

OVATION GUITARS

New England is aptly named. It's probably the closest you can get, landscape-wise (as they say over there) to the Old Country itself — cute, quaint li'l winding roads, plenty of trees, mild autumnal weather, and very English-style people too.

Your roving U.S. correspondent was musing upon all this whilst purring through the countryside in a 95-foot-long station wagon belonging to one Jim Hennessey. Hennessey is employed by Ovation in the capacity of Ad and Sales Promotion Manager and, on this occasion, as a tour guide. A tall, serious-minded fellow is Jim,

bearing a slight resemblance to Mr Spock, though his ears look human enough. And a nicer chap never walked God's earth, to be sure.

As we whizzed along leafy lanes towards New Hartford, the Connecticut town in which part of Ovation's manufacturing operation takes place, Jim outlined the history of the company.

It all began back in 1945. Charlie Kaman was an engineer working for a large aerospace company when he was suddenly inspired with a new idea for helicopter blades; this idea took such a grip on Charlie's imagination that he quit the firm and

set to work in his mother's garage with a \$2000 government grant in his pocket, and twenty years later he was a multimillionaire. Well, O.K., there were a number of intermediate stages, but nobody wants to know how you make millions, do they? The fact is, Charlie had long been interested in guitar playing in his spare time — nothing more exciting than jazz big band chord-playing stuff, admittedly, but he had always been nagged by the feeling that there was never enough midrange in the guitars. And, being an engineer, he set out to try and fix the problem instead of just sitting there bitching about it...

Epoxy

Hennessey's car swung majestically into the car park adjoining a large nineteenth-century red-brick textile mill. This was the place. A few brief introductions, and we were on our way to view the entire process from A to Z.

Right, silence at the back of the class and let's get on with it. Each Ovation starts life as a double sheet of fibreglass, which looks and feels like shower curtain material. This is compressed at 400°F and at a pressure of 3500lbs per square inch with an oily black liquid which is composed of a mixture of resin, dye and catalyst. The shape of the press is of course the shape of the guitar bowl, and the substance of which this bowl is formed is known as Lyrachord — allegedly better than wood for its acoustic properties.

Why?

O.K. — it seems that the "roundback" idea and the use of synthetic material combine to produce a louder, purer and more distinct sound than wood because a) wood absorbs sound — it's porous, whereas Lyrachord isn't, and thus reflects the sound waves out of the sound hole; b) the lack of corners, back struts and braces means that the sound flows around more smoothly inside; and c) the vibrational qualities of Lyrachord are so accurately known that the tops (which are made of wood) can be acoustically matched.

Meanwhile, back in the factory, the internal heel for the neck and the support ring are glued and pressed into place with epoxy resin; elsewhere a substance called Laminac is used as adhesive. And that's pretty much it for the bowl.

The tops are made from sitka spruce — an old idea. What is new is the way that the spruce is braced underneath. X-shaped braces are the traditional standard type, and Ovation still use them on their cheaper guitars. VT-bracing is used on the mid-price instruments, and as the name suggests this means that the struts run more longitudinally than laterally, and this allows the wood to flex more freely. The A-brace — the newest of the lot — is a further step again. A guitar top braced with one of these will flex quite considerably along its long axis, but be almost rigid from side to side. And the grain runs the same way as the flexing.

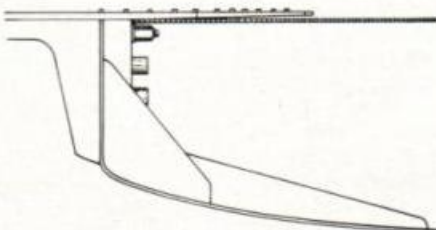
The necks are made from two large planks of mahogany pressed together with three lengths of maple, and each of these composite planks is sufficient for six necks, the shape of which are drawn on in pencil as a rough guide, then cut. A machine then carves the necks and buffs them with extraordinary precision, six at a time. The business of inserting the frets and the fingerboard inlays is not significantly different from that carried out at other guitar factories. What does differ is the degree to which each component of the guitar is complete before being joined with the rest. In other words, the checking and inspection is meticulous at every stage of construction, thus ensuring overall standards and minimizing wastage. Thus neck, body and top are all complete when joined, and this joining is the last process in the entire assembly. The top edge is in two steps to allow for a particularly wide binding strip, and abalone inlay on the more expensive models. And since the top is the only organic substance south of the neck, it is treated with special care — buffed many times both manually and mechanically. There's no pickguard — an area of hard, transparent polyester is applied below the sound hole so that the wood is not encumbered with the addition of a separate plastic plate.

Upstairs is the electrical section. Actually, this is the part that people are most interested in, since the quality of Ovation guitars that makes them sell so prodigiously is the fact that though they are constructed in a roughly similar way to other



The new Adamus guitar: expensive for all the right reasons, with its decorative but functional soundholes.

The neck block is integral with the bowl, reinforced by a main centre strut.



acoustics, most of them have built-in pick-ups, lead socket and volume/tone control. In other words, they are made for the performer who wants an acoustic sound he can plug into an amplifier. So how does this work?

The pick-ups are built into the bridge. There are six of them, or rather six piezo-electric elements, one at each string anchor point on the bridge saddle. These combine with the FET (Field-effect transistor) pre-amp inside the guitar bowl, the pre-amp being powered by batteries which are installed at the factory. Ovation reckon that these will last about a year, at which time new ones can be slotted in.

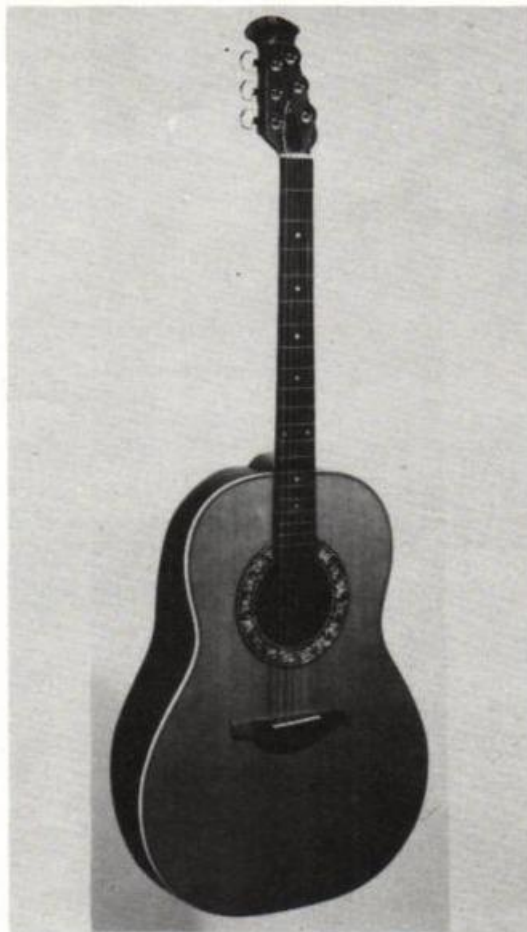
A variety of finishes can be obtained, though the vast majority of Ovations that reach this country have natural tops. Sunburst, red-top, nutmeg, white-top and black are the choices, though the latter has to be specially ordered for acoustic models.

But what about the Magnum bass, the Matrix range Applause guitars, and lastly the amazing Adamas? These are largely the product of another factory, this time in a town called Moosup, which is a short drive from New Hartford. And it was here that the eyes really started to open wide. This place is an awesome technological giant which not only makes guitars, but other products of Charlie Kaman's industrial empire: the nose cone for NASA's space shuttle and sections of the F-14 fighter plane are assembled next to bodies for the Applause guitars. Think about *that* next time you hold down a C9th chord.

Eyeballs

I was introduced to the amiable but plaster-footed (from a motorcycle accident) heir to the throne, Bill Kaman, who is in charge of Applause, Matrix and Adamas. Adamas guitars cost an average of \$2500 each, and are quite possibly the most beautiful looking guitars your open-mouthed reporter has ever clapped eyeballs on. They take the Ovation roundback revolution a way further; for a start, instead of a soundhole they have 22 sound-holes of different sizes clustered in two symmetrical groups on either side of the body's top end. The total area of these holes, which are a development of the old f-hole idea, is equal to that of the sound-hole on the conventional Ovations.

The top is made from two thin layers of carbon graphite sand-



... and the older stalwarts: the Balladeer (left) and the Breadwinner.

wiching a spruce veneer because, to quote Nick Mackin, the engineer responsible for this extraordinary project, "it's thinner, more flexible and more quality-controllable than a conventional birch top". The grain of the graphite runs straight along the guitar, whereas the spruce runs at an angle. Every part of the guitar top — and that includes the fancy wooden "epaulettes" around the soundholes — is weighed individually to ensure maximum vibration. Oh, and the multitude of holes is apparently because this arrangement is less prone to feedback than the traditional design.

The bodies are similar to Ovation bodies, with additional strength added to the heel block, and there is an access hole in the back to get at the electronics, which are inserted as one of the last stages of construction.

In short, the Adamas is a fearfully expensive guitar, but for all the right reasons. For a start, there were four years of research before the first guitar rolled off the production line. All that has to be paid for somehow. Then again, the actual labour, the stringent inspection standards involved and the sheer cost of the materials (seven different woods

are used for the epaulettes alone) mean that there's no way these things are ever going to be cheap. The same applies to Ovation guitars, in case you've ever wondered about the price of those. Man-hours of work have to be reflected in the eventual retail price of anything. It's entirely up to you whether you think it was worth it.

Conscious of this somewhat elitist image, the company have been researching ways of producing instruments more cheaply. Matrix was the result. A number of automated techniques, derived from the aerospace division, have been adopted to ensure a briefer production time for Matrix guitars. Obviously there is a slight reduction in quality, but what it does mean is that you can have a guitar which resembles Ovations just about as near as dammit for considerably less money — and you've got automatic sanding and buffing to thank.

The same feeling lies at the root of the Applause guitars. They are solid-bodied instruments, whose necks are made from a mixture of metal coated with baking enamel for the fingerboard and injection-moulded plastic. It's just a natural extension of the idea that

a guitar doesn't *have* to be made of wood that has led to the creation of the "Urelite", body. Urelite, according to the oscilloscopes, has a resonance and sustain to equal that of wood, and it won't crack or split so easily either.

"It's the low end of the market," Nick Mackin said. "We're catering for the beginner, and we're competing directly with the Japanese and the Koreans for a share of that market. To do this we had to adopt a new approach to building them — what costs money is man-hours, and by taking the man-hours *out* of the process we can produce a cheaper instrument. Some of these Applause guitars only retail at about \$160."

So there we are — the Kaman Corporation is working for both the superstar and the penniless punter. That same evening Jim Hennessey and myself went to a Bob Dylan gig in Springfield, Massachusetts; Jim was hoping to show an Adamas to the Great Zim himself. At the Sound-check Zimmo stroked his chin and walked away. Jim shrugged philosophically. Why should he worry? He's already shown three to the rest of the band ... □