Complete Recorder Care Ver. 4

Author: Dr. Brian Blood

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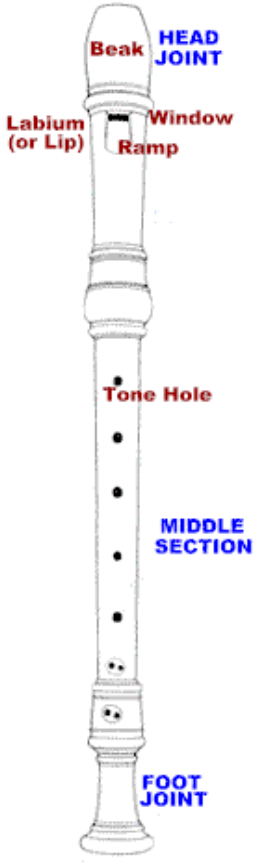
NAMING THE PARTS OF YOUR RECORDER

We reproduce with permission, from Lee Collins'excellent web site,his diagram describing common terms used to identify the parts of the recorder referred to on this and many other recorder sites. You should be aware, however, that some writers use other words corresponding to the parts listed on the left; in particular

recorder = blockflute = fipple flute = English flute = flauto dolce = flûte douce

bell section = end joint = end section = foot section = bottom section



tone hole = finger hole = ventage (c.f. Shakespeare "Hamlet")

labium = lip = edge = wind-cutter = fipple (?) - there is some doubt whether the **fipple** should be the labium or the block

head joint = mouthpiece (for some only the beak is the mouthpiece) **= top section = head section**

Other terms not shown on this diagram include:

thumbhole : the single hole on the back of the recorder

windway : the channel, rectangular in cross-section, that carries air from the mouth to the window - from left to right, the windway can be flat or curved

block = plug = fipple (?) : the removable stopper at the top of the recorder - there is some doubt whether the **fipple** should be the block or the labium

ramp : the upper surface of the labium

trousers or **candle flame** : the underside of the labium

tenon : the cork- or thread-lined part of the middle section that fits into the head and foot joint **sockets**

shoulder : point where the middle section drops down to form the tenon

lapping : the cork or thread that acts as a seal between tenon and socket

double holes : the two pairs of holes, one at the bottom of the middle, the other on the foot section

chamfer : one of two bevels each found on the window side of the windway ceiling and on the window end of the block platform, set approximately 45 degrees to the vertical and approximately 90 degrees to one another

naming the tone holes :

the tone holes are numbered, from the mouthpiece to the bell, as follows
0 1 2 3 4 5 6a 6b 7a 7b where

0 means thumb of left hand;
1 means index finger of left hand;
2 means middle finger of left hand;
3 means ring finger of left hand;
4 means index finger of right hand;
5 means middle finger of right hand;
6 means ring finger of right hand;
7 means little finger of right hand.

When a hole is covered the number is given; when uncovered the number is omitted; when 'pinching' the thumbhole, **0** is shown as an **X**; when leaking from a hole the number is struck through, as **6 plus -.** The numbering system assumes the player uses the left hand uppermost - i.e. left hand above the right - so that **7a** is covered for bottom F# (C# on C instruments) and **6a** in covered for G# (D# on C instruments).

ASSEMBLING YOUR RECORDER

When putting your recorder together, check that the cork joint is not too tight nor that it squeaks as you rotate the tenon within the socket. If the joint is tight or squeaks, apply a very small amount of cork grease to lubricate the cork. Lubrication also reduces cork seal wear.

We recommend unscented lanolin or light paraffin grease, both sold as skin-care products.

If your recorder is fitted with an O-ring, apply a little grease to the ring to protect it from wear as the recorder is assembled and disassembled. If the joint lapping is of waxed thread, apply a small amount of candle wax or soft beeswax to lubricate the thread to socket contact. Remember that the oil, grease or wax is used to prevent excessive wear of the joint seals - this preserves the seals and means you will not have to have the corks or O-ring replaced nor the thread rewound too often. If the joint becomes loose, you can either bulk up a cork joint with a small amount of sellotape wound round over the cork or use a few strands of waxed dental floss to tighten up a loose thread lapping. These are not so much attractive as effective.

If grease builds up on and around the cork, rather than easing disassembly, the sections may become difficult to take apart. Using a de-greasing agent, wipe off all surplus grease, and after allowing the degreasing agent to evaporate, apply a small amount of new grease.

ALLERGIC TO YOUR RECORDER?

Contact with cocobolo wood (Dalbergia retursa) has been recognized as a cause of eczematoid contact dermatitis (like poison oak). This has been proved by patch testing either to shavings or to sawdust. It turns out that several woods contain allergens including such compounds as quinones, stilbenes, phenols and terpenes which cause this reaction. Fairly common offenders are Bolivian rosewood, Peruvian rosewood and Cocobolo wood. Other woods involved include zericote, pao ferro, becote, macassar ebony and padauk. Some of the offending compounds have been identified; e.g. R-3,4-dimethoxydalbergione (in pao ferro), obtusaquinone (in cocobolo wood) and macassar quinone (in macassar ebony).

Adding a vehicle for the allergen such as oil or petrolatum will increase its effectiveness.

Some individuals have been noted to have been inadvertantly sensitized as children while playing recorders made of the offending woods. One woman was reported as having been sensitized after having worn a wooden necklace made from Cocobolo wood and Brazian and East Indian rosewood.

Some reactions have been rather severe producing a generalized erythroderma, but none has caused death.

The only known treatment involves avoiding contact with the offending timber.

Owners of wooden recorders should be aware that, if they experience an allergic reaction to their instrument, makers will replace the offending item with an instrument of equivalent quality but made of an alternative specie. Some woods, for example satinwood and boxwood, have no history of causing such problems when in their finished form. Other woods, in particular highly decorative members of the Dalbergia species (i.e. commonly called rosewoods), do occasionally cause owner's problems, for example, blistering of the lips, tenderness of the gums and reddness of regions in contact with the instrument like the chin.

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BEFORE PLAYING YOUR RECORDER

The playing-in regime set out below minimises the stresses on your instrument in the early stages of use. During the first two weeks avoid the highest notes - this reduces 'wetting' of the windway and labium. Before playing, warm the head by wrapping it in thick towelling and placing it next to awarm (not hot!) hot-water bottle in a bag or case for 10-15 minutes.

Note: the head should be inside the towelling - the hot water bottle outside the towelling.

Moisture in your breath will condense less if the windway surfaces are warm. Blowing into a recorder to warm the head is self-defeating! A warm recorder takes less time to play to the correct pitch, a change caused by the increase in the velocity of sound in air as its temperature increases. Cold recorders should be slightly flat otherwise, when warmed, the recorder will be too sharp. Under concert conditions particularly if the presence of lights, human bodies and heating, raises the ambient temperature, the problem is made worse by the fact that in such a situation the pitch of any early keyboard instrument will drop.

FOR HOW LONG CAN YOU PLAY YOUR RECORDER?

If you need to play regularly for more than 40-60 minutes on solo repertoire then we strongly recommend having a good second instrument to hand in order to avoid overuse. Heavy use of any wooden recorder leads to its steady and irreversible deterioration. The most important thing to avoid is 'water logging' where the recorder is still wet from the previous period of playing when you come back the next day, or later the same day, to play again. It is very important that the recorder has dried out completely between periods of use. The best way to dry a recorder is first to remove any excess surface water with a cleaning cloth or mop, second to leave it away from animals, children, etc. preferably in its case (left open) or on a stand, where further water may be lost to the surrounding air, and finally, third, to close the case only when its internal surfaces are dry. Never force dry the recorder using hairdryers or warm air fans, nor place the instrument is overly hot surroundings (for instance, drying rooms, airing cupboards, overheated spaces). The best temperature for the recorder is that in which you would feel comfortable if you had to spend several hours there.

PLAYING-IN YOUR RECORDER

This advice is directed solely to owners and players of wooden recorders. Plastic recorder do not have to be 'played-in'. If you treat a new wooden recorder properly it will give you decades of faithful service. Most recorders lose their tone through 'overplaying'. Re-voicing can rescue it but each time this is done the instrument's overall length of life is shortened. Follow the programme below and give your instrument the best start in life:

during the first two weeks (1 & 2) play up to 10 minutes each day.

during the second two weeks (3 & 4) increase to 20 minutes per day.

during the third two weeks (5 & 6) increase to 30 minutes per day.

during the fourth two weeks (7 & 8) increase to 40 minutes per day.

If, after this, you need to play your instrument heavily (say for more than 40-60 minutes at a time) seriously consider having a second instrument to share the work load. A Dolmetsch Nova plastic would be a good choice.

LOOKING AFTER YOUR RECORDER

As we mentioned on the introductory page, let your recorder dry out completely between periods of use, whether following the playing-in period or afterwards during normal use. On instruments with reeds, when the reed wears out through over use, you throw the old reed away and fit a new one - a matter of only a few pounds or dollars. When the 'reed' of the recorder wears out, you have to throw the whole recorder way or have a new head section made by the original maker and this is a far greater financial burden.

The best recorders, those commonly called 'handmade', are designed to last fifty years or more, producing the most beautiful tone year after year with only the most careful servicing every few years to keep the inner surfaces clean and polished. It is true that investing in an expensive 'top quality' recorder is like taking on the cares and worries of a parent - will my 'child' grow up to be fair of face, graceful of character, long of life? Just as we learn to be good parents to real children so we must learn with similar humility to understand what it means to be the good 'parent' to our recorder.

Never be shy about asking the advice of recorder makers who, despite the comments of players and dealers, really do know more about recorders than most players or recorder dealers. It is easy enough to get impartial advice from someone who knows relatively little - such people have not learned enough to have strong opinions about anything - a better route is to seek out the distinctly partial advice of someone who lays his or her skills out to public gaze and trial every time a new recorder is created, listen to what is said and then test it against your own experience and against your own intelligence.

AFTER REPAIR OR EXTENDED PERIODS OF NON-USE

A common question asked by recorder players is 'should the playing-in program be followed again after re-voicing or after a long period of recorder non-use'. In the former case, where a recorder has been re-voiced, you need not follow the playing-in period again. In the latter case, where a recorder has lain unused for a year or more, we recommend following the playing-in procedure as the recorder is brought back into regular use.

The wood that forms the instrument may have become rather dry and will tend initially to absorb large amounts of water leading to wood cell swelling. If, when the instrument is put aside after use, the cells lose water too quickly, there is a real danger of cracking or splitting. This risk tends to be greatest in the head joint where the additional pressure exerted by a swollen block creates extra stresses on the head sleeve around the block.

Some recorders are designed to partially eject their blocks when the pressures are excessive.

Do not try to force the block back into the instrument until the instrument is dry again and then with the greatest care. If the performance does not seem to have suffered with the block slightly protruding then we recommend leaving it alone and have your repairman reset it when you return it for a clean or general service.

YOUR RECORDER MAKER IS THERE TO HELP YOU

Many would have you believe that recorder making is easy. In fact it is very difficult. Recorder makers may not always get everything right, but they still have a deeper understanding of the problems recorders have, and when a troublesome instrument needs repair or servicing, and in most cases they are happy to give lots of advice at little or no cost to the enquirer. Many makers will accept instruments sent for repair on the understanding that if nothing can be done, the instrument will be returned with the only cost to the owner being the return postage and packing. Ask your repairman or maker whether that is his or her policy before sending the instrument through the post. You may wish to read about the symptoms that indicate that your recorder may need professional servicing. This will be found at the end of this Guide.

DON'T LEAVE THINGS TO THE LAST MINUTE

The 'playing-in' advice above is not an option - it is a very important part of preparing a wooden recorder for a lifetime of reliable use. Clearly, it is most important that you leave plenty of time between the purchase of a new recorder and its use in concerts, examinations or important events for which you will want to spend a lot of time preparing repertoire. For similar reasons, leave plenty of time between an important performance and having your recorder serviced or repaired. It is not fair to the instrument, nor indeed, to the maker, to call him up and say 'a repair needs to be done in a hurry'. In most cases, the maker can only work on a thoroughly dry instrument and it may take several days before the internal surfaces are dry enough to work on. The maker will then want to test the instrument for many hours, put it aside to dry again, before re-testing it. This is the only way he or she can confirm the behaviour of the instrument under realistic conditions, the very same conditions that you will want the instrument to soar through without a glitch. Be serious about your instrument and it will treat you well. If you ignore warning signs, leave things late, you are asking for endless trouble and little time for even the most conscientious maker to restore your recorder to 'top flight' condition.

HOW LONG SHOULD YOUR RECORDER LAST?

A top quality, hand made recorder will last your lifetime - but only if you take good care of it. A more modest instrument, particularly made in a soft wood like pear wood or maple, may not last more than a few years. An application of a light oil (walnut or almond oil are particularly suitable), once a month at the most, will prevent the recorder losing it's good looks.

We have prepared a section on oiling your recorder below. You do not need to apply oil to the bore of Dolmetsch recorders (except those made of European boxwood or stained fruit wood) or to instruments, of whatever manufacture, impregnated with paraffin wax. Applied to the exterior surface, oil, once dry and polished, lends lustre.

Keep oil and grease away from the inner windway surfaces, the plug and the ceiling - it increase the size of moisture droplets and exacerbates condensation problems. A little grease on the corks prevents them drying out, wearing down or cracking. Too much grease, however, attracts dirt, which may cause binding, or may even release the cork from the glue used by the maker to attach it to the middle section tenons.

HAVE YOUR RECORDER SERVICED REGULARLY

On earlier pages of this section we have said a little about not 'overplaying' your recorder and about having the recorder serviced every few years by the maker, if at all possible, or by a repairman recommended by your instrument's maker, as an alternative.

In the case of Dolmetsch handmade recorders we strongly advise returning the instrument to us. We give some advice below about sending instruments through the post.

If you live outside the EC we may be able to recommend a more local repairman for non-voicing and tuning repairs. These two areas are always best carried out by the maker.

CLEANING AND DISINFECTING YOUR RECORDER

We are often asked whether recorders need cleaning or, if they are being shared, they need disinfecting. The answer depends on the material of construction.

If your recorder is made of plastic then a soak in a mild detergent will clean the external and internal surfaces. If you want to disinfect the mouthpiece avoid using powerful disinfectants that can attack (etch away) the smooth surfaces inside the windway. We recommend using sterilising solutions used for baby's feeding bottles which are effective but will not damage your recorder even after repeated application.

Wooden recorders should never be soaked in water. Wipe the outside surface with a cloth containing detergent, to clean the instrument, or soaked in a mild sterilising solution to disinfect the outside surface. Neat Listerine is also effective on wooden instruments but should not be used on plastic recorders.

To clean or disinfect the windway drop a small amount of neat detergent or neat Listerine down the windway, leave for an hour or so, and then flush out with clean warm water applied with a dropper. Repeat the flushing-out until the instrument no longer tastes of detergent or disinfectant. Anti-condensation solutions are made of detergent and water. After flushing-out let the recorder dry completely before playing it again.

Sometimes recorders become infected with mildew. If this happens keep your instrument out of its case so that it can completely dry between periods of use. This should reduce mildew growth. Mildew can be romoved by swabbing the affected areas with hydrogen peroxide and letting it stand for five to ten minutes. The recorder can then be cleaned using a swab and lukewarm water. Apple cider vinegar or white wine vinegar, if applied and rinsed off the wood, should prevent its reappearance .

ANTI-CONDENSATION LIQUIDS AND YOUR RECORDER

As we mentioned above, anti-condensation liquids are really no more than weak detergents in water. They are useful when a recorder tends to clog a lot but their use only postpones the need to return your recorder to a good repairman or to the original maker where the instrument can be properly cleaned and the windway surfaces re-polished.

Many condensation problems are made worse because the windway ceiling has dropped or the plug has risen. A good repairman or maker will reset either or both and so return the instrument to its original state.

Generally, we do not recommend the owner try to service the windway of a recorder unless he or she has received thorough training from the hands of an experienced craftsman.

THE DEALER VERSUS THE MAKER

A matter that causes us some concern is the dealer who promotes his or her business by saying that 'every recorder re-voiced or re-tuned before it is sold'; in other words, what you are buying is a recorder that meets the taste of the dealer rather than the taste of the maker. Quite apart from the dishonesty of selling an instrument bearing a maker's mark that is not the instrument the maker made, this proposition may appear, at first glance, an attractive one. You have the ideas and opinions of both the maker and the dealer - two for the price of one. Unfortunately, this is not the case. You have only the taste of the dealer and, what is more, you will probably find the original maker unwilling to maintain an instrument that has been 'altered' in this way, notwithstanding the maker's guarantee. Of course, you can always go back to the dealer to have any later problems taken care of, but our view is that the maker is likely to feel a much greater obligation towards an instrument bearing his or her name than a dealer who, in the role of maker, has a name that may mean little or nothing.

If you have any doubts about the service your dealer will give you, consider purchasing over the Internet from the maker. This is an increasingly common event and most makers will be happy to make the exercise painless and, from your point of view, risk free. Obviously, it is important that you work with a maker on the basis that you are seriously looking for an instrument in the price range and to the quality that the maker can supply. It may be nice to look at as much stock as you can but most makers carry quite small stock and they are happier being left to choose the best instrument they have available at the time. In any case, always make sure the maker agrees to take the instrument back if it displeases you. Even if the instrument was made to special order, most 'sale of goods' regulations require that there be an approval period and that if the instrument fails to please, the purchaser can return the instrument for a full refund of the instrument's price. However, most makers will expect you to meet the cost of post and packing in both directions.

WHY OIL YOUR RECORDER?

Plastic recorders never need oiling but recorders made of wood which do not have some form of preservative or sealant applied to the inside or outside surfaces of the instrument will generally need to be treated with a good well-drying oil either to repel water from delicate parts of the instrument, parts where repeated swelling and shrinking as water is taken up and then lost from the wood will produce warping or, in severe cases, cracking, or as a way of reducing the bulk uptake of water which if unrelieved induces rotting (more is said about this below).

A third reason for applying a good well-drying oil in particular to the inner acoustic bore (that is the bore below the inside surface of the block - the surface normal to the major axis of the instrument) is to make the inner bore surface hard and smooth so that the instrument loses less mechanical energy into the walls of the recorder when it is being played which in turn lets more energy radiate from the instrument via the window, open tone holes and bore end.

Dry wood tends to have a spongy surface texture due to deterioration of the surface structure which is a better absorber of energy than a smooth, harder surface such as that of a dense hard timber like grenadilla, a wood impregnated with paraffin wax or a wood with a strong surface coating of varnish or well dried oil. In other words, oiling the bore and letting the oil dry to a smooth hardness will help your recorder produce a stronger tone.

Dense hardwoods like grenadilla generally require very little additional oil, but porous woods like boxwood and even softer fruit-woods like cherry or pear as well as the ubiquitous maple, if not

already treated in some other way (see below for further comments on this), will benefit from a regular treatment of the inside of the acoustic bore with a good well-drying oil.

WATER AND YOUR RECORDER

Wooden recorders must be acclimatised to the shocks that accompany performance. In particular, the windway area (the plug or block, the windway ceiling and the sharp edge, called the **labium**) takes up and loses moisture as the recorder is played and put aside. Unprotected wood swells or, if prevented from swelling, exerts a greater force on whatever constrains it (for example, the head sleeve that surrounds the block or plug) as it absorbs water.

One can reduce its ability to take up water in three ways - the wood can be impregnated with paraffin wax during manufacture (liquid paraffin is forced under pressure into dried wooden billets), the wood can be treated with water-repelling (hydrophobic) oil or the surface can be coated with a impervious layer of varnish or lacquer.

If water lies on the surface of the windway, where it tends to form small droplets, it will impede the flow of air and induce turbulence. This results in a marked deterioration in the instrument's tone quality. For this reason, and despite the mechanical advantages, impregnation of the plug or block should be avoided in all but the most basic models. Impregnation of the head sleeve will cause similar problems with the windway ceiling.

With the highest quality models, those which are not impregnated with paraffin wax, water is taken up by the block, by the other windway surfaces and by the internal bore, but the makers will treat the bore with varnish or oil and will recommend further post-purchase treatment of the bore with a mineral or vegetable oil.

This will preserve the inner surfaces of the instrument as well as strengthening the tone, particularly if the oil can 'dry' or harden to a high finish.

WHICH OIL CAN YOU USE?

We recommend a light mineral oil for most instruments. Vegetable oils (makers often recommend oils derived from nuts or seed kernels - one particular favourite with flautists is rapeseed) tend to go rancid (the addition of an antioxidant like vitamin E will prevent this) or, in particular with peanut oil, can cause serious, even fatal, allergic reactions.

Note : Never use peanut oil.

The traditional instrument makers oil, raw linseed oil, remains sticky for several months after application and should be used sparingly and, then, never on instruments that have been previously impregnated with paraffin wax or treated with surface lacquers such as varnish .

SHOULD YOU OIL YOUR RECORDER?

Check with your supplier about which treatment you should apply to your recorder. This will depend on how your instrument was originally made.

If you cannot contact the maker, follow the advice below.

Recorder is impregnated with paraffin wax but the outside is not varnished :

take a long length of linen or cotton, soak it in mineral oil and draw it through the instrument. You may have to draw the cloth through more than once to coat the inside evenly. Leave the section standing on its end while the oil dries, not forgetting to clean the tone holes with a cotton bud to remove any oil that may have collected there. In the head section, where you cannot draw the cloth through, just push it in with a thin length of dowel rod and rotate the head to evenly coat the bore. Keep the oil away from the block or plug and never get oil into the windway itself where it will cause you major condensation problems. It is best to leave the instrument open to the air for at least twelve hours before using the recorder again. If you would rather use almond oil this is fine - almond oil dries quickly. In this case, linseed oil is not generally recommended as it tends to remain sticky, is more prone to build up in the tone holes and does not fully dry.

Recorder is impregnated with paraffin wax - the outside is varnished :

follow the advice above but do not apply any oil to the outside surface of the recorder.

Recorder is not impregnated and the bore is not varnished :

apply a light oil every four to six weeks lightly to the bore and also to the outside surface of the instrument - avoid getting oil into the tone holes or onto the block or into the windway - oil may be applied to the labium. Linseed oil can be used but it must be raw and the instrument must be put aside until the oil has completely dried - this may take several days or even weeks. Lighter oils (mineral or walnut) are to be strongly recommended because they dry more quickly.

Recorder is not impregnated and the bore is varnished :

apply oil only to the outside of your recorder and then probably no more often than three times a year - you can use linseed oil although it may travel through the wood and cause the varnish on the bore to lift away from the wood - for this reason, we recommend a lighter oil and suggest that you use it sparingly.

Recorder is not impregnated but the bore and outer surfaces are varnished :

never apply any oil to such instruments as it will cause the varnish to peal away from the wood. If the varnish becomes damaged we recommend sending the instrument back to the maker for re-varnishing.

Recorder is not impregnated, the bore is unvarnished but the outside surface is varnished :

only oil the bore and then only sparingly. If the varnish lifts or peals we recommend having the instrument 'stripped' and a matt finish of teak oil applied in place of the varnish. Not only does it look better but it also feels better under the fingers.

Recorder is plastic :

never oil plastic recorders.

CAN YOU FIX THE PROBLEM YOURSELF?

We have prepared an appendix on the symptoms that suggest that your recorder may need professional servicing. There are certain repairs that are always best left to the maker - re-voicing and tuning, in particular, are not areas into which you go unless you have been trained in instrument making or repair. The maker has tooling that will make the task much easier for him or her than for you. In addition, recorder makers know what not to do; he, or she, will avoid strategies that lead to irreversible damage to the instrument. This is why any serious musical instrument repairer reserves the right not to work on an instrument - in our case, we will return such an instrument to you at our expense or offer you a generous part exchange deal on a new replacement instrument.

RECORDER SERVICING

We expect to service your recorder every two or three years if use is heavy - every five years if use is light. If you believe there is a problem with your instrument but you don't know quite what it is, first contact us. Our details are given later in this guide.

We service a wide range of recorders made by other makers - we provide this service for many leading musical instrument retailers in the UK If we believe the work would be better done by the original maker, and where that is still possible, we would tell you so.

Dolmetsch is the world's most experienced recorder repairer. We have been making recorders since 1919 and repairing them even before that.

RE-VOICING

Re-voicing entails removing and cleaning the block and other windway surfaces and resetting the windway dimensions to the positions where they were when the recorder was made. We use chisels, knives and abrasive papers to re-cut and sharpen surface details, disinfectant and degreasing agents and detergents. In this way, the windway surfaces are 'renewed' and you would expect to get back a rejuvenated instrument.

RE-TUNING

Re-boring is the best way to correct tuning problems that are the result of bore shrinkage. This is the most common reason for tuning problems. Only the original maker's reamers can perform the necessary magic. To correct the problem by undercutting or filling holes with wax or glue may prevent the possibility of using a reamer in the future. All recorders sent back to us for re-tuning are re-reamered with the same reamer as was used when the recorder was made - we have retained reamers going back as far as the 1920s when the company began making treble recorders under the direction of Arnold Dolmetsch himself. After re-boring or, if it is not possible because the recorder has distorted through warping (a common problem with older European boxwood instruments that have been allowed to dry out too much), individual holes can be adjusted to correct note-to-note intonation. If the problem is too severe we can, and on occasions do, replace the head, middle or bell section.

SLEEVING

Cracks are secured with wood or ivorine sleeves. Head cracks normally result from overplaying; for example, the swollen block has applied too much pressure to the surrounding head sleeve, or an over-wet head sleeve has dried too quickly and surface cracking has developed on the outer surfaces of the head section. Cracks at the sockets are often the result of careless handling. When taking a recorder apart, avoid lateral pressure on the sockets. Always twist the sections in the same direction or, if there joint has seized, apply gentle bending pressure around the joint - this manoeuvre usually releases stubborn joints. Leaving the recorder to dry thoroughly can also help!

GENERAL WORK

Re-corking, cleaning, re-varnishing are all part of day-to-day work we carry out on Dolmetsch and, for many of the UK's leading recorder dealers, other makes of recorder. We can also strip varnish of an old recorder to give it a matt finish with teak oil.

HOW TO PACK YOUR RECORDER SAFELY

Pack your recorder in a rigid case or box with each section wrapped individually in thin foam sheet or newspaper. This is most important - recorder keys and thumb rests may be damaged or may mark other sections.

Fill the box with paper to prevent sections moving around inside. Pad the outside of the case or box with newspaper or foam sheet to protect it too from damage. If you can use a strong cardboard box rather than the original instrument case you may be able to reduce the weight of the parcel (and thereby reduce the cost of postage) without any greater risk to the instrument. We find that some maker's cases are a lot more susceptible to damage than their instruments.

HOW TO SEND INSTRUMENTS FROM ABROAD

If you send the instrument from abroad to us please mark clearly on the outside of the package

(i) that the recorder is being **SENT FOR REPAIR** and **WILL BE RETURNED TO OWNER**

CONTACT DETAILS

Send instruments to our contact address:

Dr. Brian Blood, Dolmetsch Organisation
Jesses, Grayswood Road
Haslemere, Surrey GU27 2BS

telephone from within UK:	01428 651473
telephone from outside UK:	+44 1428 651473
e-mail address:	brian@dolmetsch.com

Instruments sent to us by post are done so at your own risk. You should insured them.

All the most up to date information and advice you might require is available on our web site:

http://www.dolmetsch.com

APPENDIX ONE

SYMPTOMS AND SOLUTIONS - DOES YOUR RECORDER NEED SERVICING

It is too easy to find fault with the recorder when it may very well lie with the player. You might answer this by saying that as a recorder maker, I would say that. In fact, I am a player **and** a maker and, after forty years in these fields, I know that most players have a 'love-hate' relationship with their instruments, whether they play recorders, flutes or violins, and whether the instruments are inexpensive or of a professional quality.

Good makers are happy to have their instruments back for servicing where there are real problems. In this article, I identify the source of the most common problems you might have with your recorder. After reading this article you should understand your instrument a little better and should gain the confidence you need to distinguish between problems arising from the player and those arising from the instrument.

A. Voicing Problems

1. Weak Bottom Notes

There are a number of reasons why the bottom note or notes might be weak on your recorder.

a. **The recorder windway is blocked**
solution: hold the window to your lips; blow sharply into the window directing the air into the bore; this will clear any blockage from the windway.

b. **There is a crack in the head or foot joint socket**
solution: check that there is no crack in either socket.

c. **There are unfilled thumb rest screw holes on the back of the middle section**
solution: check the back of the recorder for old unfilled holes - if there is a thumb rest fitted to the recorder check that there are no unfilled screw holes, survivors from an earlier attachment, under the back plate of the rest.

d. **The cork seal between the bottom and middle section leaks**
solution: if the joint is loose have the cork replaced.

e. **The key pads on the bottom holes need replacing**
solution: If the bottom hole key pads leak the bottom notes will sound weak. Ask a friend to press on the bottom keys to seal the holes more completely - if this improves things then the problem is clear - you will need to replace or reset the pads.

f. **You are not covering all the holes**
solution: this is a common problem particularly when you are a beginner. The slightest leak from any hole on the recorder will prevent the lowest notes speaking clearly. Again, ask a friend to check that all your fingers completely cover the holes - if you have no friend available just now, play in front of a large mirror.

g. **Paetzold large square bass recorders**
solution: poor bottom notes on these instruments can occur if the sections are not firmly pushed together while tightening the wing nuts. If the seals are damaged go back to Paetzold or their local agent for replacements.

h. **The recorder is improperly voiced**
solution: have the recorder re-voiced.

There is no reason why a mechanically sound, properly voiced recorder should not produce clear bottom notes. Some recorders do not like to be tongued aggressively on the lower register tending to jump up to the second octave or to squeak. In that situation you will need to reduce your breath pressure and tonguing strength.

2. Poor Or Non-Speaking High Notes

Difficulties with high notes must be **the** most common problem experienced by recorder players. If you have just acquired a new instrument, be patient - don't assume that the way your previous instrument worked is the way this instrument must work. Of course, you should have taken a little time testing the instrument before parting with your money - if you purchase from Dolmetsch, any recorder is sent 'on approval'. If you can't get used to it, just send it back. Any good dealer should offer a similar service - all serious recorder dealers will let you try the recorder before you purchase it, even if you had to place a monetary deposit on it, and the instrument was a special order.

a. **The recorder windway is blocked**
solution: hold the window to your lips; blow sharply into the window directing the air into the bore; this will clear any blockage from the windway.

b. **Your thumbnail is too long or short**
solution: the thumbnail should not extend more than 0.5 millimetres beyond the top of the flesh of the thumb - nor should it be shorter than the top of the flesh of the thumb. If the nail is too long, trim it. If it is too short, do not worry, it will grow. For a recorder player the left hand thumbnail is a vital tool for producing secure, in tune high notes. Some players do not use the nail but in the experience of this writer and of many recorder teachers the best high note technique uses a correctly maintained thumbnail.

c. **You are not using your thumb correctly**
solution: some older tutor books called the 'pinching' position of the thumb playing high notes, half-holing. This is a misnomer. You want to aim to have the 'vent' opened when the thumb is pinched as small as possible, taking care not to close it by accident. Most players, and most recorders, produce easier high notes, the smaller the 'vent'. Even when the 'vent' size is correct, some players find high notes difficult because either their breath or tonguing pressures are wrong, or the recorder needs re-voicing. Advice on these matters is given below.

d. **You are not using the correct breath pressure or tonguing properly**
solution: on most well maintained recorders the only really difficult note is top F or, on a C instrument, top C. The notes one tone above and a semitone below are in comparison much easier. For most of us, learning to produce secure top F (top C) is a matter of getting to know what your recorder needs, and summoning up the courage to play that way each and every time. If you tongue the note one semitone below, and then slur up the top F (top C) you will be able to judge how much air is required to produce and maintain an in tune top F (top C). Once you have

discovered the correct breath pressure and can deliver this pressure every time (i.e. Securely slurring the two notes in succession), you are ready to try tonguing the two notes in succession. Don't worry if it doesn't work the first time you try tonguing. Return to the slurred exercise, get that right, and then try the tongued exercise again.

e. **The recorder needs re-voicing**
If you are still having problems, pass your recorder to an experienced player and ask him or her to try the same exercise for you. If they can do it, then you need not worry about the recorder. If they cannot do it then your recorder may need re-voicing. Re-voicing is a serious adjustment of the block and windway settings necessary to give your recorder back its high notes. A good repairer will tell you if the recorder is worn out before doing any work - this is something we recorder makers can judge in an instrument - in which case, Dolmetsch makes no charge and returns your instrument back to you postage free. In some circumstances it can be traded in against a new recorder with a generous discount.

High note problems are generally problems of player technique. However, if neither you nor any of the better players you know, is able to produce clear high notes on this instrument, send it off to a good repairman. When a recorder needs re-voicing, it is problems with high notes as well as weakness at the bottom that are commonly the first symptoms

B. Tuning Problems

First let me say a little about the use of electronic tuning meters. Recorder makers use them, so don’t be shy about using them yourself. You do need, however, to understand what a meter can tell you and what it cannot. No recorder 'plays in tune'. It is the player who 'plays it in tune'. On every note on the recorder, blowing harder sharpens the pitch and blowing softer flattens the pitch. Small recorders, sopraninos and descants (sopranos), are much more sensitive to this problem than larger instruments like tenors and basses. Most makers, if they use meters at all, are concerned to set the fundamental note, the note produced with all fingers down on the instrument. The bottom note is the least flexible with respect to blowing pressure and, for this reason, the maker sets it as carefully as he can. After that, the approach divides between those who religiously check every note against the meter and those who rely on their 'ears'.

The relationship between notes is highly subjective and will depend on the context of the note in the harmony of the moment. Some individuals hear intervals as they might be set on a piano (equal temperament) while others, particularly string players, are more comfortable with 'mean' or 'just' intonation which, while richer, demands greater flexibility and skill from the player. A good maker gives the player the possibility of exploiting this flexibility and so what is important is not that the recorder 'is in tune' but that it can be 'played in tune' without great changes in fingering or breath pressure.

This subtlety can be lost on even very experienced professional players, so beware! You should be able to blow a note below and above the zero point on the meter - in the upper octave some adjustment of the size of the thumbhole opening produced by 'pinching' the thumb may be necessary because it too has an effect on tuning. If the flexibility is there then the control of the intonation, choosing the correct breath pressure, fingering and, in the case of the upper register, the thumbhole position is up or down to you. So, as you will now understand, an electronic meter tells you more about your playing than about the recorder.

When you buy a new recorder always check that the fundamental (the lowest note the recorder will play - the note with all holes covered) can be played in tune to a meter. When the recorder is completely cold it should actually play slightly flat but when very warm it will play slightly sharp. Most recorder players adjust for sharpening as the recorder warms up by pulling the middle section tenon out of the head section socket by no more than 0.5 mm. This extension flattens the

lower octave while having a relatively small effect on the upper register. The greater the extension, the more the two octaves move apart, making the instrument increasingly more difficult to play in tune on itself. If your recorder is seriously flat then the other recorders with which you are playing should flatten their pitch down to yours because you cannot shorten your instrument to bring it up to their pitch. Generally, however, new recorders should be made to a=440 Hz, if designated 'modern pitch' or made to a=415 Hz if designated 'baroque or low pitch'. There are a number of specialist pitches used by professionals and for renaissance repertoire but these need not concern us here.

The fundamental is one of the least flexible notes on the recorder, one which is relatively difficult to blow up or down in pitch. If you blow harder the note tends to squeak or jump to the next octave; if you blow too weakly the note sounds starved. Because all the fingers are down, there is no alternative fingering; this note must be naturally 'to pitch' from the start. We are going to assume therefore that your recorder is 'in tune' after about 15 minutes of playing and that whatever tuning problems you are having relate to odd individual notes elsewhere on the instrument. We discuss F recorders below: the equivalent fingerings on C recorders may need similar adjustment.

I would like to make one last comment about tuning flaws on larger recorders. The bores of tenor, bass and even larger instruments are wide enough so that extraneous items can wedge themselves inside the instrument - grease pots, cleaning mops and fingering charts are all known culprits and make the instrument, if it produces any note at all, seem out of tune. It will save you a lot of embarrassment and wasted time if you check that the recorder's bore is free of any obstruction.

There is a second problems particularly with plastic recorders. If the grease provided with the instrument is applied too generously to the joints it may get into some of the finger holes where it can effect the tuning of individual notes.

The main problem with joint grease is that it tends to be translucent so can be quite difficult to spot when it lies in the smaller double finger holes.

1. Some Notes Are Sharp

By their very nature recorders are a mass of compromises and you are likely to find some notes sharper and others flatter than you need to tune a chord or match the pitch of an accompanying instrument. Recorder players expect to adjust fingerings to make small changes in tuning whenever necessary and it is no sign that your recorder is less good than another just because you have to do this.

Most tuning problems can be solved by a slight modification in blowing pressure - blow harder and you will sharpen the pitch. On F recorders particular notes can be sharper than you would wish. For example, bottom B natural may need the addition of one of the half holes on hole 7 (numbering, from thumb to right hand little finger, 0 123 4567), and bottom C sharp the addition of one of the half holes on hole 6.

Cross fingerings, those where a hole is open above one or more closed holes, tend to have a weaker tone than surrounding non-cross fingered notes and tend also to require some small tuning adjustment. On some F recorders top G needs one or both half holes not to sound sharp. Again, top E flat may be played x 12 45 or x 12 456 depending on the exact tuning you require, while middle E flat may be better as 123 456 or 23 456 depending on your instrument and again on the exact tuning you require. x means the thumbhole is pinched.

Never be afraid to experiment with additional fingers placed on the recorder to compensate for sharp standard fingerings. Remember that if you want to play well in tune you will have to vary the exact pitch of particular notes to 'sweeten' chords. For example, major thirds should be

narrowed by flattening the third, while minor thirds need to be widened by sharpening the third. In the eighteenth century, players published sets of enharmonic fingering where E flat and D sharp were fingered slightly differently to make the former slightly sharper and the latter slightly flatter.

On equi-tempered instruments (keyboard instruments in particular) we set the two notes to be identical but this is only true when the scale is divided so that the ratio of the frequencies of successive notes in a chromatic scale is constant through the scale. That constant is the twelfth root of two. If you multiply the twelfth root of two by itself twelve times you get two which is the ratio of the frequencies of two notes, one octave apart, the high over the lower.

This having been said, it is possible for sharpness in certain parts of the instrument, e.g. sharpness of the higher notes relative to the lower notes, to be the result of bore shrinkage. Here only the re-reamering of the bore by the original maker will cure the problem - but cure the problem it will!

2. Some Notes Are Flat

If you find notes flat on your recorder then check first that what you perceive as flatness is not the result of sharpness on other notes.

Flatness can arise for five reasons - first, there has been some bore shrinkage, which, while it may cause sharpness in the higher register, can, if it occurs in a different section of the instrument, cause flatness in the middle of the range - second, oil or some other material has entered the finger holes reducing their diameter - third, keys that should lie a certain distance from the hole surface are not opening properly - fourthly, for the highest notes the thumbhole 'vent' is not large enough - fifthly, you are using the wrong fingering for the note (check the fingering chart).

These problems can be easily identified and eliminated. It is possible, of course, that some notes are just flat under certain circumstances say when tuning a chord. If you cannot favour the pitch by blowing a little harder then you might try leaking the lowest covered finger hole or you might try an alternative fingering that is of a slightly sharper pitch, or is more sensitive to breath pressure change.

There are many reasons for using alternative fingerings, not just to make complicated passage work easier to play. We have given a whole list of alternative fingerings on this web site and recommend that you study them and, if they are helpful, use them. If, with all these suggestions, the problem remains unresolved, then send the instrument back to the maker to have the note sharpened.

3. Alternative Fingering Problems

The first thing to say about alternative fingerings is that few makers design their recorders to play in tune with any but a few of the recommended alternative fingerings. The two fingerings that need to be in tune are the alternative for E (0 23 instead of 0 1) and the alternative for middle A (123 467 instead of x 123 45). Both these are widely used for trilling and slurring.

All other alternative fingerings should be your starting point for small variations you may need to make the tuning of these note acceptable. Never forget that breath pressure is a vital ingredient in hiding tendencies to sharpness or flatness. These comments can be applied also to notes in the third octave and to multi-phonic fingerings.

Late twentieth century repertoire includes a number of works that cannot be played on just any recorder. This is not the fault of the recorder designer or recorder maker. Players are continually trying to extend the range of tone colour, effect and range and, where their own instruments will

assist them, this is a profitable way of extending the instrument's literature.

One should never assume, however, that what is proposed by a composer is an intrinsic property of the recorder itself. It may just be an accident of the instrument with which he or she has personal experience. If you are minded to carry out advanced study that requires an instrument that can perform all these special effects you must be patient in your search for a suitable instrument. So far as I am aware no recorder maker maintains a production line dedicated to the production of accidents!

C. Mechanical Problems

1. Noisy Key W ork

solution: don't buy recorders with noisy keys, time will not quieten them. However, over time, a quiet key can become a noisy key. If it is of tube and rod construction dismantle the key and put a little oil (multigrade is fine) inside the tube before reassembling the key. This will reduce the noise. If this does not work take the instrument to a wind instrument repairer who should be able to deal with the problem using more sophisticated techniques.

2. Loose Or Missing Corks

solution: buy some replacement sheet cork - remove the old cork with a sharp knife - clean off any old glue - if the cork is stiff, wet it with some water to soften it - leave the surface of the cork to become dry to the touch - cut the replacement cork to size - if the wood is impregnated give the wooden recess a coat of waterproof varnish otherwise the glue may not adhere to the wood when the new cork is reapplied - when the varnish is dry roughen it slightly with abrasive paper - give it a coat of contact adhesive and fit the new cork - wrap some thread several times around the cork to hold it is place while the glue sets - allow a full six hours - using abrasive paper, reduce the height of the cork above the middle section tenon recess until it fits into the socket of the mating section - when dry, the fit should be tight but not over tight - always apply cork grease before pushing the sections together to lubricate the cork and to make it easier to put the sections together.

3. The Plug Is Coming Out

If you cannot push the plug back in with your thumbs, you can use a small hammer - place a small wooden rod (like a short length of broom handle) laterally across the back of the plug - never strike the block directly, strike the wooden rod with enough force to drive the plug back into the head sleeve. Aim to drive the plug in with a series of small taps, do not try to drive the plug in with a single sharp blow because you can split the head that way. If you are nervous about doing this, send the head to a repairman who will be happy to do this for you.

4. Help, I Need Extra Keys

You will need to discuss your problem with a good wind-instrument maker. Dolmetsch fit a wide range of keys to all makes of recorder. We can replace single bottom keys with double keys, fit double keys where there were no keys before, fit keys to holes 3 and 4 to reduce hand strain on trebles (altos), tenors and basses, add keys with extensions to assist players with missing finger joints, fit keys to recorders to be played by players with only one working hand and fit keys to extend the range of the recorder (for example, the bell key). If you have a general problem reaching the lower holes on your tenor you might consider having your recorder adapted by the modification of the standard head section to a 'knick' system where by 'bending' the head section it is easier for a player with a shorter stretch or with problems with the articulation of the right hand wrist to play larger recorders. We have included details of this procedure on some of our recorder pages.

5. Chips And Cracks

You will have read above under reasons for weak bottom notes the problems that cracks can cause. Most cracks can be repaired by filled the crack with glue and securing the section to prevent the crack opening again. Cracks in the windway area are best dealt with by fitting a new sleeve to the head - this preserves the sound of the instrument and, if done carefully, should have no effect on the performance characteristics of the instrument. Cracks in the head or bell section sockets can be sleeved to - in the case of minor cracks, by fitting a sleeve of ivorine or wood, in the case of major cracking, by fitting a brass ring which offers superior mechanical reliability. Small chips are best left untouched. If an instrument suffers considerable damage you might discuss with your dealer or maker having the section replaced with a new one.

6. Do I Need A Thumb Rest?

First: Thumb rests are not used to hold the recorder except under the most exceptional situations; e.g.: alternative fingering where all fingers and left hand thumb are removed from the instrument - I am sure there are probably better (safer?) alternatives :-)

Second: The rest is used to ensure the right-hand returns to the exact same position on the recorder each time it is used. This makes reaching for bottom holes and/or keys much easier on larger recorders such as tenors (for most of us) and trebles (altos) (for those with small or crabbed hands). Even holding the recorder at 45 degrees (the recommended angle, by the way) a rest continues to serve the same role. If you hold the recorder even more horizontally you might be mistaken for a trumpeter or, even worse, a clarinettist.

Third: Screwing or gluing a thumb rest onto a recorder is not a problem - recorders are not virgins to be left inviolate until they know better. They are tools for making music and whatever makes this less stressful for the player should be strongly encouraged. We recommend taking a few months to get used to the placing of a thumb rest by taping the rest on with sticky tape (any brand will do but we recommend masking tape). Then, once you know the position is comfortable and practical, screw or glue the rest in the anointed place. Don't forget that if the thumb rest has to be removed or repositioned you will need to plug any tiny screw holes where these might have penetrated into the bore.

Fifth: To find the best place for the thumb rest we recommend placing the instrument on it's side on the floor. Bending over, pick it up with the fingers of the right hand on the appropriate holes used during performance and if you lift it up successfully, you will have placed the right hand thumb in the correct position on the back of the instrument.

7. Cleaning and Polishing

The outside of your recorder needs some minor care if you want to maintain its good looks. Use a light oil (almond oil is excellent), only a drop on a soft cloth, to rub onto the outside surfaces. Treat the area that goes into your mouth with care as this often loses colour quite badly. Do not use linseed oil for this purpose as it is too heavy and never completely dries unless special chemicals are added. If your instrument is already treated with oil you could apply a little bees wax to improve the look of the instrument. Many of these chemicals are not safe to ingest. Take care not to let oil or wax build up in the finger holes, where attracting dust, they will harden and reduce the hole diameter. This can then give you tuning problems. Indeed, it is not bad idea to occasionally use a cotton bud soaked in methylated spirits to clean the inside surface of the tone holes - do not use strong solvents which can remove the varnish some makers apply to the surfaces of the finger holes and bore to strengthen the recorder's tone. Metal work can be cleaned with a light application of detergent - metal cleaner is probably not a good idea as it can remove thin nickel plating as well as staining the wood around the key work. Keep oil away from the key work as this can attract dirt and dust wich will contribute to increasing the rate of mechancial wear.

C. **Is It Me?**

In 80% of the cases where a player is having problems with a recorder, the problem lies with the player - sad but true - but if you are certain there **is** a problem with your recorder contact the maker or send it back for advice and reassurance.

If you want to learn more about the finer details of recorder playing why not look at our recorder lessons online web pages for descant/soprano in C, treble/alto in F and bass recorder in F.

Appendix Two

Oiling Your Recorder?

by Joseph S. Wisniewski

Raw linseed oil is oil pressed from flax seeds. It is also sold as "flax oil," especially if you buy it in food grade at the local health food store. It really is a nasty tasting cooking oil, but an effective laxative. Even if you sit a pot of it on the stove and try to boil it, it will still be "raw" linseed oil. I usually soak woodwind instruments in raw linseed oil before final finishing.

Most nut oils, including raw linseed oil are very slow drying (if they dry at all) and will get "gunky" if left on the surface of the wood. Oils that don't dry are termed "non-drying oils" (surprise, surprise!) Almond oil, linseed oil, walnut oil, peanut oil, cashew oil, olive oil, grape seed oil, sunflower seed oil, rape seed oil, etc. are all non-drying oils. They are all edible to humans, so they are edible also to other forms of earth life, including bacteria and fungi. They can go rancid (stinky) and also grow mould. A little vitamin E will keep this from happening. I was surprised the other day to find a bottle of food grade almond oil (Hain brand) that looked clean, smelt clean, and even had the vitamin E already added. Again, non-drying oils should be wiped away as much as possible after oiling the bore: any oil left on the surface is going to do the gunky rancid thing (sounds like a new dance!). Their job is to replenish the little bit of the wood's own oils that get carried out of the instrument each time you wipe the bore, or leave it in a hot place, or run detergent (Dupanol, etc.) through it.

Throughout most of history, musical instruments were not oiled. Then again, throughout most of history, instruments were not manufactured in Germany in the winter, placed on an aeroplane, taken up to near vacuum at 35,000 feet (10 km), and delivered 10 hours later to the desert of California or the swamps of Florida. (OK, perhaps these examples are a bit extreme). Oiling the wood makes it harder for water to get in or out of the wood. It doesn't stop moisture gains or losses entirely, but it does provide a bit of a "vapour barrier" and reduces the odds of an instrument warping or cracking, or even raising the bore grain. These things happen when wood in some part of the instrument gets more moisture than that elsewhere, and by expanding more, creates internal stresses. At the microscopic level, stress breaks wood fibres, and loosens the bonds between fibres, so the wood gets softer, and the grain of the bore gets rougher, and the instrument gets "played out." A large stress leads to the more visible cracking and warping. Personally, I don't like cracking, warping, or raised grain.

Boiled linseed oil is raw linseed oil with some chemicals added. These chemicals are called "dryers" or "polymerisers." What they do is let the small hydrocarbon molecules in the oil join together to form long chain molecules, called "polymers," which are essentially plastics or lacquers. (Don't worry, good woods are largely lignin, another natural polymer "plastic"). Any oils that turn into natural lacquer are called "drying oils" or "self polymerising oils" or sometimes "boiled" oils.

In the good old days (back when they would put toxic mercury in your teeth!) lead oxide was the dryer. It had to be heated into the oil (hence the term "boiled"). There are a lot of modern ways of polymerising linseed oil. Nitric acid will do it, and can stain the wood

At the same time if you add a little metal (reddish brown for iron, reddish green for copper, blue black for silver). Cyanoacrylate (CA, super glue) will polymerise linseed oil (and several other oils that are normally not considered "drying" oils, so you can make almond oil lacquer with it!). Methylenemythacrylate will also work. That's enough long chemical names. Tung oil is an oil (I have no idea from what plant, but there is a botanist on this list) that is naturally self polymerising.

Drying oils, lacquers, shellac, and common "wood sealers" do something much different from just replacing oil. They alter the bore, sometimes substantially. Something that soaks in a bit and then dries can stiffen the wood. A surface finish gives you a smoother finish. There are limits to how smooth a natural finish you can put on wood (especially maple and pear due to the grain of the wood. Lacquer can give a maple bore the glassy smoothness of ebony or grenadilla or fine plastic). A sufficiently smooth, stiff, penetrating finish can turn any wood into the equivalent of ABS. These finishes also form a "vapour barrier" at the surface of the wood.

"Bore oil" that you buy at the local music store in little bottles is an entirely different story. It's often mineral oil or petroleum oil and has a number of interesting characteristics. First, it's biologically incompatible (except for special bacteria genetically engineered to clean up oil spills) so it does not go rancid. Second, it dries much slower, and is much more immune to natural and man-made detergents, so it stays in the bore much longer. Third, it's a very effective vapour barrier. But it's not as compatible with wood as the nut oils, and it's difficult to clean out of the bore (keeps building up in waxy layers). Personally, I avoid it. Clarinet and oboe players swear by this kind of oil, but then again, these are the same people who take grenadilla (African Blackwood) which is absolutely beautiful with long streaks of browns, reds, and blacks, and stain it jet black (and lacquer the outside of the instrument) so it looks like plastic.

One further important note: the drying oils such as boiled linseed oil or Tung oil contain chemicals that make oils turn into plastic. I seem to recall reading that, if you take these oils internally (or even get them on your skin) before they dry, they can also polymerise your body's skin oils or fat, which is not a pleasant thing; sort of like being cooked from the inside. Again, that's only the boiled oils, and only before they're cured. After the finish has dried, they're harmless.

Appendix Three

Glossary Of Useful Terms

Alto: F recorder: the international word for treble recorder.

Baroque recorder: the style of recorder which is most common today, even made of plastic.

Baroque fingering: the fingering system used by all serious players, normal in the UK and now throughout the rest of the world. (also known as English fingering to distinguish it from German fingering) .

Baroque pitch: a pitch one semitone below modern pitch, i.e. a=415 Hz as opposed to a=440 Hz. This 'standard' low pitch is a modern convenience - original recorders, for example, seem to have been made at about a=409 Hz.

Bass: F recorder usually written in the bass clef, sounding one octave higher than written.

Beak: the top end of the recorder, which is applied to the lips, not put into the mouth!

Block or Plug: the softwood (cedar) plug fitted into the upper part of the head section for form the base of the windway.

Bushing: a cylindrical lining applied to repair or strengthen a finger or tone hole. Thumb holes are often bushed on quality recorders.

C recorder: an instrument where all holes covered produces a C.

Cent: (viz. tuning) an interval of one semitone is divided into 100 cents.

Contra Bass: confusing term - check which key is meant.
We favour naming bass recorders as follows:
Bass in F (also called Basset), Bass in C (also called Great Bass); Contra Bass in F (one octave below Bass in F); Contra Bass in C (also called Sub Contra Bass, one octave below Bass in C) .

Descant: C recorder, written in the treble clef, sounding one octave higher than written. The English name for soprano - also called a fifth flute .

English fingering: the usual way of fingering a recorder (also called baroque fingering).

F recorder: an instrument where all holes covered produces an F.

Fipple:

From Webster's Revised Unabridged Dictionary (1913):
Fipple \Fip"ple\ (f[~e]r), n. [perh. fr. L. fibula a clasp, a
pin; cf. Prov. E. fible a stick used to stir pottage.]
Astopper, as in a wind instrument of music. [Obs.] --Bacon.

Professor Stanley V. McDaniel comments:
Both the Century Dictionary (1898), a rich mine of etymology, and the Oxford English dictionary state that the origin is obscure, but the Oxford asserts that fipple is probably related to Icelandic _flipi_ "the lip of a horse." The word fipple in Engl. dialect refers to "the under lip" and "to fipple" means to look dejected by protruding the under lip. The use of the term for the recorder's block seems to come from an analogy with the flute, where the under lip provides the same narrowing of the windway as the block does in the recorder, i.e. it is the underside of the wind passage. The Century Dictionary provides a quote stating this very idea. So I think it's unlikely that the word derived from "fibula."

To go a bit further, note the possible relation between the word "lip" and "flipi." "lip" is related to Middle Swedish lippa and similar forms lippe, lyppe, etc. from a presumed Old Teutonic root lep-. Frequently in word migration a reversal of consonants can occur, and also duplication. It's possible that from "lippe" came a form "plippe" softened to "flipi" as in the Icelandic.

What is interesting about the possible relation between fipple and lip is that "lip" variants often refer only to the lower lip, but also by extension they refer in general to the rim of an opening. Thus the fipple, or lip, of a recorder may be thought of as the rim of the windway, which is produced in its lower part by the block, and which takes the place of the lips themselves as the windway for a transverse flute.

Dan Chernick adds:

Ijust can't resist an OED request! According to my "Compact Edition of the Oxford English Dictionary" (I'm paraphrasing it):

Fipple [Compare to Icelandic(?) "flipi" - lip of a horse]
1. The plug at the mouth of a wind-instrument, by which its volume was contracted. First occurrence in English print: was in 1626 by Bacon in "Sylva": "Let there be a Recorder made with two Fipples, at each end one."
2. (In the northern dialect) The under lip in men and animals, when it hangs down large and loose. The expression "to hang a Fipple" means "to look disappointed, discontented, sulky; also, to weep".

Asecond entry for Fipple says it means "to whimper, whine; to slaver, dribble" from the Swedish "flipa", "to weep with distortion of the mouth".

Anyone know what Bacon was talking about -- a recorder with a fipple at each end????

Flauto: usually taken to mean treble recorder.

Flautino: usually taken to mean sopranino recorder.

Fourth flute: a soprano/descant recorder in B flat .

Garklein flötlein: C recorder written in the treble clef, sounding two octaves higher.

German fingering: a modern and discredited system in which four fingers down gives F. Still used, principally in Germany and Holland; to be avoided like the plague!

Great Bass: C recorder written in the bass clef sounding an octave higher than written.

Hertz: 19th century German physicist whose name is used as a unit of frequency. 1hertz, written 1 Hz, is one cycle per second

Historic baroque fingering: a variant of the usual fingering.

Knick: German for fold : something sharply bent

(the right hand head is as seen on a standard tenor recorder; the left hand head has the characteristic bend of the knick system designed to shorten the distance from the mouthpiece to the tone holes on the body and foot sections)

Labium: the 'cutting' edge part of the sound generator.

Recorder:

From Webster's Revised Unabridged Dictionary (1913) :
Recorder \Re*cord"er\ (r?*k?rd"?r), n.
(Mus.) A kind of wind instrument resembling the flageolet.
[Obs.] “Flutes and soft recorders." --Milton.

From WordNet (r) 1.6 :
recorder
a woodwind with a vertical pipe and 8 finger holes and a whistle mouthpiece [syn: fipple flute, fipple pipe, vertical flute]

[Middle English, partly from Anglo-French recordour,Old French recordeur;partly from record (in obsolete sense ‘practise a tune’)]

Renaissance recorders: these are based on early originals, usually fingered as modern instruments, but models with authentic fingering are available from some makers. The bore is much wider than that of a baroque instrument and tapers less. The compass is usually a twelfth.

Sixth flute: A descant/soprano recorder in D, popular in 18th century England.

Soprano: C recorder, the international word for descant recorder - also called a fifth flute

Sopranino: F recorder written in the treble clef, sounding one octave higher.

Sub-Bass:

also "Sub-Contra-Bass", F recorder written in the bass clef, sounding at written pitch.

Tenor: C recorder written in the treble clef, sounding at written pitch

Tone Hole: alternative term for finger hole.

Traverso: baroque flute, or, transverse flute.

Treble: F recorder, written in the treble clef, sounding at written pitch.
The English word for Alto.

Voice Flute: D recorder, tenor sized.

Window: the area between the exit from the windway and the top of the ramp that forms the top of the labium.

Windway: the narrow slot through which the breath passes.