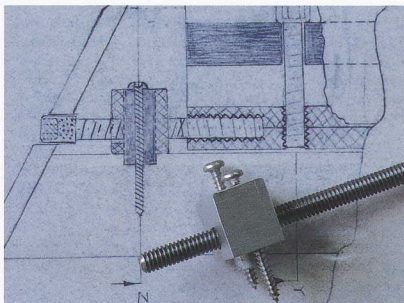


Turn of the Screw

The innovative ideas of Canadian bass maker Jim Ham are earning him an international reputation.

Barb McDougall captures his work in words and pictures.



but also frustrating because the bridge with the best height might not produce the best sound.'

Enter Ham's action adjustment system. This extraordinary devise moves the bass' neck against the upper block in order to raise and lower the height of the strings rather than relying on adjusting the bridge. The effect is not unlike the way a frog slides up and down the stick of a bow; the adjuster moves the neck closer to or farther from the strings in seconds. The screw mechanism is anchored to a corrosion-resistant titanium rod which not only is stronger and lighter than many metals but also holds the thread better and strengthens the heel of the neck – often a weak area of a bass. Since the surface it moves against is at a right angle to the strings, the string length changes so slightly that the instrument stays in tune.

Like all the best ideas, it's basically very simple – as much out of necessity as out of ingenuity. 'Because the adjuster needed to be as compact as possible to fit into the limited space at the bottom of the neck mortise, I used a left-hand thread on the end of the screw which passes through a left-handed nut secured by wood screws to the upper block, while a right-hand thread engages the "T"-shaped bar. This doubles the distance the neck moves with each turn of the screw.'

When the time came to build the end pin for the instrument, Ham decided to improve upon what he had seen over the years as a restorer: 'I've repaired a great many end-pin sockets in cellos and basses with stripped threads where the screw passes through the metal band. Also they will often slip, rattle or become jammed when the end-pin gets slightly bent. My end-pin uses a collet of the type used by machinists for securing workpieces in the lathe. The material I use for the end-pin is titanium – I think it helps the tone of the instrument. The adjustment knob on the tightening nut is made of pernambuco to match the tailpiece and tuning knobs.'

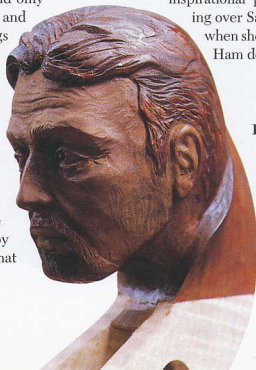
Ham even designed his own machine heads: the string shafts extend only partially across the peg box and are supported by bushings within the peg box cheeks. Ham insists this 'eliminates not only having the outer end of the string shaft turn against wood' but also 'the necessity for holes on the opposite side'. Also, the D-string passes right by the end of the A-string shaft, instead of rubbing against it. I have always been fascinated by 18th-century clock work; that

was the inspiration for the way the gears are held between two brass plates.'

The interest Ham's ideas have generated are reflected in a burgeoning portfolio of commissions. As well as the first bass owned by Karr and the second owned by Mary Rannie, principal bass with the Victoria Symphony, future orders have come from Oregon, Switzerland, Korea, and Taiwan. Sarah Wood – the Californian bassist, teacher and master organiser of Karr's summer bass workshops – will own Ham bass number four. Unbeknownst to Karr, the scroll will feature a carved head of the man himself created by sculptor Herbert Schafer (another Victoria resident). No

doubt the figurehead will be an inspirational presence looking over Sarah's shoulder when she plays her new

Ham double bass. **DB**



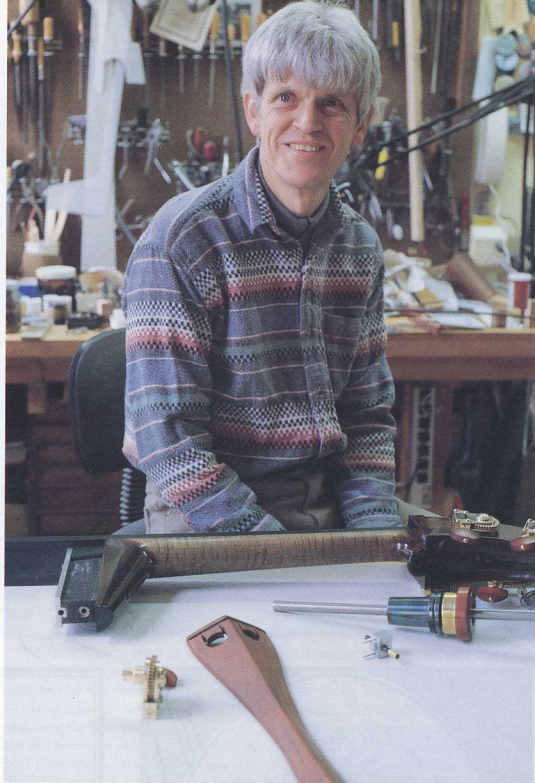
Left: The scroll of Ham's latest bass features a carved head of Gary Karr, sculpted by Herbert Schafer



Top: Gary Karr's bass in the early stages of making

Above: The innovative action adjustment system

Right: Ham in his atelier



THE WORLD MAY BE WAITING FOR A better designed mousetrap but a better designed double bass is already under construction in the workshop of luthier Jim Ham. Largely self-taught, Ham runs a shop and atelier in Victoria, British Columbia. But with radically innovative ideas on the fundamentals of instrument building, his reputation is reaching far beyond Canada's borders.

When *Double Bassist* visited his studio at Market Square, he was just putting the finishing touches to his third bass, an instrument commissioned by Rick Visachero of the Cincinnati Symphony. But the original source of his inspiration was none other than Gary Karr, the bass virtuoso and pedagogue who began travelling to Victoria regularly more than two decades ago to teach at the Johanness International School of the Arts. Karr, who now makes his home in the city, owns

the first bass Ham made and feels that of all the basses he has commissioned this was the first to fully satisfy him.

Ham's college training in engineering has given him a particularly informed interest in the design and construction elements of his luthier's craft. While preparing his first bass back in the 1970s, Ham was determined to improve on several weak points in the majority of instruments he had seen and repaired over the years.

For Ham, the most challenging problem was how to deal with adjusting the string height under varying conditions of temperature and humidity. The use of adjustable bridges has become fairly common practise among many bassists, as Ham points out: 'The bridge has a major effect on the sound of a string instrument and even minuscule trimming of the legs, feet and openings allows the repairman to adjust the tone - so I feel that cutting

the legs (which must be left thick) and inserting metal screws at this point seems a high price to pay for adjustability.'

So it was that Ham developed a method of moving the string height adjustment function away from the most resonant part of the instrument to the least resonant - the upper block.

'Sitting in on Gary Karr's master classes and hearing him explain how crucial the feel of the bow on the string is to the performer made me determined to come up with a different approach to the string height problem,' explains Ham. 'Karr had said that the adjustable bridge reduced the feedback to such an extent that it was "like taking a bath with your socks on!" For most of his career, Karr has travelled the world with three or four extra bridges in order to be sure of having one which would suit the local climate conditions; this is not only inconvenient