(υπερθετικός βαθμός)

Χρησιμοποιείται για να συγκριθούν περισσότερα από δύο ουσιαστικά μεταξύ τους.e.g. This is the fastest car in the world.

Χρησιμοποιούμε the + επίθετο + -est:

-όταν το επίθετο είναι μονοσύλλαβο.e.g. fat, the fattest.

-όταν το επίθετο είναι δισύλλαβο και τελειώνει σε –y, -ow, -er, -le. e.g. funny, funnier.

Χρησιμοποιούμε the +most/least + επίθετο:

-όταν το επίθετο έχει περισσότερες συλλαβές.e.g. dangerous, the most dangerous.

-σε ορισμένα δισύλλαβα επίθετα.e.g. careful, the most careful.

Εξαιρούνται τα ακόλουθα επίθετα και τα παραθετικά τους.

Good-better-best

Bad-worse-worst

Much-more-most

Many-more-most

Little-less-least

CH.10. EXERCISES

Ex.1. Fill in the gaps using the correct word (length, appearance, blemish, splits, unscrew, drop-leaf table).

1. If there are cracks and(splits).. on the table, it needs to be repaired.

2. You have to take care of your..(appearance).. if you want to succeed in life.

3. We bought a ..(drop-leaf table)... for the kitchen because there is not enough space for it.

4. There was not a single ..(blemish).. on the sofa, though we found it at a discount price.

5. If you .. (unscrew).. the screw, you can check if the hole is big enough.

6. If you measure the ..(length).. of the table, you can make one of the same size.

Ex.2. Use the comparative or the superlative of the adjectives given.

- 1. He is now...(more careful).. than he used to be.
- 2. She may be much..(more careful).. in the future, but I am not sure.
- 3. The national road is ...(more dangerous).. than the smaller roads.
- 4. Try to be a...(better student)....this year.
- 5. Be.... (nicer).. to your friends or else you will be left alone.
- 6. My suitcase is ...(heavier).. than his.
- 7. They will be ... (the happiest)... people in the world.
- 8. She is ..(the best).. worker in the factory.
- 9. We bought .. (the most expensive).. chair in the shop.
- 10. He earns....(more)...money in his new job.
- 11. Buy a(stronger)... rope this time.
- 12. She may not have any...(closer).. friends.
- 13. Her English is ...(better).. than mine.
- 14. We won't have any..(more).. money left soon.
- 15. They don't have ..(the worst).. house I have ever seen.
- 16. She may pretend to be ..(more polite)..but she is not.
- 17. These books are ... (the heaviest)... things I have ever lifted.

Ex.3. Fill in the gaps using one of the following words (dented, misuse, distinctive, enlarge, dampness, craft knife, darken, recess, wax).
- 1. If your table is, you have to take it to a specialist.
- 2. To a drawing means to make it bigger.
- 3. You can use ato curve a nice pattern on a piece of wood.
- 4. You can first sand the cabinet and then polish it with
- 5. One should notmachines if they want them to last longer.
- 6. If there is a on the wood, use some filler to make it disappear.
- 7..... makes wooden furniture warp.
- 8. If you want to the color, add some black into it.
- 9.He has got a accent because he is not Greek.

Ex.4. Use the comparative or the superlative of the adjectives to fill in the gaps.

1. My life is than it used to be.	(hard)
2. She lives a life than her brother	. (dangerous)
3. I will accept a offer than his.	(nice)
4. Kate has found an job.	(easy)
5. They won't have any regrets about it now.	(little)
6. She will make a hole on the ground.	(deep)
7. We may have future here.	(bright)
8. He wants to have a relationship to him.	(close)
9. They drive a car these days.	(expensive)
10. She is carpenter in town.	(good)
11. They came home holdingflowers I have e	ever seen. (beautiful)
12. Mary always brings news of all.	(bad)
13. You have to look for aflat in town.	(good)
14. Let's buy ahouse than this one.	(big)
15. We arrived onisland of all.	(expensive)
16. Give me adress. I don't like this one.	(fashionable)
17. We can get to a place.	(high)
18. Bring your friends with you.	(good)
19. She was person I have ever met.	(strange)

CHAPTER 11 REPAIRS TO DRAWERS

REPAIRS TO DRAWER BOTTOMS AND SIDES

Drawer bottoms are particularly liable to be damaged from the contents being forced in too tightly; and the underside being rubbed and worn by the drawer stops. In modem pieces the bottoms are usually made from plywood or hardboard and it is quicker and cheaper to replace the entire bottom than to repair it.

If the bottom is made up from two pieces, they probably no longer meet at the join. On the other hand, if the bottom is in one piece, then probably it will have split. To correct both faults, you will have to remove the drawer bottom. This should be easy, because the only fixing is by means of nails of screws driven up through it into the drawer back. Remove these, and you should be able to withdraw the bottom from its groove.

After a period of use, the two parts of a drawer bottom no longer meet but have bent so that the joint is broken, and the repair will mean remaking it. Because the pieces are thin, they can only be re-glued while they lie on a flat surface. The first job is to clean off any old glue and then glue the edges, and place a heavy weight on one of them to keep it flat. Then hold the other piece flat and rub the edges together sideways.

A drawer bottom with a small split in it which does not extend the full width can often be made good by gluing on a canvas strip to the underside.

When the bottom has been worn by the drawer stops, look first at the lower edges of the drawer sides, because they have probably worn away with constant use and so allowed the drawer stops to rub on the bottom. The amount of wear is usually unevenly distributed along the edge. The damaged area can be repaired by putting in a filling piece. The depth to be sawn at the edge is likely to be small. A filling piece can be prepared and glued in, and trimmed to size when the glue has set.

The same trouble can occur to a carcase where the front drawer rail and runners consist of a solid piece of wood running from front to back. Here, the repair is complicated by the fact that the wear is usually concentrated at the front end and runs out towards the back but the filling piece needs to be a rectangular block. Gluing in a filling piece and trimming it to size when the glue has set, solves the problem.

REMOVING WOODEN KNOBS

If a knob is damaged chop the knob away because this avoids damage to the drawer front. The grain of the knobs runs from front to back, and a light blow on a chisel will remove the waste without the blade even touching the front.

Useful vocabulary

Bottom=κάτω μέρος bend=λυγίζω Rub=τρίβω sideways=πλευρές Depth=βάθος distribute=διανέμω Evenly=ομοιόμορφα fill=γεμίζω Knob=χερούλι





After a period of use, the two parts of a drawer bottom no longer meet

Comprehension questions

-What are modern drawer bottoms made of? Is it worth repairing them?

-What are the usual problems that drawer bottoms have depending on whether they

come in one or two pieces?

-How do we repair a drawer bottom that is made of two pieces?

-How do we repair a small split on a drawer?

-How do we repair a drawer that is worn by drawer stops?

Grammar in use

Comparison of Adverbs

Στο συγκριτικό βαθμό χρησιμοποιούμε more + επίρρημα + than. e.g. She can write more neatly than her sister.

Στον υπερθετικό βαθμό χρησιμοποιούμε the + most/least + επίρρημα. e.g. He sings the most beautifully of all.

Tα μονοσύλλαβα επίρρημα παίρνουν τη κατάληξη –er, -est. e.g. He runs faster than me.

Ανώμαλο τύπο παραθετικών έχουν τα κάτωθι:

Badly – worse - the worst, Well – better – the best, Far – fa(u)rther – the f(u)arthest

CH.11.EXERCISES

Ex.1. Fill in the gaps using one of the following words (width, depth, blade, weight, fixed).

- 1. My watch needs to be.....(fixed).
- 2. She has to look in(depth) into the matter.
- 3. The(blade) of the knife has to be sharpened.
- 4. The size of the nail depends on the(width) of the hole.
- 5. He said the car needs to be taken to the garage and(fixed).

Ex.2. Find the comparative and the superlative of the following adverbs.

- 1. carefully- more carefully- the most carefully
- 2. fast- faster- the fastest
- 3. quickly- more quickly- the most quickly
- 4. tightly- more tightly- the most tightly
- 5. beautifully- more beautifully- the most beautifully
- 6. strangely- more strangely- the most strangely
- 7. stupidly- more stupidly- the most stupidly
- 8. freely- more freely- the most freely
- 9. hard- harder- the hardest

Ex.3. Use the comparative or the superlative of the adverbs given.

- 1. The boys have been living..(the most dangerously).. of all. (dangerously)
- 2. Don't drive..(faster). We are going to have an accident. (fast)
- 3. She works..(harder)..this year than last year. (hard)
- 4. Joan will arrive...(sooner)..than we thought. (soon)
- 5. She speaks English ... (the most clearly)... of all. (clearly)
- 6. They will see her..(earlier).. than next week. (early)
- 7. He came home...(later).. than we expected. (late)
- 8. She walks ...(more slowly).. now she has broken her leg. (slowly)
- 9. They didn't do the exercises..(more easily)..with his help. (easily)
- 10. He can swim(the furthest).. of all. (far)
- 11. She cooked...(the best)..of all. (well)
- 12. He wrote in Chinese...(the worst).. of all. (badly)

Ex.4. Fill in the gaps using one of the following words (damage, rub, withdraw, groove, knob, remove).

1. If you want to open the drawer, pull the.....

2. Don't the glasses because they will get broken.

3.the surface of the table thoroughly if you want the dirt to go away.

4. If you cause any....., you will have to pay for it.

5. Pull the bottom of the drawer out of theand make a new one.

6. You can money only if you have an account.

Ex.5. Find the comparative and the superlative of the following adverbs.

1. surprisingly	
2. neatly	
3. kindly	
4. simply	
5. terribly	•
6. angrily	
7. well	
8. excitedly	

Ex.6. Find the comparative or the superlative of the following adverbs.

1. She drives	of all.	(Ca	arefully)
2. She spoke	of all the people.	(pol	litely)
3. I can behave	than I have behaved.	(ni	icely)
4. He talked	than any other time.	(6	excitedly)
5. We answered	than anyone else in clas	ss. (kindly)
6. He looked at me	of all times.	(8	angrily)
7. He spoke	. than any other person.	(fast))
8. Don't behave	of all.	(ba	dly)
9. She turned	than any of her sisters.	(sudo	lenly)
10. We washed the dish	es than yesterday.	(qui	etly)
11. He doesn't write	than Jane.	(cl	early)
12. On the sofa we sat .	than on the b	ed.	(comfortably)

CHAPTER 12 REPAIRS TO THONET FURNITURE

Thonet furniture consists of pieces of bent wood which are screwed together. Even hard beech wood is hygroscopic and so changes its volume as a result of quite minor climatic changes. This will cause the screws to loosen over time and if, in addition, the chairs are used constantly and strenuously, they can become very unstable.

Thonet pieces require no more care than other furniture; they should not be subjected to the elements, especially not rain, and the surface of the wood should be freshened up from time to time with simple furniture polish.

Removing dirt and grease

After years of usage there can be a build up of dirt and grease which makes the wood look dull. If the surface of the wood is matt, very dirty or greasy, the surface should be scoured along the grain with medium steel wool. Steel wool soaked in white spirit will dissolve any grease residue. It is then usually sufficient to merely freshen the surface up with ordinary furniture polish. The cane does not need special care but should not be allowed to become damp during the cleaning process.

Replacing the cane

The cane seats and back rests that are a characteristic of Thonet furniture are made of rattan, a variety of climbing palm which is found in the tropical jungles of Eurasia. There are many different types of rattan, depending on the climate and the soil, but they all have long slender stems.

It is unwise to repair only part of the cane, as the new, stronger caning material can cause stress, resulting in parts of the old cane breaking soon afterwards. After removing the old cane completely, the seat frame is prepared by carefully rubbing away any rough lacquer or grease with medium fine steel wool. All other repair work required should also be done at this stage. The new cane should be as close as possible in size to the old cane.

Thonet usually used a cane pattern with octagonal holes, the fineness of which depends on the distance between the holes in the seat frame. The very early items have an especially fine weave, whereas the later factory produced series models which have a stronger, although less fine pattern. New cane should be treated with thinned wood stain on both sides to blend in with the patina of the old wood. If a slight silk sheen is desired, the top surface could be treated with a matt finish varnish after staining.

As the renewal of cane seats posed a considerable problem, Thonet's catalogue offered spare seat frames- already caned and with pre-bored fixing holes - which could be screwed onto the original frame once the old cane seat had been removed.

Sample repair work

Dirty or rough surfaces and small splits or chips are easy to repair. If the surface of the wood is matt and the lacquer is porous and rough, again the wood should be scoured hard along the grain with medium fine steel wool. If this does not prove sufficient, fine sand paper can be used. This, however, must be done carefully to avoid damaging areas of the old surface that are still intact. The surface can then be freshened up with ordinary furniture polish - unless the old surface is very worn, in which case its matt silken sheen should be restored with matt varnish. Restoration with shellac should be left to a specialist, and again it is important to note that synthetic resin should never be used, not should the finish be applied with a brush.

Slight splits and chips are repaired by cutting out the damaged area and filling the hole with woodfiller. When the filler is hard it should be sanded down with fine sand paper and stained to blend in with the old surface.

Woodworm is the great enemy of wooden furniture and indicated by small holes the size of pinheads. Many different woodworm remedies are available. The best treatment for woodworm is to have the furniture disinfected in a special chamber which is heated to 60- 70°C. The high temperature kills every organism in the item but it does not affect the bent wood.

Restoration of severe damage

Repairing breaks, shortened legs, parts riddled with woodworm, broken screws and bends that have lost their curvature should only be tackled by an expert. Before starting restoration or repair work on severe damage, a decision must be made on whether the piece needs to be taken apart. When dismantling a Thonet chair, it is important to avoid mixing up the components. Every piece should be marked during disassembly so that it can be replaced just as it was.

Large breaks or cracks should not be filled with wood filler; instead the damaged area should be sawn off in the direction of the grain, to ensure that the remaining cross section is sufficiently stable. Then take a piece of furniture beyond restoration and cut a replacement piece from a corresponding area with a similar curvature. This replacement piece should be roughly adapted to the item to be restored, glued in position and held in place with clamps. Then the repair can be worked on with a rasp, file and sandpaper until it matches the original exactly.

Bent parts - such as the armrests of chairs - which have lost some of their curvature can be bent back up to a point. To do this the part must be removed from the chair. To prevent it becoming even more out of shape, a template corresponding to its existing shape should be made by cutting out a negative from a suitably sturdy plank. The bent wood piece is then fitted into the template and both of them soaked in water overnight. Meanwhile, a new template should be made that corresponds exactly to the required curvature. Remove the part from the water, take it out of the old template and bend it into the new one - which can be quite strenuous work. The piece should then be left to dry for one or two days before removing it from the template. After the surface has been refinished, the part can be replaced. This procedure is, however, only effective on parts that have only slightly lost their curvature.

If a piece is badly out of shape it must be restored in the same way as it was originally made by Thonet. A mould must first be constructed and the bending is then effected with the help of a metal strip, which stops the wood splitting.

Reconstructing destroyed or missing parts

The reconstruction of major destroyed or missing parts of furniture should normally be done by a specialist - especially if they are bent parts. Ideally, the replacement part will be taken from a similar piece of furniture which is beyond restoration.

It is, however, much easier to reconstruct smaller pieces of bent wood using the Thonet method, provided that a sample is available to construct the template. This template should be made of hardwood; a flat metal strip with screw clamps at each end to stop the wood splitting. The rod to be bent should be cut to length and the correct cross section and soaked in water for two to three days. After the metal strip has been attached, it can then be bent over the template and secured there. When the rod has dried into shape, finer work such as diagonal cuts and surface treatment can be carried out.

Legs that are too short because they have splintered or broken off, - or are riddled with woodworm, are not too difficult to restore to their proper length. The damaged part of the leg should be sawn off at an angle. A replacement piece can then either be taken from a spare old chair leg, or cut from a length of beech wood of corresponding cross section. The end of the replacement piece should be cut to the same angle and to glue the leg effectively both parts must be perfectly adjusted; stability can be increased by connecting both sections with a hidden dowel. After the glue has dried the replacement piece should be adjusted by filing and sanding, and once the leg has been re-assembled it can be shortened to its final length.

Treating the wood surface: varnishing and polishing

Perhaps the greatest danger associated with work on Thonet furniture is overrestoring. The surface of even the early mass-produced Thonet furniture was treated very differently from the modern restorers' usual methods. The beech wood was usually stained in a colour that could be selected by the customer from catalogues offering everything from natural wood to mahogany, walnut, oak and black. These surfaces were homogeneously one-tone. After staining and the application of an undercoat, the wood was varnished with a shellac solution. The finish of massproduced items was applied after assembly by spraying.

When restoring a Thonet piece, it is crucial to achieve a surface and overall impression which is as much in keeping with the character of the original piece as possible. Parts of the old surface should be kept to match the new surface to, if at all possible, so that the whole piece can be stained; the new part will absorb the stain while the old will remain unchanged. After applying the undercoat - linseed oil on a solvent-based undercoat - a shellac or matt varnish should be applied. This can be done with a cotton wool ball using medium pressure along the grain to produce a lively patina. Never work on Thonet furniture with paint or a brush.

Useful vocabulary

Beech= οξιά	Scour=τρίβω
Residue=υπόλειμμα	cane=καλάμι
Patina= πατίνα	Sheen=λαμπερός
Intact=ανέπαφο	riddle=κοσκινίζω
Disassembly=αποσυνα	ρμολογώ crosssection =
εγκάρσια τομή	
Rasp=χοντρή λίμα	file=λεπτή λίμα
Plank= μαδέρι	splinter=αγκίδα
Polish=λούστρο	loosen=χαλαρώνω
Grease=λίπος	material=υλικό
Steel wool=ατσαλόσυρι	ια stain=μπογιά, βάφω
Varnish=βερνίκι	resin=ρητίνη
Brush=βούρτσα	shellac=γομαλάκα
Sand=τρίβω με γυαλόχο	αρτο curvature=καμπύλη
Coat=" χέρι " μπογιάς s	olvent-based=διαλυτό
Linseed oil=λινέλαιο	



Chair from the suite manufactured for Court Palffy in the mid 19th century

Comprehension questions

-What is characteristic of Thonet furniture? How do we repair damages of the cane? -What is the cane pattern of Thonet furniture?

-The continuous renewal of cane seats posed a problem. How was it solved by the latest Thonet factories?

-How do we repair splits and chips on such furniture?

-What is the best treatment against woodworm?

-What do we have to be careful with when dismantling a Thonet piece of furniture? -How do we repair large breaks or bent parts of Thonet furniture which have lost some of their curvature?

-How do we reconstruct small pieces or repair legs that have splintered or broken off?

-What should we be careful with when restoring a Thonet piece?

Grammar in use

Relative clauses

Εισάγονται με τις αναφορικές αντωνυμίες(relative pronouns) who, which, that,

whose. e.g. The man is a policeman. He has a big family.

The man, who has a big family, is a policeman.

-Xρησιμοποιούμε το who η that (ο οποίος, η οποία, το οποίο) όταν μιλάμε για $\alpha v \theta \rho \omega \pi o u \varsigma$.e.g. She is the person who/that I like very much.

-Χρησιμοποιούμε το which η that (το οποίο, τα οποία) όταν μιλάμε για ζώα, πράγματα.e.g. I cannot find the pen which/that I bought yesterday.

-Χρησιμοποιούμε το whose (του οποίου, της οποίας, των οποίων) για να δείξουμε κτήση και για ανθρώπους και για πράγματα. e.g. She married a girl,whose name is Smith.

Find examples of relative clauses in the text.

CH.12. EXERCISES

Ex.1. Fill in the gaps using one of the following words (bend, polish, grease, scoured, thinned, matt, brush).

1. If you ...(bend).. the wood you can make a nice bow for the chair.

2. First you have to clean the ..(grease).., which has been stored throughout the years.

3. The surface of the wood is ..(matt).., therefore it is not sheen.

4. You can ..(polish).. the surface by using some lacquer.

5. You should buy a .. (brush).. to stain the chair properly.

6. The stain should be ..(thinned) before you use it.

7. If the surface is not .. (scoured).. with sandpaper, then it should not be polished.

Ex.2. Use relative pronouns and join the two sentences into one.

1. We are staying in a new flat. It has three bedrooms.

We are staying in a new flat, which has three bedrooms.

2. She is the new manageress. She is my mother's niece.

She is the new manageress, who is my mother's niece.

3. They are buying a new sofa. Its legs are made of beech.

They are buying a new sofa, whose legs are made of beech.

4. We are working in a bigger office. It has got three windows.

We are working in a bigger office, which has got three windows.

5. He is a nice person. His character is extraordinary.

He is a nice person, whose character is extraordinary.

6. They avoid him. He isn't very nice to them.

They avoid him, who is not very nice to them.

7. We may buy this car. It is our favourite one.

We may buy this car, which is our favourite one.

Ex.3. Fill in the gaps using one of the following words(volume, freshened up, white spirit, porous, blend, woodworm, treatment, varnished, mahogany).

1.can damage wood; it opens holes in it.

2. You can the dark paint with white one and make its colour much lighter.

3. She bought a chest of drawers made of, which is very expensive.

4. If wood absorbs moisture, then its changes greatly.

5. You have to use a against woodworm before applying the lacquer.

6. Furniture needs to be with a bright lacquer.

7. Wood comes from trees which are living things and therefore it is

8. We can use..... to make the stain thinner.

9. You can sell the furniture after you have it...

Ex. 4. Use the relative pronouns and join the two sentences into one.

1. My brother is an engineer. He works for a big construction company.

.....

2. The shop is enormous. It is two hundred square meters.

.....

3. I got introduced to this man last year. He is my doctor.

.....

4. I bought a new bed. Its wood is quite expensive.

.....

5. The driver is English. He comes from Manchester.

.....

6. The tabletop is brand new. It is made of mahogany.

.....

7. This is the strangest toy of all. He bought it for his daughter.

.....

8. I like furniture made of rattan. Its texture is very fine.

.....

9. They have got a black dog. Its fur is thick.

.....

CHAPTER 13

STAINS, POLISHES AND TRADITIONAL FINISHES

A basic knowledge of the various types of finishes and the periods in which they were used is not only interesting but can also be a significant pointer to the age of a piece of furniture.

Such furniture as there was before 1450 was almost always painted because this was a way of brightening up cold and damp interiors, and also allowed the dirt to be washed off every spring. Fireplaces did not appear until the middle of the sixteenth century; Prior to that date, smoke front the fires found its way out through holes in the roof after first depositing a layer of soot on everything. From about 1450, the 'vernacular' style of furniture used in manor houses, monasteries, inns. etc, was finished by being rubbed with an oil of some kind, usually walnut, linseed, or poppy. This often also contained a natural resin, and this kind of finish continued throughout the seventeenth century,

The opening up of trade with Oriental countries from about 1650 onwards led to the use of spirit varnish. This consisted of shellac dissolved in alcohol. The alcohol rapidly evaporated, leaving a thin film of shellac on the wood. Ten or twelve coats rubbed down with a kind of powder constituted the higher class finishes. In the eighteenth century, spirit varnishes were still being used, but by the end of the period wax polishes, and linseed oil coloured with pigment for cheaper furniture, had superseded them.

About 1820 a new method of finishing arrived front France called, appropriately enough, French polish. This rapidly became so popular that during the Victorian period many old pieces were stripped and French polished. This often destroyed the patina built up over centuries. French polishing continued to be a standard trade finish until the 1930s, but it finally fell out of favour after 1940.

It was replaced by cellulose lacquer, which was introduced in the 1930s, and became the standard finish until the 1960s. Then it, too, was superseded by the present-day synthetic lacquers.

TOOLS AND EQUIPMENT

A powered orbital sander will save hours of laborious sanding by hand, and a powered spray gun can also be handy for applying some stains, but it is not obligatory. Hand tools include a cabinet scraper; a selection of wire and bristle brushes for stripping; and a sanding block with a pad of felt glued to its face, or one of solid cork.

You will also need a selection of brushes, and this will depend on what kind of work you are doing. Different types are the wide brush for applying stain, a fitch for dealing with small corners and mouldings; a pencil brush or touching in small details; and a varnish brush that has longer and more flexible bristles than a paint brush.

Useful vocabulary

Finish= φ iví ρ i σ μ α Walnut=φουντουκιά Powder=σκόνη Evaporate=εξατμίζομαι Dissolve=διαλύομαι Spirit=διαλυτικό Pigment= $\mu \pi o \gamma i \alpha$ Wax=κερί Cellulose=κυτταρίνη Scraper=ξύστρα Sander=τριβείο Stripping=καθάρισμα μπογιάς η λούστρου Bristle brush=βούρτσα με φυσική τρίχα Felt=τσόχα Cork=φελλός Lacquer=λάκα

Comprehension questions

-How did people used to brighten up furniture before 1450 and after 1450? -How was furniture finished from 1650 onwards, in the sixteenth century, in the 1930s, in the 60s, or how is it finished nowadays? -What are the tools necessary for finishing furniture?

Grammar in use

Simple Past

Χρησιμοποιείται για να περιγράψει πράξεις που άρχισαν και τέλειωσαν σε συγκεκριμένο χρόνο στο παρελθόν.e.g.Lennon died many years ago.

Για να σχηματίσουμε κατάφαση σε ομαλά ρήματα προσθέτουμε τη κατάληξη –ed στο ρήμα.e.g.play, played.

-όταν το ρήμα τελειώνει σε –e , προσθέτουμε μόνο –d. e.g. bake, baked.

-όταν τελειώνει σε σύμφωνο+ y αφαιρούμε το -y και βάζουμε –ied. e.g. study, studied.

-όταν τελειώνει σε σύμφωνο – φωνήεν - σύμφωνο και έχει μία συλλαβή τότε διπλασιάζουμε το τελευταίο σύμφωνο και βάζουμε μετά –ed. e.g. stop, stopped.

-στα ανώμαλα ρήματα υπάρχουν συγκεκριμένοι ρηματικοί τύποι. e.g. write , wrote.

Για να σχηματίσουμε άρνηση χρησιμοποιούμε did not/didn't + το κύριο ρήμα χωρίς κατάληξη. e. g. l didn't have dinner yesterday.

Για να σχηματίσουμε ερώτηση χρησιμοποιούμε did +υποκείμενο+ το κύριο ρήμα χωρίς κατάληξη. e.g. Did you to John's last night?

Χρονικές εκφράσεις που συναντώνται με Simple Past :

Last night/last week, a week ago, in 1990.etc.

<u>Στη παθητική φωνή ο Simple Past σχηματίζεται ως εξής</u>: was/were+παθητική μετοχή του ρήματος.e.g. The boys were invited to the party last week.

CH.13.EXERCISES

Ex.1. Fill in the gaps using the correct word (fireplace, felt, cork, interior, pad, spray gun).

1. We need to have a .. (fireplace).. made because there is a cold winter coming up.

- 2. You have to cover the wood with .. (felt).. in order to clean the wood surface.
- 3. She has studied..(interior).. design I think.
- 4. We use a.. (pad).. and sandpaper on it to sand the surface down.
- 5. He made a notice board out of .. (cork).. so that we could hang the notices on it.

6. You can use a ..(spray gun).. to cover the chair in paint.

Ex.2. Put the verbs in brackets in Simple Past.

1. He(did not come) to see us yesterday.	(not/come)
2. They(drove) to work an hour ago.	(drive)
3. She(did not arrive) early at the party.	(not/arrive)
4. Jane(reached) the book quite easily.	(reach)
5. My friends(came) for a visit last summer.	(come)
6(Did she hear) anything from them?	(hear)
7. We(bought) a new flat before the wedding.	(buy)
8(Did they help) them with the painting of the hou	ise? (help)
9. We(had) pork for dinner.	(have)
10. Jim(did not tell) me the truth.	(not/tell)

Ex.3. Turn the sentences from present into past.

1. We go to work every Monday.	(last Monday)
We went to work last Monday.	
2. She doesn't like reading books.	(last summer)
She didn't like reading books last summer.	
3. They make good furniture.	(10 years ago)
They made good furniture 10 years ago.	
4. Joan looks after her parents.	(many years ago)
Joan looked after her parents many years ago.	
5. I come to the office every day.	(yesterday)
I came to the office yesterday.	

Ex.4. Fill in the gaps using one of the following words (powder, evaporates, scraper, stripping, tools, equipment, moldings).

- 1. If you buy plaster in you have to add water to make it hard.
- 2. You can use a to get rid of any unnecessary bits of wood.
- 3. We need the necessary to go climbing.
- 4. We have to keep our in a tool-box.
- 5. After the chair of its paint, you can repaint it.
- 6. In order to cover the in paint you have to use a spray gun.
- 7. If water is heated, it

Ex.5. Put the verbs in Simple Past.

- 1. She (faint) straight away.
- 2. They (paint) their house white last week.
- 3. (we/arrive) on time that day?
- 4. We..... (come) home early on Monday.
- 5. Jane.....(not/go) to college last year.
- 6. She..... (run) home once I saw her.
- 7. He(dig) the garden and then he left.
- 8.(she/paint) it black?
- 9. We.....(not/sing) along with them.
- 10. George.....(think) he was wrong.

Ex.6. Turn the sentences from present into past.

1. They arrive early on Sundays.	(last Sunday)
2. He doesn't write in English.	(when he was young)
3. She goes to Athens every week.	(last week)
4. We visit them once a week.	(a week ago)

CHAPTER 14

UPHOLSTERY : MATERIALS, TECHNIQUES

It is important to realize that each technical procedure creates a different shape and each has its own individual properties of durability and comfort that must be related to the size of the frame and its use. For instance, to form a thin flat pinstuffed pad on a frame that is clearly designed for a deeply sprung stitched pad would obviously not support the sitter in a comfortable position. Give thought to the depth of the pads: arms should be the correct height for resting elbows, inside backs should not be so deep that they shorten the seat and project the sitter forward. Remember that upholstery has to withstand aggressive treatment. It is therefore vital to build a firm foundation, and to work right through to calico stage. Planning the work

If you are working on a new frame you will have to measure for the basic materials. Top cover and trimmings may be considered before you start work. If the frame is an old one that has been stripped of all existing materials you should first check the soundness of the frame.

If you are re-making or repairing existing upholstery you must not only examine the frame but also judge the state of the upholstery. For total re-upholstery you will need to remove or 'take down' all existing materials and start from scratch.



Stuffed pad with finger-roll edges



Stitched stuff-over pad



Stitched stuff-over pad with sprung base



Deep-buttoned pad with stitched edge

Taking down

This is also known as 'ripping out". Taking down requires brute force and at times perseverance to work free stubborn tacks and well-lashed knots.

A professional upholsterer will usually cut and haul away as much worn upholstery as possible and then 'clean' the frame of tacked materials. However, you will learn much more about upholstery techniques if you remove each layer individually and note the construction. You may also be able to re-use some of the materials (particularly the stuffing) if they are in good condition.

Use a ripping chisel and mallet to remove tacks from the frame. Work in the direction of the grain of the wood to prevent splitting and weakening the frame. Start underneath the seat with the bottoming cloth if there is one. If it is covered in calico, run your hands over the upholstery to ensure that it is firm and does not sag, particularly at the front edge of the seat and arms. If a stitched edge is flattened or otherwise distorted, it must be re-made. Now turn the chair upside down and peer through the webbing and stitched springs to check the condition of the base hessian. It should not be frayed at areas of extreme stress, for instance, at the points of contact with the springs and the edge of the front seat rail.

Beneath the calico you will come to the top stuffing and/or the stuffing pad where you will find a variety of materials. Horsehair, the most likely to survive, can be removed and put aside for re-use in its complete form if the pad is sound and smooth. If it is lumpy you can tease it back into springy mounds by pulling all the strands apart and discarding any knots.



Using a ripping chisel and mallet

A stuffing pad filled with wood shavings falls apart on removal and must be discarded. Ginger fibre and sea grasses can sometimes be reused, but if they are short and crumbling they must be discarded. If the stitched pads are fairly sound they can be removed intact and put aside for re-use. Continue to remove all the upholstery, discarding all worn materials. Make a note of the buttoning patterns and springing patterns if you wish to re-create them. Springs can be reused only if they are straight and firm.

Basic rules and tips

If you are tacking into an awkward spot that the hammer will not reach lodge the tack in the rail. Pushing the tack with your fingers, hold the tip of a straight chisel to the top of the tack and knock the handle of the chisel. A regulator is used primarily to 'regulate' or adjust stuffing. Insert the pointed end at an angle and to the depth required. Sweep it around to fill dips and smooth lumps. A regulator can also be used as an extra 'finger' when tacking to difficult rails. This useful tool will also prove handy for working fabric between pads where your fingers cannot reach. Stitch a twine through the fabric with a needle, then thread both ends through the eye of the regulator, push it through the awkward space and pull the twines to draw the fabric through.

Order of working

When planning your work it is generally good advice to start with the inside back, then the arms, the seat and finally the outside back. In general it is sound advice to work the back and front rails before the sides, but you should always start by working on the rails that determine the shape of the chair. Always work on rails from the centre out towards the sides. When working on webs start by fixing the centre web.

When working with fabrics fold the materials to find the centre. Place at the centre of the rail and tack at this point first. Then fix one tack on either side. On straight rails work to one side and then the other. On curves and other shapes work alternately on either side of the centre to ensure that any patterns are symmetrical and that the cloth is 'set square" and that any 'cleaning' (the cutting away of waste material) occurs at the corners or end of rails.

Squaring the fabrics

It is vital that all materials are always fixed square to the frame in order to take advantage of their strength and durability. To ensure accuracy you can use the point of a regulator to pull the fabric forward and pin it to the frame to hold it in place while you tack. If you tack the fabric too tightly it will strain across the pad and create a tension line.

Tension

The tension of materials must be sound and regular in order to distribute weight and wear evenly in general. If the upholstery is not taut enough it will sag in use, but if too taut the materials will split away from the tacks and thus from the frame.

Tacking

Think ahead when considering the position of tacks. This will depend on the number of layers of material and the size of the rail. Tacking off is the action of hammering

the tacks home completely into the rail to anchor the fabric firmly.

Protecting the wood

When working on a chair with a show wood frame always take care to protect any vulnerable parts by wrapping them with wadding.

Useful vocabulary

Upholstery=ταπετσαρία	calico=ύφασμα κάμποτ
Hessian=λινάτσα	sound=δυνατός
Pad=γέμισμα επίπλων	stitched=ραμμένος
Button=κουμπί	spring=ελατήριο
Web=γέμισμα επίπλου	strain=τεντώνομαι
Taut=τεντωμένος	strand=συγκέντρωση νημάτων
Stuffed=γεμισμένος	elbow=μπράτσο πολυθρόνας
Frame=πλαίσιο	tack=πινέζα
Knot=κόμπος	lashed=δεμένος
Haul=τραβώ	sag=χαλαρώνω, κάμπτομαι στο μέσον
Frayed= τριμμένος, ξεφτισμ	ιένος lumpy=με εξογκώματα
Buttoning pattern= σχέδιο	τοποθέτησης κουμπιών wadding=μαλακό υλικό για
προστασία ξύλων	

Comprehension questions

-What do we do when repairing upholstery of furniture or re-upholstering from the beginning? -What is "taking down"? What do we do? Which tools do we use? -What kind of materials can we find in the stuffing of a piece of furniture? -What is a regulator used for? -What is the right order of working when re-upholstering? -What do we have to do when working with fabrics? -Why do we have to be careful when the upholstery of the furniture is too taut or not taut enough when upholstering? -What do we have to do to protect wood when upholstering?

Grammar in use

Some- any- no (and their derivatives)

-Χρησιμοποιούμε τις λέξεις **some** (μερικός-η-ο, μερικοί, ές, ά, λίγο-η –ο, -οι-ες), **someone/somebody** (κάποιος), **something** (κάτι) σε καταφατικές προτάσεις. e.g. I have bought some good new books.

There is someone in the room next door. There is still something I have to do.

-Χρησιμοποιούμε τις λέξεις **any** (καθόλου), **anybody/anyone** (κανένας), **anything**(τίποτα) σε ερωτηματικές και αρνητικές προτάσεις (όχι σε ερωτήσεις που κάνουμε για να προσφέρουμε κάτι και περιμένουμε θετική απάντηση).e.g. I don't have any good ideas. Is there anyone who wants to come with us? I don't have anything more to say.

-Χρησιμοποιούμε **no** +ουσιαστικό (καθόλου), **no one/nobody** (κανένας), και **nothing** (τίποτα) σε καταφατικές προτάσεις. e.g. There is no milk left to drink. There is no one I want to talk to. I have nothing to tell you.

CH. 14. EXERCISES

Ex.1. Fill in the gaps using one of the following words (procedure, shape, frame, ripping out, stuffing, fabric).

- 1. If you follow this..(procedure)... the products will be of much better quality.
- 2. You can use cheaper..(fabric).. to have the armchair upholstered.
- 3. When re-upholstering, you have to take all the ..(stuffing).. out and put new one in.
- 4. I don't like the..(shape).. of the bed. It is too weird.
- 5. Taking the old upholstery down means you are..(ripping out).. the upholstery.
- 6. The ..(frame).. of the chair is its carcase.

Ex.2. Fill in the gaps with some, no, any and their derivatives.

- 1. There is..(nobody).. who can help her.
- 2. (Someone).. told me he is in . I am not telling you who.
- 3. .(Nothing).. can make me feel better. I feel lost.
- 4. I have ..(something).. to tell you. I have been fired.
- 5. There is ...(nowhere).. he can go. He is left alone.
- 6. I cannot find my glasses ..(anywhere).. I cannot see very well.
- 7. (Nobody).. can help me. I am helpless.
- 8. She is telling me ..(nothing). I have heard that before.
- 9. (Someone).. will help me. There are so many nice people around.
- 10. He is ..(nowhere).. to be seen. I can't see him.
- 11. They have got ... (something)... new. They bought it.
- 12. They are going .. (somewhere). They are not telling us where.
- 13. She doesn't see it ..(anywhere).
- 14. We may bring .. (something) for the party. We may bring the drinks.
- 15. There isn't .. (anybody) who can help me. I am left alone.
- 16. There is ..(someone).. in the house. The light is on.
- 17. He will not bring ..(anyone).. with him. He will come alone.
- 18. She doesn't have ..(any).. money. She is poor.
- 19. We will get ..(some).. new books. We have enough money.
- 20. They have ..(no).. other choice. There is nothing else to do.
- 21. Don't avoid ..(anyone). Everybody is nice.

Ex.3. Fill in the gaps using the correct word (upholstery, durability, tension, sag, elbow, tacks, springs, taut).

1. If you don't want the fabric to Pull it tightly.

2. You can re-upholster the of the armchair after you are finished with its main body.

3. You can use instead of pins because they look nicer.

4. The good care of the surface of the furniture prolongs its

5. When the fabric of the furniture is old it needs new

6. Very old sprung stitched pads need to have new put in them.

7. If the fabric of the upholstery is toothen it might get torn.

8. Great on the fabric might cause some damage to it.

Ex. 4. Fill in the gaps using some, any, no and their derivatives.

- 1. There is who can help me. That is Joan.
- 2. We may arrive early. It is already too late.
- 3. She doesn't like..... She doesn't even like Jim.
- 4. We don't have in the bag. It is empty.
- 5. We may not go this summer. We have no money.
- 6. They likethese days. Everything seems to be futile.
- 7. We like.....indeed. That is Jane.
- 8. Don't throw away. Everything is useful.
- 9. She avoids...... She wants to be with people all the time.
- 10. We didn't meet.....Nobody was there.
- 11. is interesting. I think interesting things are rare to find.
- 12.laughs these days. They feel everything is going wrong.
- 13. I have friends. They are kind to me.
- 14. Don't give books away. They are mine.
- 15. She has relatives. She is all alone.
- 16. We may give to them. We are not sure yet.
- 17. Don't stay with you don't know very well.
- 18. They have saved money. They are penniless.
- 19. Have coffee. We have made enough.

GLOSSARY

USEFUL VOCABULARY

Abrasive paper = $yu\alpha\lambda\delta x\alpha\rho\tau\sigma$ Adhesive = $\kappa \delta \lambda \alpha$ Adjustable = $\rho u \theta \mu i \zeta \delta \mu \epsilon v o \zeta$ Air drying = $\varphi U \sigma I \kappa \eta \delta \eta \sigma V \sigma \eta$ Apply = $\epsilon \phi \alpha \rho \mu \delta \zeta \omega$ Ash=μελία, φράξος Assemble = συγκεντρώνω, συναρμολογώ Awl = όργανο για ανεύρεση τρύπας που έγινε προηγουμένως σε ξύλο Band saw= ταινιοπρίονο Balance = $i\sigma o \rho o \sigma \pi i \alpha$ Bark = φλοιός δένδρου Bit (drill bit=) τρυπανάκι Beech= oξιά Belt sander = $\tau \rho \beta \epsilon i \sigma \tau \alpha v i \alpha c$ Bending = $\lambda \dot{\nu} \gamma \sigma \mu \alpha$, $\kappa \dot{\alpha} \mu \psi \eta$ Bevel = κεκλιμένη πλευρά Biscuit jointer = μηχανή διάνοιξης εγκοπών τύπου μπισκότου Bland = $\lambda \epsilon i o \zeta$ Blend = $\alpha v \alpha \mu v v \dot{\nu} \omega$ Brass = μπρούτζινος, μπρούτζος Brace = $\pi \rho \epsilon \sigma \sigma \alpha$ Butt hinge = $\mu \epsilon \nabla \tau \epsilon \sigma \epsilon \zeta$ Calculate = υπολογίζω Calculation = υπολογισμός Cellulose= κυτταρίνη Circular saw= δισκοπρίονο Chipboard= μοριοσανίδα Chisel = $\sigma \mu i \lambda \eta$ Coat = $\epsilon \pi \alpha \lambda \lambda \epsilon \psi \eta$, « $\chi \epsilon \rho i$ » Complete = $\sigma u \mu \pi \lambda \eta \rho \omega v \omega$ Chuck = τσόκ Clamp = σφιγγτήρας (Clamp G = $\sigma \epsilon \sigma \chi \eta \mu \alpha G$) Collet = κολάρο Combination machine = $\sigma \dot{\nu} v \theta \epsilon \tau \sigma \mu \eta \chi \dot{\alpha} v \eta \mu \alpha$ Component = $\epsilon \xi \alpha \rho \tau \eta \mu \alpha$ Construct = κατασκευάζω Construction = κατασκευή Corrosion= οξείδωση Cover = καλύπτω Cross section = εγκάρσια τομή Curl = στρεψοίνια Curve = σκαλίζω Cut= τομή, κόβω Cutter block = συστήματα ασφαλείας κοπτικού Dovetail = χελιδονοουρά Decorative = διακοσμητικός Defect = $\epsilon \lambda \dot{\alpha} \tau \tau \omega \mu \alpha$ Density= πυκνότητα

Detail = $\lambda \epsilon \pi \tau \sigma \mu \epsilon \rho \epsilon \alpha$ Disc sander = τριβείο δίσκου Dismantle= αποσυνδέω Dowel = $\kappa \alpha \beta i \lambda \alpha$ Drawer = $\sigma u \rho \tau \alpha \rho i$ Drill = τρυπάνι, κάνω τρύπα με τρυπάνι Drum sander = τριβείο κυλίνδρου Dve = $\beta \alpha \phi \omega$ Edge = $\dot{\alpha}\kappa\rho\eta$ Effective = αποτελεσματικός Elevation = $\tau o \mu \eta$ (front elevation = $\pi \rho \delta \sigma o \psi \eta$) (sectional elevation = $\kappa \alpha \theta \epsilon \tau \eta \tau o \mu \eta$) Elm=φτελιά Equipment = $\epsilon \xi \sigma \pi \lambda \sigma \mu \delta \zeta$ Extend = $\pi\rho o \epsilon \kappa \tau \epsilon i v \omega$ Faultless = $\delta(\chi\omega\zeta)\lambda\dot{\alpha}\theta \delta\zeta$ Fence = οδηγός τροφοδοσίας Fibreboard= ινοσανίδα Fibreglass=υαλοβάμβακας Filler= στόκος, γέμισμα ξύλου Finishing = $\varphi v \rho \sigma \mu \alpha$ Fix = επισκευάζω Flexible = $\varepsilon \dot{\nu} \kappa \alpha \mu \pi \tau \sigma c$ Former= σχηματοποιητής, καλούπι Frame = $\pi\lambda\alpha$ iσιο Gauge = μετρώ ακριβώς, μέτρο $Gap = \kappa \epsilon v \delta$ Glossy=γυαλισμένος Glue = κολλώ, κόλα Grinding = τρόχισμα Grain = νερά ξύλου, κατεύθυνση ινών Groove = αυλάκωση, γκινισιά Growth ring=αυξητικός δακτύλιος Gullet = διάκενο Grit = ένδειξη για τραχύτητα γυαλόχαρτου Hacksaw = $\sigma_1\delta_1\rho_0\pi_0$ Halve=μοιράζω στα δύο Handle = $\chi \epsilon \rho o \dot{\nu} \lambda I$ Handsaw = $\pi \rho i \delta v i \chi \epsilon \rho \delta \zeta$ Hardwood = ξύλο από πλατύφυλλα Hinge = μεντεσές Honing =ακόνισμα Insert = $\epsilon i \sigma \dot{\alpha} \gamma \omega$ HSS = high speed steel = $\alpha \tau \sigma \alpha \lambda \iota \nu \eta \lambda \eta \zeta \tau \alpha \chi \iota \tau \eta \tau \alpha \zeta$ Joint=αρμός Intersection = τομή Kiln= $\kappa \alpha \mu i \nu i$ Kiln drying= στέγνωμα σε καμίνι Knot= ρόζος ξύλου Lacquer, solvent= $\lambda \dot{\alpha} \kappa \alpha$ ($\mu \epsilon \delta \alpha \lambda \nu \tau \kappa \dot{\alpha}$)

Lacquer, water= $\lambda \dot{\alpha} \kappa \alpha$ ($\pi \epsilon \rho i \dot{\epsilon} \chi \epsilon i v \epsilon \rho \dot{\epsilon}$) Laminating= $\kappa \alpha \pi \lambda \dot{\alpha} \nu \sigma \mu \alpha$ Laminated wood = $\kappa \alpha \pi \lambda \alpha \mu \dot{\alpha} c$ Lathe= τόρνος Length =μήκος Lumber=χοντρή ξυλεία Lid = καπάκι Mallet=ματσόλα Marking knife= μαχαίρι για μαρκάρισμα Marking out= μαρκάρισμα Marguetry= ψηφιδοθέτημα, μαρκετερί Masking tape= ταινία κάλυψης MDF=medium density fibreboard= ινοσανίδα μεσαίας πυκνότητας Match=ταιριάζω Material=υλικό Measurement=μέτρηση Mitre (-joint)= λοξή ένωση ξύλων Molding = καλούπωμα, διακοσμητικά σχέδια που σκαλίζονται στο ξύλο Mortise = μορσότρυπα Nail = $\kappa \alpha \rho \phi i$ Notch = εγκοπή, χαρακιά σε σχήμα v Nuts and bolts= $\pi \alpha \xi \mu \alpha \delta \beta$ και βίδες Oak = oξιά Oil = λάδι Overhang = $\pi \rho o \epsilon \xi \xi \chi \omega$ Paring= ξάκρισμα Parings=πριονίδια Parquet= παρκέ Particleboard (Chipboard) = $\mu o \rho i \sigma \sigma v (\delta \alpha$ Pattern = $\sigma \chi \epsilon \delta i \sigma$ Penetrate = διαπερνώ, διατρυπώ Piece of furniture = $\xi \pi i \pi \lambda o$ Pin = στερεώνω, σφήνα Pinch = $\pi i \alpha v \omega$ Plan = σχεδιάζω, σχέδιο Plaster=yúψoc Plane (blade)= $\pi\lambda \dot{\alpha} v \eta$ Plank = μαδέριPlywood = κόντρα-πλακέ Pore = πόρος ξύλου Proportion = $\alpha v \alpha \lambda o \gamma i \alpha$ Pigment = χρωστική , μπογιά Plunge = βυθίζωRail = βέργα, κάγκελο Radial arm saw= δισκοπρίονο εγκάρσιας τομής Rasp(= riffler = file) = $\lambda i \mu \alpha$ Recess = εσοχή, φτιάχνω βαθούλωμα Rip – saw = ξυλοπρίονο Respirator = $\mu \dot{\alpha} \sigma \kappa \alpha$ Rough = $\dot{\alpha}\gamma\rho_{10}\sigma_{2}$, $\dot{\alpha}\chi_{11}\lambda_{21}$ Roughing gouge = $\sigma \kappa \alpha \rho \pi \epsilon \lambda o$

Rout= γραμμώνω, πατικώνω Remove = μετακινώ Safety edge tools = $\epsilon \rho \gamma \alpha \lambda \epsilon i \alpha \gamma \alpha \alpha \sigma \rho \alpha \lambda \epsilon i \alpha \zeta$ Sand = τρίβω με γυαλόχαρτο Saw = $\pi \rho i \delta v i$ Scraper = $\xi \psi \sigma \tau \rho \alpha \gamma \alpha \xi \psi \lambda \rho (scrapping)$ Screw (slot-head, cross-head) = $\beta \delta \alpha$ Screw-driver = $\kappa \alpha \tau \sigma \alpha \beta \delta \delta$ Sharp = κοφτερός, οξύς Shellac = $y_{0}\mu\alpha\lambda\dot{\alpha}\kappa\alpha$, $\rho_{0}\tau_{1}\nu_{0}$ Slat =πηχάκι γρίλιας Slot = εγκοπή Smooth = $\lambda \epsilon i \circ \zeta$ Soss hinge = μεντεσές (μη ορατός όταν η πόρτα είναι κλειστή) Splinter = $\alpha \gamma \kappa \delta \alpha$ Split= payáða Stable = σταθερός Stability = σταθερότητα Stain = $\beta \alpha \phi \omega$ Steel = ατσάλι Stiff = δύσκαμπτος Stripping = αφαίρεση λούστρου Structure = $\delta o \mu \dot{\eta}$ Support = υποστηρίζω, υποστήριγμα Surface = $\epsilon \pi i \phi \alpha v \epsilon i \alpha$ Tack = καρφώνω με καρφάκια Ταρ = χτυπώ ελαφρά Tenon = τόρμος, δόντι ξύλου Thick = πυκνός, χονδρός Timber = $\xi \upsilon \lambda \epsilon i \alpha$ Tint = απόχρωση, τόνος Trench = $\chi \alpha \rho \dot{\alpha} \kappa \omega \mu \alpha$ Try square= γωνιά Tool = $\epsilon \rho \gamma \alpha \lambda \epsilon i o$ Triangular = $\tau \rho i \gamma \omega v i \kappa \delta \varsigma$ Turpentine = $v \epsilon \phi \tau$ Underside = $K \dot{\alpha} \tau \omega \mu \dot{\epsilon} \rho \sigma \zeta$ Upright = $\delta \rho \theta | o \zeta$ Varnish = περνώ με λούστρο Veneer = $\kappa \alpha \pi \lambda \alpha \mu \alpha \zeta$ Vice = $\mu \epsilon \gamma \epsilon \nu \eta$ Visor = μάσκα ματιών Warp=σκεβρώνω, παραμορφώνομαι Wax = $\kappa \epsilon \rho i$ Waxed = $\kappa \epsilon \rho \omega \mu \epsilon v \rho c$ White spirit= νέφτι Width = $\pi\lambda$ άτος Wire wool = $\sigma \dot{\nu} \rho \mu \alpha$ Wood carving = $\xi u \lambda o \gamma \lambda u \pi \tau i \kappa \eta$ Woodworm = σαράκι

QUESTIONS FOR REVISION

- 1. Why is wood important to our world? It is useful to humankind, it provides habitat to flora and fauna and it plays an important role regulating the climate.
- 2. What is the growth ring and which are its zones? It is a distinctive layer of wood which is formed every spring when the sap of the trunk rises. It has two distinct zones, the one made of fast-growing earlywood cells formed in spring and the one made of slower-growing latewood cells formed in summer.
- 3. What different types of wood texture are there? There is the fine texture and the course texture of wood.
- 4. What do we call wood conversion? The process through which wood is transformed from its raw lumber form into "dimensioned" form.
- 5. What is air drying and what is kiln drying? Air drying is the traditional method of reducing moisture content in wood by maximizing the drying effect of the wind. Kiln drying is the drying process of wood done by professional dryers.
- 6. What kind of wood preservatives are there and why is preservation important to treatment of wood? There are tar oils, water-borne preservatives and organic solvent-borne preservatives. Wood preservation is important because it extends the life of wood.
- 7. What is plywood? How is it made? Why do we prefer it over natural wood? It is a manufactured type of wood which is made from thin sheets of timber peeled from the logs in a continuous roll or sliced thinly from the log in a vertical chopping manner. It is then cut into sheets and glued in layers with the grain laid in alternate directions. We prefer it over natural wood because it is stronger and less likely to warp and split. Also it is relatively cheap, it comes in broad sheets and a range of thickness and finally it has greater flexibility than natural timber.
- 8. What is particleboard? How is it made? Which advantages has it got over solid wood? It is a kind of board made by bonding together small flakes of wood (offcuts and faulty wood considered too poor in quality to mill) with synthetic adhesive under heat and hydraulic pressure. Tension and stresses that occur in solid timber due to changes in temperature and moisture content are eliminated. It doesn't twist, warp, shrink or expand as solid wood does.
- 9. What kind of particleboards are there? How are they made? There are three-

layered particleboards made up of layers of different sizes(fine particles are placed on the outside while the central core is made up of larger flakes). There are decorative chipboards, which have a layer of wood veneer, plastic laminate or thin melamine foil.

- 10. What do we call fibreboards? How are they made? What kind of fibreboards are there? Fibreboards are wood-based panels or sheets manufactured from wood fibres bonded together with synthetic resin adhesive. There are hardboards, high-density fibreboards produced from wet fibres. There are also medium boards, made in a similar manner to hardboards and medium density fibreboards, made from dried wood fibres which are bonded under heat and high pressure using urea formaldehyde resin.
- 11. Which are the properties of MDF? Why is it preferred over solid wood? It has got properties approaching the ones found in solid wood. It is light brown and it comes in a range of standard sizes and thickness. It is preferred over solid wood because it is uniform in structure, dense, and free of knots and grain pattern.
- 12. Where are medium boards used? They are used for pinboards, wall panelling and for interior panelling.
- 13. What are the main steps we take when making something of wood? First we prepare the components of the wood project to the required size, we mark them out to the intended form of the object, we cut the joints, we put the components together, we glue them up and clamp them under pressure, we clean the shavings off and finish accordingly.
- 14. In which cases do we work by hand and when with a machine when making something of wood? We work by hand when the wood is very small and when the grain is particularly difficult to work. Whereas, the modern machines are preferred when making accurate work, marking out or cutting with precision.
- 15. Why is a plane-thicknesser very useful? It dimensions accurately large work but small sections as well. It performs quick, repetitive "squaring" operations on sections of wood.
- 16. What is essential when preparing the timber for a wood project? Apart from checking for flatness it is essential to check for squareness repeatedly.
- 17. What do we have to do when preparing identical to size pieces of wood? It is preferable to copy the marked lengths from one member, rather than to re-

measure each time.

- 18. Why do we combine new and old methods on woodworking? The result is better (since marking out can only be done successfully by hand).
- 19. What does good marking out refer to or include? It refers to lines drawn on wood to depict the shape of the object to be made, in both its main dimension and detailed parts. It includes the important identification and coding of component parts.
- 20. What other surface treatments do we use on wood projects apart from veneer? We can also use melamine, paint, stain or lacquer on bare plywood and an epoxy resin coating for raw chipboard.
- 21. Why do changes take place in the volume of wood? How is the problem solved when making something of wood? Changes take place in the volume of wood because it takes up or loses moisture. We solve the problem through well-designed wood constructions.
- 22. What kind of joints can we use on solid wood frames? Which is the strongest framework configuration? They can be made using mitre, halving joints or even mortises and tenons. The strongest framework configuration is triangulated.
- 23. What minimizes wood wastage on woodworking? Wastage is minimized if we prepare the timber carefully and sand the wood surface with a belt or an orbital sander.
- 24. Which is the aim of the simplicity of contemporary carcase design? It aims at maximizing the figure of the wood, highlighting the end grain and employing an interesting joint.
- 25. What is a common type of drawer? It has got lap dovetails at the front, common dovetails at the rear and a loose, grooved, solid drawer bottom.
- 26. How do we achieve precision in drawer sliding? We achieve it by using proprietary metal glides.
- 27. How do we know a chair is properly made? It is strong enough and it looks good from all angles.
- 28. How is a frame made? We create it by simply cutting away the inner material of a panel to a marked line using a pilot hole and jigsaw or a router with a straight cutter which can be jigged up to cut through and edge trim the inner profile.
- 29. What is a carcase? It is a box held together by a range of quick and accurate

machine joints.

- 30. Why is a trial assembly of a wood project important? It would allow us to see if the parts of the project fit properly.
- 31. What do we do after having assembled the parts of the project? We have to check and make sure the project is squared up and that the sides and ends are parallel and the project has the same height throughout.
- 32. How are most tables' and stools' fastened together? They are fastened together with either dowel construction or mortise-and-tenon joints.
- 33. How different is a flush door from a lip door? A flush door fits inside the frame of the cabinet or case, whereas the lip door has a rabbet that has been cut around the inside edge of the door on three or four sides so that the door covers part of the frame of the cabinet.
- 34. Why is a paneled door preferred to a solid one? Because it warps less; only the frame can change in size, while the panel inside is free to expand or contract.
- 35. How are the joints of a drawer put together? We join the front to the sides with a rabbet joint. We then join the back to the sides using a butt or a dado joint.
- 36. What kind of drawer guides are there? There are side-block guides and runners, side guides and center guides.
- 37. Which joints of chairs cause the most trouble? The joints that cause the most trouble are the ones where the side and back seat rails meet the backfoot.
- 38. When do we use slicing when repairing chairs? We need it when a piece is completely broken off, or where the end of a part has been badly worn away.
- 39. Why do bows of chairs split? What do we have to be careful with when repairing them? They split because there is some fault in the wood which was put under pressure while being bent. We have to make sure that the grain direction of the new piece that will be put in, will match that of the bow itself.
- 40. How do we repair splits of tables? We first clean any dust, and then cut the split to a regular tapered shape. Then we glue and tap in the filling piece, which would be planed back flush when the glue has set.
- 41. Why do we use patches when repairing tables? We use them to replace unsightly knots, scars or blemishes in general.
- 42. What kind of problems have we got with drop-leaf tables? Which joints are used on them? The top of the table normally shrinks across the grain and thus

becomes narrower. So the flaps can no longer hang vertically but are pushed outwards slightly by the underframe. The joints mostly used on such tables are the rule joint, the knuckle joint and the finger joint.

- 43. Why do flaps of tables get sloppy? They do because the holes of the hinges wear away and become too large over the years.
- 44. What are modern drawer bottoms made of? Is it worth repairing them when they have problems? They are made of plywood or hardboard and it is cheaper to replace them rather than repair them.
- 45. What kind of problems do drawer bottoms have depending on whether they come in one or two pieces? If they come in two pieces they normally don't meet at the joint. If the bottom is one piece it normally splits.
- 46. What is characteristic about Thonet furniture? Thonet chairs have cane seats and back rests made of rattan.
- 47. The continuous renewal of cane seats of Thonet furniture is a problem. How is it solved? Spare seat frames are available through the Thonet catalogue.
- 48. What is the best treatment for woodworm? We have to have the infected furniture disinfected in a special chamber which is heated to 60-70 C. The high temperature kills every organism but does not affect the wood.
- 49. What are we careful with when dismantling Thonet furniture? And what when restoring it? When dismantling it, we avoid mixing up the components with parts of other pieces of furniture. We could also mark the pieces during disassembly so that they can be replaced just as they were. When restoring it we have to make sure the damaged part will be replaced by a piece that is cut from a piece of beech wood with corresponding cross section.
- 50. How was furniture finished in the 18th century, in the 1930s, in the 60s and how is it finished now? Which tools are used? In the 18th century they used spirit varnishes and at the end of it wax polishes and linseed oil coloured with pigment. In the 1930s and in the 60s they used cellulose lacquer and nowadays we use synthetic lacquers. The tools used are a powered orbital sander, a powered spray gun, a cabinet scraper and a selection of wire and bristle brushes.
- 51. What is the right order of doing things when re-upholstering? We start from the back and front rails and then work on the sides. We also work from the center

out towards the sides.

- 52. What do we have to be careful with when the upholstery is too taut or not taut enough? If the upholstery is too taut we have to make sure the materials will not split away from the tacks and from the frame, whereas if the upholstery is not taut enough we have to make sure that it will not sag.
- 53. What is "taking down" when re-upholstering? Which tools are used? "Taking down" means that you cut and haul away as much worn upholstery as possible and clean the frame of tacked materials. We use a ripping chisel and a mallet to do so.

MINI PROJECTS

- 1. Create a mini English-Greek or Greek-English dictionary with words useful to students of a Wood Technology and Furniture Design Department.
- 2. Find English books in the library with subjects concerning wood technology and furniture, that are of interest to you, and translate bits of them (10 to 20 pages). Give the translation to your teacher to check them for you and point out any possible mistakes.
- Surf through the internet and look for respective departments of Wood Technology and Furniture Design in any other countries and their Curriculum. Compare it to yours.
- 4. Make drawings of different hand tools, power tools, of different kind of joints and types of grooves and name them.
- 5. Find more information about subjects mentioned in the book.
- 6. Make a list of all the hand tools or power tools that you know.
- 7. Draw a piece of furniture and name its parts in English. Ask for help if you need any.

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