

Phil Taylor and The Astoria Driving Audio Standards on the River Thames

by Jeff Touzeau
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"And you really live by the river? What a jolly life!" "By it and with it and on it and in it," said the Rat... "It's my world, and I don't want any other. What it hasn't got is not worth having, and what it doesn't know is not worth knowing."

– excerpt from Kenneth Grahame's *The Wind in the Willows*

For nearly a century, The Astoria has woven its own distinct musical heritage along the banks of the river Thames, just southwest of London. With its lush and leafy surroundings, highly reminiscent of what one might imagine in Kenneth Graham's *The Wind in the Willows*, the 90-foot houseboat has achieved near mythical status. The Edwardian-style boat, built in 1911 by the finest craftsmen available, has been synonymous with an elite, musically inspired clan of entertainers, musicians and producers spanning multiple generations. Fred Karno, a famous music hall impresario who managed the likes of Charlie Chaplin and Laurel and Hardy, was the vessel's original owner. When he had it built, Karno described it as "...rather an elaborate affair, with mahogany paneling and state-rooms for guests. At night it was lit up with festoons of coloured lights...".

Throughout the years, The Astoria was the site of many elaborate banquets and gatherings, whose guests were often entertained by "special amplified orchestras". From 1926 to 1950 it was owned by Vesta Victoria, and then by Sir James Greenwood, who commissioned an orchestra to perform on the Astoria's deck to an audience of over 2,000 moored in small boats and on the far river bank, beneath a grand display of fireworks. In 1986, David Gilmour of Pink Floyd acquired the vessel with the intention of using it as sanctuary for his own composing and recording.

The grounds of The Astoria, named after the famous 18th-century Shakespearean actor David Garrick who is credited with helping bring the bard's dramatic genius to the masses, cover one-third of an acre and are breathtaking in their natural beauty. One enters through an ornate tunnel, designed by Lancelot "Capability" Brown. Capability Brown also designed the gardens at nearby Blenheim Palace and Windsor Castle.

For almost two decades, Phil Taylor has been the steward and driving force behind the current iteration of Astoria, which is now one of the most technologically advanced recording studios in the world; it is exceptionally unique. Its idyllic ambience is matched only by its technologically superior, hi-fidelity infrastructure. Taylor's own musical heritage includes having been Mr. Gilmour's right-hand man and guitar tech since 1974. He has also handled Pink Floyd's back-line for their live shows since that time.

One summer afternoon, I had the privilege of meeting with Phil, who, despite being charged with such a great responsibility, was very gracious with his time. With his easygoing character and down to earth nature, he struck me as someone who had clearly hit a rhythm in his career and successfully married his passion with his natural abilities.

How did you originally come across the Astoria? Why a boat?

The boat was five minutes away from David's house, and it was for sale. So just out of interest, we went and had a look at it. When we drove away from it having been shown around, David turned around and said, "What do you think?" to me, and I said, "Well, I think it's fantastic." Then he said to Warrick, a friend of his who used to be the Floyd's personal roadie, "What do you think?" "I think you've got to buy it!" David said, "Yeah, what are we going to do with it?" And it was almost one of

those *Spinal Tap* moments. It seemed, for what it was, a very inexpensive, fabulous place. David thought that it would be a good place; conducive to being creative and writing music. Before that, David had had different home studios, but was currently living in a house where there wasn't room for a studio and his equipment was currently in storage. We were bowled over by what a wonderful place it was; not only the boat, but the riverbank grounds and buildings.

What kind of setups did these early home studios consist of in the early seventies, pre-Astoria?

At that point, they varied from two or three Revox A77 2-tracks, then they got Brenell 1" 8-tracks and Allen and Heath consoles; pretty good for the time, really.

Is it fair to assume that David was the one who was more technically interested than the others in terms of capabilities and understanding of recording processes?

David was probably slightly more proficient, but Roger was always... some of the stuff on *Dark Side of the Moon* he recorded at home... the coins and things. So they were all reasonably proficient. They were pretty basic recording systems: tape machine, small desk and a few microphones.

I actually heard a rumor that Pink Floyd had a gig in the early 70's nearby, and that David had his eyes on this for many years. Any truth in that?

No. The boat was built for a chap called Fred Karno on Tagg's island, where it was built and moored, which is downstream from where it's moored now. Karno had a hotel there called the Karsino. And the Floyd, in the early days of David being in the band, actually did a gig in the Palm Court ballroom there. It was unfortunately knocked down in 1973. Interestingly, that ballroom can be seen in the Stanley Kubrick film *A Clockwork Orange*. In scene four - Battling Billy Boy.

I remember that scene...

...with the girl.

Well, what kind of shape was the boat in? It obviously wasn't in the pristine shape that it's in now?

It was in pretty good condition. It was a beautiful, furnished houseboat, with a caretaker living on board. David thought he could use it for songwriting; he didn't have anywhere else available. As soon as we actually bought it, I took down a pair of UREI 813 monitors and some amps and a CD player. I got Nick Whittaker, an acoustician to come along, and we put the equipment in the saloon, which would later become the control room. After looking at it and giving it some thought we settled on the most logical place to position the monitors. We put them in and played some music. We had a listen with the room as it was, then ran some pink noise through it, did some sweeps and measurements, listened some more. It sounded reasonably good as it was, which was very encouraging. Next we wound the level up to maximum, having first shut the doors and windows, so we could see how much leakage there was outside. To our surprise, it was very minimal - the boat was very solidly built. David's brief was to get his equipment out of storage and put it in the large end room while he was away for six weeks in the summer. When he got back, we'd start doing some work. Well, having worked for the band for a while at that time, I thought, if I do that, they're going to want to change it, and I could see how it would work out better. I took it upon myself to change the plan somewhat. I converted the next room along, the master bedroom, into a machine room, where we put power amplifiers, all the tape machines, camera supplies and that sort of stuff. And I converted the room at the other end of the boat so it could be used as a live room if required, running mic lines, red lights, foldback, CCTV, etc. And then I had air conditioning systems put in the machine room and control room. The control room I had secondarily glazed. We had an old Soundcraft 2400 desk from David's old home studio. It was all right, but pretty noisy; too noisy, in my opinion, to put into a new place. I phoned David in Greece, and said "I want to change this desk to a DDA AMR 24 I've got a great deal, and a really good price." David was of course very reluctant over the phone to change the desk as he was very hands-on and knew how it worked. I assured him that the layout was fairly similar but it was actually much quieter with a cleaner signal path. So he said, "Okay." I had Nick in to do some more acoustic tests and design work for the room. I had to get

it completed before David came back six weeks later. The logistics were unusual; I had to get a crane barge and a tug to get both the tape machines in through a window opening in to the master bedroom on the far side of the boat and the air conditioning unit for the control room on to the roof. The last two days of construction, I think I just stayed there, having barely slept at all, trying to get 20 workmen out of there who had been doing the whole installation getting in each other's way in a fairly confined space with desk installation, wiring, electric, woodwork, glazing, air con, CCTV, decorating, etc., with the floors up and all going on at the same time and I had to get the place finished and running to be ready for use. [laughs]

Did David know the scope of what you were trying to achieve while he was away?

No, I didn't tell him. The whole thing, including the desk, to put the air conditioning in, do secondary glazing, do the acoustic work, have things custom built such as racks and monitor stands, putting in the CCTV system, mic lines, wiring - it cost 50-60,000 pounds. With all things considered and the facility now available, it was very inexpensive, really. When he came back [laughs] he flew back in from Greece and immediately came to the boat. He walked around, went up to the control room, walked round some more, came up the other end and found me. I didn't even know he was there.

You were sleeping.

No, I wasn't sleeping. No time for that, but I was up there doing something. He looked round and the only thing he said was, "Well, how much did it cost?" [laughs] And that was really the start of it all here. We then started work on the *Momentary Lapse...* album and everybody really liked being here. The whole thing worked very well. As time went on, the studio and grounds went through many different stages of being upgraded and changed.

So this was since 1986?

Yes.

Who did you involve getting the boat up to snuff? Did you get a serious team together?

Nick Whittaker, the acoustician, who had done a couple of other things for us and who we still use now. But also the Pink Floyd engineers, James Guthrie and Andy Jackson, who have done every bit of David Gilmour and Floyd work between them since *The Wall*, really. James started in '78, I guess. They're both fantastic engineers and have great ears. James lives in Lake Tahoe now and he has his own studio there. Andy lives in London. In fact, Andy used to be James' assistant at Utopia studios in London in the mid-seventies. But they both grew up doing all sorts and styles of music and honing their craft, as did other well-known engineers from Utopia during that time, such as Greg and Pete Walsh. So there's always been a team of people, with Andy or James' ears, along with Nick Whittaker's ears and his measuring equipment. I've always been the driving force and the motivator.

How do you like being the ringleader of it all?

I am by default, really. It all started doing the Floyd's back-line. After doing the *Wish You Were Here* and *Dark Side...* tours, it was time to do re-do all the back-line for the *Animals* tour. I kept David's 4 x 12 cabinets and Hi-Watts, keyboards and specific effects, but re-did everything else. Bass equipment, got stabilizers, isolating transformers, re-did all the mains runs, every bit of cabling, casing. Again, even in those days, my approach to doing it was that everything had to be done as well as possible to the highest quality - top class for a great band. I felt it was my role, without anything being said, to keep things to the highest standard possible. It's rubbed off from them, from doing their live shows into this area where I've ended by default; somehow running a studio well, building one.

You have the best aesthetic and sonic environment here.

It's unique. The way I've done it on this boat is that this studio could be taken completely out of this boat, and, with not very much work, it could be turned back into just a beautiful houseboat. The

alterations in the ceilings and walls are not very many. I have stored any wood that has been removed in our warehouse.

Seems like it was meant to be a studio, though.

It's kind of had a music tradition, being built initially for Fred Karno, who was a music hall impresario.

He gave performances up on top or something?

I don't know about that. He had orchestras perform on the upper deck, he gave banquets here, he actually built this boat down on the island there [points to an island downriver] as a place where he could entertain, away from his wife. Charlie Chaplin speaks of spending a weekend on here in his autobiography. So with Fred Karno, there's the entertainment/music connection. After he owned it, it was owned by a lady named Vesta Victoria, who sang "Daddy Wouldn't Buy Me A Bow Wow". She apparently loved the place and managed to keep it out of the clutches of her husbands.

You have a nice collection of historical artifacts and photographs. Did you have to collect all this yourselves?

We've collected things since we've been here. There were some photos here, but over time, we've found other pictures and information. We found a book on Fred Karno. On a couple of occasions, there have been people who have turned up here who were related to either Fred Karno or also Sir James Greenwood. That's where we got all these other pictures of the boat. People have generously given them to us.

That's really special.

We've got quite a collection up there. Langley is the caretaker but his real profession is a graphic artist. We're considering doing a book on the Astoria. We've thought about it, but just haven't found the time to pursue it. Meanwhile, we've been compiling more and more information. Charlie Chaplin, Laurel and Hardy, Taggs Island. Where it is moored here, these grounds, that house over there, which is now apartments, belonged to David Garrick. There's a club in London, the Garrick Club and the Garrick Theatre named after him. He was the person who introduced Shakespeare to the masses. That building with the dome is a memorial to Shakespeare. This was all part of David Garrick's gardens. There are some very famous paintings from the 1700s that have been done in the gardens here. So once you've got all that, and the history of the boat in its various stages, and with its current incarnation, it could be very interesting. This is an ever-evolving process, it's ongoing.

Behind the lavish exterior, there must be so much effort in all this. You wouldn't want that effort to be overlooked....

The effort is irrelevant. Retaining the charm and feel of the place is the goal. Over time, we've made improvements and have come up with all sorts of different ideas. Because trying to turn a beautiful boat into a fantastic control room and studio is not without its problems. You've got to keep the feel of the place, but it's not like you can knock down walls and rebuild them. You've got to work with what's there. We've had to be very inventive and come up with all sorts of fairly ingenious solutions.

Does David come to the Astoria often? What sorts of thing draws him aboard these days?

It's his place and he likes it here, so he comes in when he has something to do.

Can he get around on your Neve 88R desk?

Yes, he might fiddle and be hands on, but either Andy or Damon [Iddins] will be here to run the room, so he doesn't need to, really.

How have you approached the Astoria as a commercial studio? Is there an unwritten policy on who can record here? Do people have to know you or somebody else who works here?

It is not a commercial studio in the normal sense. It is David's private studio which, when he is not here, we do let friends and acquaintances come in to use the place. It's down to my discretion. We're ex-directory, and we're not in any studio guides and we don't advertise. It's still really private. David was happy with closing it down and not doing anything between the periods when he wanted to work. But of course, inevitably when you do that, you switch it all back on and it doesn't work properly or it's out of date. So what I put to him was, if I made it available to friends, which actually he really didn't want me to do, I said it would be good to get other people in; other engineers and producers, to see what they thought of it. It would be good to get other input to help improve it keep the place running and up to scratch for when he wanted to use it. So it's very low-key and discreet.

That's how I heard about Astoria's existence, actually, through John Leckie. Total luck on my part.

As the years go by, more people hear about it. It's still a rumor in many circles, "Does it exist?"

What interesting projects have you had here lately? Do you occasionally stop in during the sessions?

I'll pop in and suggest things at times, or tell them about things that we have here that are not obvious.

John Leckie said you had Muse in here a while back?

Yes, John brought them in - they only came in for a few days. I think they thought Abbey Road sounded more glamorous, those youngsters, so they went there. Currently, we've got Nick Launay here mixing Nick Cave and the Bad Seeds, do you know of them?

Sure. I saw the master tapes beside the tape machines.

How nice - someone with ears working on analogue tape. Actually more people playing real instruments or with great voices seem lately to be either discovering for the first time or rediscovering how great they sound on tape as opposed to Pro Tools ... or other digital mediums. It makes such a difference, particularly if you work 16-track 2".

When was Roger Knapp brought in for maintenance?

I'm not sure. About ten years ago, probably.

And he comes in about once a week?

No, no. He's in about two or three days a week. It varies, depending on what's going on, but generally about two or three days a week.

Just to make sure all the machines are running up to snuff?

Well, [laughs] one of the things he did when he worked for Pete Townshend at Eel Pie was - Pete had a studio on a boat, albeit a very different type of boat, a big Dutch barge, which Roger put together, and Roger's very good at all sorts of things, other than just electronics. Roger turns his hands to many different things I ask him to and is a good chap to bounce my latest cunning plan off of.

What's that building over there?

That's the caretaker's lounge, basically. We have somebody on site here permanently 24-7, for security reasons. Also at the top there is a conservatory, which you've been in. That is where food is prepared, kitchen area, bathroom and lounge.

So what's that brick building?

The tall brick building up there used to be a boiler house where the boat was heated. There was a very inefficient large gas boiler in there, which would pump hot air through a 12" diameter pipe down underground through the lawns and over the wrought iron arch to the boat. It would go down internally in the boat down both sides of the hull and heat all the rooms. This wasn't very efficient, so we got rid of that boiler and converted the room to an echo plate room. We now have three EMT 140s in there, two of which have been modified to five channels. We've got five transducers on them, Tim de Paravicini head amps and they've all been tweaked for doing surround sound. There's also one stereo transistor plate in there. The little building next to it is a room where there was a defunked compressor from the '60s for water pressure on the boat, which we've thrown out. It now houses a laboratory incubator oven, which is used for baking old analog tapes. So we can do that on site here.

So how long has your tape baking facility been on site and working?

Oh, only about six months now. We have some old Floyd tapes that need baking; I didn't want to send them out anywhere. It seemed like a good use of the room.

Where is the slipper launch dock?

Well, the slipper is unfortunately right at this moment out of the water being varnished.

Do you ever take it out?

Occasionally. I don't get time usually. But it sits down there. I had a jetty built and there's a nice summer house down there in the corner, which is a very nice place to get away and hang out by the water. It's over on that side of the garden. Let's go down there... just watch the sprinkler. [We walk along grounds toward summerhouse, then go inside]. This is a great place to hang out by the river. It's got a phone in here and you can open all these windows. On a nice sunny day, it's like you're on the water, really.

Is this boom box in here modified by Tim de Paravicini and rigged into the control room?

No, no [laughs]. But you can tune the radio in to our transmitter. We've got some other buildings over there. Want to look at those?

Absolutely.

So here's the air conditioning plant for the studio, for the live room, with the trunking going across this wrought iron bridge.

And you said there are four units inside?

They're not inside. There are four systems. There are two units for the tape room up there on that platform with the main unit for the control room. Behind the conservatory, hidden behind the trees, is a cabin, which is Roger's technical workshop. That's where his workbench is set up, where he listens to BBC radio 4 and fiddles about. This is what was originally the servant's or domestic quarters, built in the '50s, now used as my office. Behind that is a brick building, which houses a lot of the cabling, connecting the land to the boat: audio mains, etc. Also in there is suspended a valve EMT 140 plate, which has been specially tweaked with Henry Dien head amps, etc., so that's the fourth plate. There is also a little wooden shed behind that which contains the balanced mains transformers, the stabilizer, and another EMT plate, which, of course, has been modified. Plate number five.

During the design phase, what special considerations were given to dealing with the fact that it was floating on water?

When we never really had any idea of what a serious place it would turn into, it was just a matter of putting the equipment in, making it work so that David could write some songs there and we could do a bit of recording. The only things taken into consideration at that stage, really, were both noise leakage in and out, which is why we secondary glazed the control room, doing some acoustic treatment to try and make the monitoring sensible, although it sounded reasonably good. We had to take out some reflections and deal with some standing waves. Otherwise, the only considerations were to keep the charm and feel of the place.

Which clearly remains to this day. What were some of the challenges in keeping the illustrious décor in tact? For example the beautiful paneling and detailed trim work... how did you retain the character?

One of the fortunate things was that installing the studio and wiring things up within the boat was in the main straightforward because it's a very large wooden boat. All the floors are wooden and they all come up. Therefore, there's quite a lot of room underneath and there's mostly good access. The runs, cabling, both audio and mains, that run up and down the boat were initially easy to install.

That's perfect...

That made life very good because you can't really get access above the ceilings because it's single story. There's a deck above us outside, the joists run across the boat therefore making it inaccessible for cable runs. You know, you can't just start cutting holes in it. The deck runs the full length of the boat, all single-story. The deck, by the way, is a nice place to sit and hang out. It has a glass roof over two-thirds of it. Overall, I've tried to make very minimal changes at a very slow pace. Take for instance, the acoustics in the control room: The original wooden hull of the boat had a steel hull put around it many years ago, and there's a fairly large void between the two. So the length of the control room is divided in the hull space, each side of the room in half, and in half the length of the room there is a bass trap. There are four bass traps, two on each side. Left and right, front and back. Then there's a mahogany fireplace here and a big chimney void above that has trapping in it.

So the fireplace is actually functioning as a bass trap? Beautiful detail on the mantle.

Yeah. Interestingly, in the movie *Titanic*, at the beginning of it, when they go down to the wreck of the original boat there was a wooden fireplace there that's virtually identical to this one. It was built at the same time, around 1912, in mahogany. That cast iron stove I found in our warehouse. It belonged to a friend of David's neighbors, and I was storing it for them.

It looks like it belongs.

Exactly. That's exactly what I thought. So I bought it and kept it. Filled it full of acoustic foam.

So even the fireplace is modified. You've done a beautiful job of maintaining all the architectural detail, while keeping all the acoustic treatment hidden and well placed....

Yes, there's treatment in the chimney, between the walls, under the floor and above the rear ceiling. The way things have worked in this room is that the room is what it is in terms of its physical size, shape and also decorative finish. We've worked over time on the best position of the monitoring and desks, and then over the years we've improved the room. We've worked out the different problems with different frequency ranges or areas, and then worked out how to deal with them. Actually, when James was mixing Rick Wright's *Broken China* album, we got the carpenters in early one day and took out all the glass in these back windows – the entire back of the room was open. We felt, oh, we can't do this while Rick's in but we have to get rid of this standing wave. We couldn't work out how to get rid of it, so drastic action was taken. We took the windows out. And then Rick came in to listen to the mix. He's sitting there, and it wasn't for a while that he realized that he could hear the ducks! He was cool (we had the glass reinstated during the lunch break). What that actually proved

though, taking the glass out, was that it made no difference to the standing waves. We discovered when we opened a side window that it did make a hell of a difference. So then we found a different approach to dealing with that particular problem.

What are these panels along the windows down the side here? Do these help pick up reflections?

Yes. These panels have high-end reflectors and mid-range absorbers on the front of them, and there is sealed Helmholtz resonator between the internal and external walls. Above the wooden ceiling in the rear end of the control room, we've put tuned traps in.

What other measures did you take to overcome the acoustic challenges of such a reflective environment?

Well, apart from all the windows being secondary glazed and some of the panels angled, a lot of it is common sense, really. You go and stand beside the speaker, put your eye by the midrange and the tweeter and look, and see where it's going to hit, and where you're going to get reflections. We've done that and made little panels that go up in the middle of the windows that are unobtrusive but are full of rockwool, which absorbs the reflections off of the glass. Same with the ceiling. A lot of that, with those mid and high reflections, is just common sense. You just need to look.

And you need to place your absorbent panels strategically.

Yes. You shouldn't make your absorbent panels too large, because it can become a bit too deadened and anechoic. You only need to pick up the reflections. So there's a lot of carefully placed and designed bits on the ceiling and all around the windows that are there and fairly unobtrusive, but they pick up first or second reflections.

What about on the ceiling above the desk?

The ceiling itself is plaster and then there's some ornate plaster detail. In the middle there is an 8' circle. And I've had another plaster circle put inside the ornate one, which comes down about four inches. I've put acoustic foam inside this. We've got cloth stretched over the acoustic foam, creating an absorptive area.

Did you have to take down the ceiling to add soundproofing?

No. This is the original ceiling. We only took this wooden one down in the back half of the control room, because it had a slight dip in it and needed re-fixing. See these bass traps here? We cut these apertures out to a specific size. We took the whole thing down, and put it up again. We cut these holes, and then we sealed halfway across the room in each individual void above the ceiling. Then we put rockwool in there. It is designed to absorb 125 cycles.

Is there any difference or separation in the floor between the studio and the control room?

No. There's acoustic foam in the void, but there's huge beams running through the boat. It is also about 40' between the rooms so we have no problems.

How has your monitoring system evolved over the years?

First of all, when we put the monitoring in, we used UREI 813s, with external crossover and Phase Linear amps, which for the time were okay. No one ever thought they were fabulous.

What was your general feeling about those monitors?

Well, they were alright. No one was ever very happy with them. We then, in I think the late '80s or around 1990, discovered ATC speakers, which were designed by a guy called Billy Woodman in England. He'd designed this soft four-inch midrange dome, when a lot of studio main monitors were

using horn-loaded mid-range. Never very pleasant to sit and listen to for any period of time. And these soft-dome speakers were a whole new area, really.

Does the four-inch dome midrange design on your ATC monitors also help even out the dispersion?

Much more so than the horn, yes. James Guthrie was the first person to come across ATC speakers; he raved about them and suggested we have a listen and check some out on the boat. He was already using them himself. We finally did, in I think around 1990. We got some ATC 200s. They were a huge step forward in terms of detail, clarity and neutrality. They appeared a bit bass light – but actually the problem was with our room, not the speakers – we needed more room tweaking. Since then, we worked over the years with the 200s, changing physical support, changing tweeters - they used to come with Audax tweeters and we then changed those to Vifa, as used on their smaller ATC50 speakers. They seemed to work in conjunction with the mids much more seamlessly through the crossover point.

So you completely customized them to your needs.

Yes. Eventually we customized them completely. We changed them from Vifas to Scan Speak Revelators, we changed the cabling several times, we moved and changed the cabinet position – height, wall proximity, angle, etc. We tried many different amplifiers and physical supports and their location several times, and in conjunction with that, we've continually worked on the room to give a large area behind the desk - so wherever you move about, the monitoring remains fairly constant and phase coherent. When you're at the back racks EQing or compressing or whatever, you're not getting any secondary reflections or funny phase problems when you move. It's taken us years to achieve that.

So there's a comfort in knowing that all the sound is equally distributed.

Yes, to a very large area behind the desk, which is not the case with most control rooms. It is very phase coherent when you move about, and it all relates very well. There's almost no change for a pretty big area behind the desk.

Did you try any other monitors?

We have tried almost all types, Genelec, KRK, PMC, etc. We tried ATC 300s [but] they did not work in this room. Before the refit, putting in the 88R, we tried a pair of ATC 150s, which James had been raving about. He replaced his 200s in Tahoe with 150s. And we tried those, with a bit of juggling about. For various reasons, we preferred them to the 200s. I think the size of the baffle on the front created less of a spike from the mids going into the tweeters and a single 15" driver worked better in our room than the 2 x 12"s. And our monitoring at that point, with the 200s, had been one of the best monitoring systems in the country. Now this was yet another good step forward.

So the 150s fit the specs of the room a bit better.

Absolutely, yes.

Why did you customize these ATC cabinets? Did you reconstruct them?

What we then decided was, actually, we didn't like the physical construction of the standard 150s that came from ATC, and just my experience with David and doing the Pink Floyd and his back line stuff over all those years... For his guitar sound, to get a really nice powerful and punchy guitar sound, with 4x12 cabinets, actually what you really need is some really heavily built cabinets that are very well braced. The difference between that and a regular sort of off the shelf Marshall, without any bracing, is quite considerable. And I talked to Nick about this. I said, "When I tap these cabinets, they sound a bit resonant to me. They must be absorbing energy. It can't be right, Nick." And he

said, “No, it isn’t”. We wanted a more defined low end. These weren’t very solid [knocks on unmodified, center cabinet] whereas these have been redesigned [knocks on redesigned left cabinet]. Nick drew up a design that also had an angled front for us so it was the right angle, because we had tilted the other ones forward slightly anyway. And we had ATC build these cabinets for us, to Nick’s design, which were far more rigid. They have the same litreage inside, although of course they are physically bigger to encompass all the bracing we’d put in.

What was the result with the left/right monitors after you did this?

Well, below 50 or 60 cycles, what it actually did was two things. In terms of volume, it gave us an extra 3 dB, which was staggering. We didn’t need this, because we were already at a very good, even response so it was taken out on the crossover. What it also gave was a lot more solidity and punch to the bass - we were moving more air rather than losing energy in the wood of the cabinet. These ATC bass drivers are called Super Linear drivers, and unlike most other makes their distortion level is something like 0.02 percent, whereas a lot of bass drivers, it might be 20 percent. So a lot of that stuff, when you’re sitting and you’re feeling it [pounds fist against chest twice], feeling that bass drum, that’s just the distortion from the driver. So they’re incredibly clean and clear. I think our cabinets help them by getting more punch out of the cabinet whilst retaining a clean sound.

Wow, big difference. Why didn’t you do that to the center monitor?

I haven’t got around to it yet – it needs to be differently designed – different amp location, etc., and it is less important, less critical than the main left and right. It’s on the list.

Can you explain how your shelf for near-fields helps?

A lot of engineers work with near-fields placed on top of the desk. What this does, if you measure the response, is to give you, around 1 k/1200 cycles, up to +6 dB more because you are getting all the reflections splashing off the desk. In any mastering room or normal listening environment if there is a three-foot sheet of metal in front of you reflecting frequencies up to your face - it is creating a false impression of what the speaker is doing. I think that your monitoring is your window to the world - why would you not want to be as precise as possible? What we’ve done, to help get the loading of the desk to try and help the monitor perform as expected at the lower end, we’ve built a shelf behind and attached to the desk, a few inches lower than on top of the desk. Then we can adjust the position and height of the near-fields on that shelf with slabs of wood, cones, etc., to taste. Over the top of the desk are sheets of acoustic foam positioned to create an acoustic shadow over most of the desk - from both the main ATC 150s and whatever near fields are being used, to stop any reflection happening off the desk from anywhere just above the faders. When you’re sitting at the desk, the direct path of any of those mid and top drivers is only hitting the desk just around the faders somewhere, so any first reflections are going past you at a low level and not up at your ears.

I never thought of it that way.

Common sense, really. We set it up so you’re only hearing the direct sound from the speakers.

How about the rear of the control room? How did you treat the acoustics on the rear?

In the back, in the corners, there’s some bass traps, and in the middle rear, the glass has been angled in the center to take reflections away from coming straight back at you. And there are various absorptive areas below and above the windows on the ceiling and on the seating.

And what about these?

These are ATC 50s, for the rear surround sound for doing 5.1 work on the main system. Also at the front - center of the desk another ATC 150 on an electronic scissors stand sitting on top of an ATC sub woofer.

Do you typically use NS10s as near-fields?

Lots of people use NS10s. We've got lots of different near fields. Currently NS10s and Auratones are set up as Stephen Fitz-Maurice has just been in, and that's what he likes to use. In terms of alternate monitoring systems, we have a whole selection of different near fields. We also have off to one side a very small JVC ghetto blaster, which you can access off the mix bus. This is interesting - no tweeters, no silly wide bass. It's very good for setting up quick mixes and listening without hearing too much depth of detail.

So here are your amps and crossovers. You have direct amps serving the bass, mid and tweeter, right?

They're all sitting on these Torlyte stands on these oak cones directly behind the cabinets. The speaker cabling is very short, it goes directly from the amps straight onto the drivers - three feet long.

Did Nick Whittaker help you out with this?

Nick always helps us... he's always measured this room. He has records back to 1986 and a set of measurement charts we can go back and look at. As you know, one needs a good reference point and whenever we start on any testing the first thing we always do is have him check the monitors with his analyzer. With that, he can tell if any of the drivers are tired, and if everything is lined up correctly and working properly. Then we will have a listen to some of our reference music. What you can measure on his analyzer isn't necessarily all you can hear.

To get a basis to work from?

Well, yes. For any meaningful evaluation you have to start from a known position.

I know that you have your own FM transmitter aboard. Has that been helpful in evaluating mixes?

For some people. We have our own FM transmitter with multi-band compression, so you can sort of simulate what it's going to sound like on the radio. If you know what things sound like in your car, you can go drive up and down the road, or you can go on site somewhere and tune into one of the radios on site, in any of the other rooms. In the conservatory, there is a domestic hi-fi there as well with an FM tuner - also on this you can directly select the mix bus from there in either stereo or 5.1.

Can we now talk about the desk a little bit? Why did you install the Neve?

Well, first of all we had the DDA AMR 24 and when we were working in '93 on *The Division Bell*, the band all liked working here - they wanted to stay here to mix. Andy said, "Well, I'd really want to get a desk with some automation on it." We looked for a window of opportunity and found that there was a week of school holidays in October. "You've got a week then, can you just change the desk?" [laughs] Anyway, we decided that what was available and easy to get at short notice at that time, which actually sounded quite nice, was an Amek Hendrix.

How many channels?

Fifty-six, I think. But the automation never functioned correctly. It was only a kind of stopgap thing. And actually, the mixing of the album drove Andy bananas, because... and later James Guthrie doing *Pulse*... because with the automation, the faders wouldn't actually return to the same place - some would creep up with each pass. It was a nightmare. It had to go or it was destined for the river. Roger Knapp, our maintenance chap, who used to work building consoles at Helios - the Rolling Stones Mobile, Island Studios, all the Eel Pie Studios, etc. - before coming to work for us he said, "Pete [Townsend]'s selling his VR desk that I put in Eel Pie a couple of years ago, and it's hardly

had any use.” I talked to David and explained that we’re all sick of this desk, and I want to buy this VR. He said, “Alright.” So I said, “Okay, thanks,” and that was it basically. We bought the VR.

Well, it sounds like everyone was tired of the Amek desk anyway.

As I say, it sounded good. Some of the older Amek desks were very good. This one was cheaply constructed. It had cheap components and the automation was dreadful. We got the VR desk, we put that in and we listened to it and thought, Well, I don’t know, it sounds all right, but it isn’t fabulous. We made various improvements, altered the grounding, and had Tim de Paravicini build some alternate valve mix buses for us. The whole monitor system was going through VCAs and JFETs. What was actually coming out of the mix bus and what you were hearing through the monitoring were two different things really, in terms of the clarity and sonic quality. So amongst other things we had Roger build a passive monitoring system for it, and we did some modifications to the power supplies and got it sounding as best we could. Then I considered the 88R, which we had heard some good reports about. I asked Robin Porter to come down, who had designed it at Neve. We asked him to bring a couple of channels and told him that I wanted him to put it into our bussing on our VR, and actually do a proper A-B comparison between channels on the two desks, which he was very happy to do. So we put a day or so aside and we did that. Robin came down and talked through the design, which he had been working on for a few years, which in theory seemed good. Talking’s all very well and good, but the proof of the pudding is listening of course. AT the end of our tests we were very, very impressed.

So you could hear the difference immediately?

The difference was significant. I mean, ergonomically, it looks like the VR desk, but actually everything about it is different. It was a vast improvement over the VR, and it does sound really good.

The detail, clarity...

Yes, the clarity. Depth of detail and information and cohesion, the noise levels, and it was designed for surround mixing, of course, which was another reason for considering changing the desk. Although we have more and better outboard equipment than most other studios, you know, it was still very important for the functions on the desk, the EQ and compressors to work very well. And they did.

How often are the compressors and EQs on the desk used on your 88R?

It depends on who’s working on it. That’s down to their choice and taste. I think the compressors are designed after the 33609s, and the EQs are modeled on the 1081s.

What did you ever do with the VR?

Well, I did a deal with Neve, and they took it back. I think Neve thought this was a pretty prestigious place to sell an 88R to, so it enabled me to get a very good deal with them, and insist on them giving us a good price on the VR with them taking it in part exchange.

So James and Andy were both very happy with the board?

Yes. Apart from the fact James dislikes any big console because it compromises the monitoring/acoustics in a control room purely because of its physical size – what do you do? Also Damon, of course, who is the studio assistant and runs the room, he has been here for seven or eight years now and is an engineer in his own right, so he’s been an integral part of the team for the last few years. Everyone was well impressed. In fact, everyone who’s come in and used it have been either people who already know what the 88R’s like, and they love it, or they’ve been on it for the first time here and are impressed. We’ve made some improvements to it anyway. Interestingly,

recently someone from Air Lyndhurst studios has said that they think their 88R sounds better than their famous vintage Neve.

Do you do much 5.1 work in the studio?

We've done a few 5.1 mixing sessions for both DVD and SACD. I think that as a format SACD sounds good and the DSD stream has a type of analogue quality about it. I think it is both logically and sound-wise a better system than DVD-A. These format wars always seem to be counterproductive to what is important with a lot of misinformation being released. James's 5.1 mix of *Dark Side of The Moon* on SACD is excellent. Let me play you some of it.

[We listen, and I am speechless in awe... best album on the best system I have ever heard, period.]
Look here... Neve put this quad pot control box in yesterday. Apparently we are only the second studio they have supplied with them. David asked for them specifically, he likes to be able to be hands-on and creative with quad panning. It enables him to sit in the middle of the 5.1 monitoring and pan where he chooses – you can alter the divergence – it's recallable and analogue!

You're kidding.

No, there's one in Japan and one here. This is the new 88R quad pot controller.

Pink Floyd has been doing quadrasonic sound for years... was the evolution to 5.1 natural for you?

Well, Pink Floyd invented quad and the quad pot in 1967.

That was controlled by the Azimuth Coordinator, right?

Correct.

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Were you always after a Neve? Did you ever consider an SSL console?

I talked to SSL, and they were very nice and offered us an unbelievably good deal, in terms of price, which ultimately was useful in negotiating with Neve. However they were unwilling to supply us with a couple of channels of the K series to allow us to do a shoot-out and to run proper tests against the 88R and VR in our own monitoring environment, where we could realistically make judgments. I could not budge them from their position. "Come to our place at Oxford, do lunch, have a listen here." They are not the favorite choice of either James Guthrie or Andy Jackson, the Floyd's engineers. Any time we've gone into an SSL studio before to work, they've always only used the desk for monitoring. They would use our external mic amps and compressors - a clean signal path to record. The good thing about an SSL was the way it was laid out ergonomically and the automation seemed to work great. But otherwise, in terms of the sound of the desks, no one liked them.

How would you describe the differences to your own ears?

I think certainly the old SSLs were noisy. You could hear the TV monitors, the EQ was horrible, op amp distortion... This sound, though, is appealing to some people and works for some types of music. But hey, lots of great records have been made on them. I don't know the latest series of SSL, we never got to try one, and I'm sure they must be good. They've got to be improved, because they weren't very good before.

[We walk into machine room, in front of console behind the chimney.]

This machine room used to be Fred Karno's master bedroom, right?

Yes. This is the original glass chandelier, and all these windowpanes, these are all hand-beveled crystal, each one. So all the noisy equipment is in here: the computers, the Pro Tools, SADiE, desk

supplies, tape machines, etc. Obviously the computer screens, etc., are next door in the control room. The digital audio from the control room to here is all in solid silver. It comes here into these Weiss anti-jitter boxes, which are supported on cones. They have got a Shakti stone on top of them [which has tuned ferrites and quartz crystals in – these help eliminate RF, EMI and microwave interference]. Twelve-volt power supplies power these boxes, and the people who supplied these have tested 30 different wall warts, all sounding different. So they picked the best, modified them and used high quality copper for the supplies. I have gone into specifics here to show you the care taken with one digital cable run to show you how mad we are. But the proof is in the pudding, as they say – if any of these things did not help retain the audio quality they would not be there. Our Pro Tools system here, which as you can see, is housed in this special acoustic-enhancing support cabinet. Let me talk about that for a moment. In my opinion there are a lot of misconceptions about digital audio. Disregarding the good points, some of the bad points are that it is almost impossible to do a digital to digital copy and retain the resolution; it is far more susceptible to the sound changing from many different reasons – RF, A/C mains, harmonic distortion and fluctuation, physical vibrations, etc., than most people realize. What we have tried to achieve is to get our HD system sounding as good as possible, given the parameters of what it is in the first place. We have spent many days listening and testing. Accordingly, every area of improvement has been implemented to the highest degree: all the A/C mains, audio cabling, digital cabling, anti jitter boxes, master clocks, physical support of the units, etc.

Did Tim de Paravicini modify these Studer A827s?

He modified some of them - both the record and the repro electronics. And the difference is considerable. I sent him a record/repro board for testing, and said, “What can you do with it?” I sent him all the circuits. Tim said that these machines are designed to serve a purpose and that purpose is for a blanket use across the industry - whether it’s television or broadcast companies, or whatever. They are designed with an element of playing safe to work in different environments without potential for destabilizing transmitters, etc., so they’re not necessarily designed for the very best audio performance. They cut off at 20 k. Tim’s opened up the whole top end and they sound really nice, as do his other modifications to the bottom end.

How about the ATR 100s over here?

This one I’ve actually just put the original electronics back on yesterday; just sat them on the top and plugged ‘em in. Of course these machines were originally designed to be 4-track and the way Tim has modified the machines to use his valve electronics still enables us to slot in the original audio boards in positions 3 and 4. One can plug the cables in from the penthouse, switch the head jumpers and go back to the stock electronics if desired.

So is this actually serving a purpose?

It can do, yeah. We just want to do some tests at the moment just as a matter of interest.

What exactly did Tim do to your ATR 100s, some valve work?

We had regular ATR 100 half-inch machines. Having talked to Tim many years ago, he had an old C37 half-inch Studer 2-track mastering machine, which he’d modified from quarter-inch to half-inch, then rebuilt the valve electronics to his design. James Guthrie was working in the studio, and Tim brought it down and we tried it out. Well, it looked like a piece of junk, but it made our stock ATRs sound more like a cassette player by comparison.

Really?

It was unbelievable. The difference between that ‘piece of junk’ and the Stock ATR was staggering. In terms of, well, everything - stereo imaging, frequency response, noise level, the sound. We

persuaded him to leave it with us - and we kept it here for nearly two years. I thought about the way forward for awhile, because, even though it's so old, and the tape transport didn't have any logic on it - so you couldn't press rewind when you're in play, or you'd break the tape - which is an accident waiting to happen. But it sounded so great, and I wanted to do something about this. Tim would eventually want his machine back and I didn't want to buy a C37 because of the logic and it will only take 10.5" spools. My solution was, because the ATR transport was very good, to ask Tim, "How about you build some valve electronics to go on these machines?" which I then kind of cajoled him into doing. This took a long time and a lot of hassling. It was a really time-consuming project for him. I ordered two machines to make it worth his while, which also gave us a second or backup if needed. Eventually, he did it. He did a great job - so we let him have his C37 back!

You get a lot of detail on the lower end?

Well, you can run it 15 ips with no noise reduction, but you know, it's -3 dB at eight cycles, and -3 dB at 38 k. And the image is rock solid. They sound fantastic. I know Bob Ludwig then bought one at Gateway Mastering. I don't know who else has got one - there's not many of them around. Fantastic sounding machines.

What did you mix down to before Tim's ATR 100s?

Before those we had the J37 on loan for about two years, before that stock half inches - ATR 100 and Studer A80.

Who actually does the tape editing in here? Is that something Damon does?

Whoever. Depends on the engineer. I've seen some crazy editing in my time. I remember, on *The Wall* album, it was James Guthrie. He did a window edit. Got out a ruler, marked the tape, I think it was eight tracks of drums for several feet. Cut down the tape and then cut it horizontally, then replaced it with another similar section. Eight of the 24 tracks, you know.

And it came out okay?

Brilliant. It's what's on the album,

I guess he's a real craftsman. How cool do you have to keep the tape room in here?

As cool as we can. We don't have any kind of dampness or humidity problems, which we thought initially that we may coming here, but it's not been a problem.

I notice you name all your machines....

We have three identical A827 multi-tracks here. Instead of calling them Right, Center and Left, we called them Reg, Cyril and Len - the boys. We have also got a fourth - Syd, the spare. I think I got naming the machines from Producer's Workshop in L.A. doing *The Wall*. They had 2-track mastering machines that were identical, Mork and Mindy, which we would simultaneously mix onto.

What are some of your other favorite multitrack machines that you've worked with?

The first time we actually realized that there was much of a difference between machines was when we started *The Wall* and Bob Ezrin came in from America to help produce it. We were in the Floyd's studio, with an MCI 24-track.

Did you have a couple locked up?

No, this was just before we knew of that. And Bob Ezrin said, "That machine sounds rubbish!" Everyone was rather taken aback. [laughs] How dare he say that about our machine! So Ezrin said, "Well, I've got this guy John Stephens in Los Angeles who makes great machines. And I'll fly one over at my own expense if you don't believe me, and I'll prove it to you." So this machine arrives

about a week later, and we did an A/B comparison between the Stephens and the MCI. Well, he was right. The MCI was rubbish. So that was immediately consigned to the storeroom and we then started working on the Stephens. And I think it must have come with a 16-track head block as well as a 24, because Bob also then introduced us working on two machines and later locking them up to mix. That was the first time we'd heard about it. Putting all the rhythm stuff, the drums, the bass on to 16-track, then bouncing them down and making a 24 track slave to continue to record on whilst putting the 16-track on the shelf until it was time to mix and then being able to pull it out nice and fresh, without any of the oxide having gone off the tape. This is still the way to get the best possible results today. We used the Stephens machine initially there in the Floyd's studio, then we went off to the South of France. The band decided to go out of the country for a year, due to an investment company ripping them off and potential looming tax bills. We took the Stephens machine and it didn't take to French power and lifestyle very well, so that very nearly went in the swimming pool there.

The Stephens bought it?

It was very close to getting thrown in the swimming pool. Steve O'Rourke, the Floyd's manager, got on to Abbey Road and said, "We need a Studer A80 tomorrow." Which was the best reliable, quick alternative, as we had no intention of using the MCI that was there. So one was taken out of Abbey Road and trucked out to us, which enabled us to keep working away. So that's when we first really became aware of the difference of machines.

For a long time, you have conducted test days here as a means of evaluating and upgrading the whole sonic infrastructure here. How did these test days evolve?

They are on average once a month. The way they are scheduled is either we have a need to test something from a particular application, or have found some things that we have an interest in. It will be a cross section of different stuff on a given day depending on what we've discovered and what we want to listen to, basically.

Can you tell us about when you got into testing cabling and patch days?

Well over the past eight or nine years, every month or so, we have a test day with a team of people which involves Andy Jackson, Nick Whittaker, the acoustician, Damon, sometimes guest engineers who have asked to come along for the day or that we have invited.

What about Tim?

Tim de Paravicini? No, he's not really part of the regular test days, he has been there on occasion when we've done them. James Guthrie, whenever he's in the country. What we do on these test days is we listen to everything, really, from converters to cables to mics, anything we feel like.

XLR connectors...

We did that more specifically when we got near, when we knew we were going to buy the 88R. And we've done years of testing already, in regards to cabling, physical supports to the equipment, different mains cabling, filters and all sorts of things like that. When we knew we were going to buy the 88R, I said, "Okay, this is our one opportunity to actually rip it all out and start again." Because you can't take the floors up, even if you discover a better cable and just re-do everything. You can only do so much with the equipment in place.

This was a perfect time then.

Absolutely – our one chance to get as good as we could. We underwent a testing program. We wanted to listen to every type of different connector we were going to use, every cable we were going to use and also pay attention to the physical aspects of the support of the all the equipment. All

this stuff we had learned had basically come from the high-end hi-fi field, which we'd been trying out over the years and discovered a lot of that stuff made a difference. Some of it was just different; some of it was detrimental but some of it was an improvement. So we went through and we listened to a whole bunch of XLR connectors, we listened to 20 different audio cables, because I needed 23 kilometers of cable to make our own patch bay and rewire everything in the studio... all the outboard gear and the machinery. We listened to 20 different cables. We directionalized them all first, of course. Every cable sounds different in a different direction. It's small, but it sounds different. And actually, the most amazing thing we discovered was when we listened to our technical earth cables, which we have going into copper rods in the riverbank. Our technical earth cables are just a heavy duty, high quality, regular, copper thick-sheathed cable. We'd been recommended to try this multi strand thinner cable, which had been woven like some of our audio cables.

These are cables for electric?

For earthing, woven to cross individual strands at 90 degrees to each other as much as possible to help eliminate RF etc. We listened to this, and we ran it straight out the door of the boat, over the bridge to the copper rods and we did an A-B and listened. Even the technical earth cable, you could clearly hear the difference from the original earth cable we were using. But even more surprisingly, we said for a laugh, let's just turn the cable around the other way and see if we can hear any directional difference on the technical earth cable. And we couldn't believe it, but we could.

What was the difference that you heard?

A difference in clarity, I suppose. One way it sounded a little middle-ier, and a little more distorted than the other direction. Anyway, back to audio cable. We went through all these regular cables that people wire studios up with that are fairly inexpensive. And the one that we ended up using was made by - this is for the 23 kilometers of cabling - was made by a high end hi-fi audio manufacturer called Van den Hul from Holland. I'd actually later found out they had originally designed this cable for the Philips Studio in Holland. Now because they had a lot of stock on the shelf, ready to go, I was able to negotiate a terrific deal. It only cost five times more than a regular cable would cost. But it was worth it. It was our one chance.

On the scale of what you are doing, you had to do it right.

And all the cabling is all, every run, directionalized correctly through the whole place. It's all running in the right direction in regard to the signal path. And every termination is made with silver solder rather than lead solder, because again, it sounds better. I had various discussions with James Guthrie about patch bays, and we needed to find out whether 1/4" sounded better than bantams. I got all the 1/4" and bantam pairs of sockets I could find from the different manufacturers, and got Roger, our tech, to mount them on a long strip. He wired them up, all in pairs, just so we could go in and out of them, using the same hi-fi cable we used for patch cords, using the same length of cable in the same direction on each socket with silver solder. So it was a very fair test. We went through and we listened to all pairs of sockets. What was very interesting was that neither the 1/4" nor bantam was better per se, but what was better was the manufacture, the contacts and the metal and the plating on particular sockets. Size didn't matter.

Were you testing for reliability as well?

Not for long term reliability - just sound at this time. It was quite incredible, and in fact it was one of the biggest differences of all the tests that were done for this project. There were bigger differences in that than we heard in other things. And among the worst were the patch bays that were being supplied with (not to mention any names) two very large console manufacturers. So together with the cable they used and the lead solder and those patch bays, we thought, "No, we're having none of it." So we did our own patch bays but we listened to Edac pins, XLRs, all the various different bantam

plugs, jack plugs, everything. Everything we were going to use, we just listened to all the different makes and bought what sounded best. That's really how the audio wiring was put together.

Can we talk about AC power? I know you have given a lot of thought and effort to power on the Astoria.

We realized many years ago the AC power, the mains as I call it, can make an incredible difference to the sound, to the audio. Most people, or a lot of people, are unaware of that. They think that if you plug something in and it lights up, fine, it works, with no conception that it could sound different.

What kind of power is coming in, and where is it situated?

It's coming in from a main electricity sub station, into our site where the phases are split. The studio audio has its own phase, which then it goes into a building where the voltage is stabilized. Then we balance it. I had some transformers made by Plitron in Canada, (who made the transformers for Equitek). And they made some special balancing transformers for us to our spec. Then, that's then sent down to the boat, to the distribution area, and everything is done shielded. The main runs are done in shielded high-end, directionalized mains cables for the whole studio distribution. We use a combination on different things for a lot of different mains needs. Nowhere in the studio do we use any standard plugs or leads. Everything is selected for all our equipment. For example, for the Pro Tools system the Shunyata distribution boxes have copper bus bars in them, and they're full of what they call space dust... this chemical compound which is a combination of a load of different elements that work at different frequencies to take noise out off the mains. It works really well. It is made with pure copper sourced from one particular mine because of its purity. It is then cryogenically frozen at -320 degrees to alter the molecular structure because it sounds better, with thick Rhodium plating on all contacts, etc. I know to some people this sounds ridiculous, but I can only say the difference is there to be heard and digital is where the biggest improvements are noticeable.

Since Astoria is essentially exposed to the elements, what kind of adverse conditions does this present, electrically speaking?

None. The mains are stabilized. We have a listening device to listen to the noise and distortion on the mains you can plug it into our studio mains anywhere, there is no noise. There is no audible harmonic distortion, noise, buzzing, anything. It's all perfectly quiet. There are many domestic filters you can buy that will take most of this noise away, but not many that actually sound good and are not detrimental to the audio spectrum.

The sound can be contaminated?

In most places it is done a lot of the time by non-audio electronics. There is also a lot of audio equipment that can do it as well. It was very interesting to go right through our studio plugging things in one at a time and discovering which units were causing a problem. You can plug one bad piece of equipment into the mains and it can put dirt, noise and harmonic distortion into the mains. That will go down the mains and saturate the mains transformer of another piece of audio equipment and, therefore, affect how that equipment is working. That will then affect how audio sounds going through it.

Wall warts can be a bad culprit and introduce all kinds of noise into the signal?

Yes. Particularly in this day and age there are a lot of cheap, bad power supplies about.

What is the lifecycle of these high-end cables you buy? How long will they last?

I have no idea. I have no idea how long the cables are going to last but they do take a while to 'burn in' and sound at their best. How long will we be here? The point was to try to build the best studio we could.

Are there certain manufacturers that have been more proactive in terms of helping you out with customization of certain components and gear?

Tim de Paravicini at EAR is a brilliant valve boffin and he does all sorts of custom things for us. Even down to the smallest things. Once I said to him, "Tim, I'm sick of when we're DI-ing bass guitars or telecasters or something, going into a DI box, going into a transformer, you know you've got this high impedance signal, going into a transformer, you're loading it down and taking the sparkle and the attack off it. Can't you design a DI box that doesn't do that?" And he said, "No problem!" Anyway, a couple of weeks later I got this little metal die cast box through the post. We plugged it in and A/B-ed it against all the different DI boxes we had - different valve DI boxes, ones we got from Abbey Road in the seventies, all of them- and this sounded better than any of them.

Didn't Tim build guitar interfaces for you and Dave?

Tim has built us a couple of two-channel valve guitar pedal interface boxes. So if you want to use a stomp box effect - send anything off the desk in to a stomp box - you can via these with level in and out controls. Simple but effective.

What are some of the more interesting customized outboard pieces you have?

This is quite unusual little stack here. What it has are two Decca equalizers, from Decca studios, which sound very transparent and have a very nice top end - you can select 32 k. It's very nice running across the mix bus, for adding some air. Very nice, very lovely round bottom end as well. Typically, most people use one across the mix bus, just to add a bit of air at the top and warmth at the bottom. That chrome unit with the gold knobs is by Tim de Paravicini - it's an HB4, Class A valve headphone amp.

What makes this piece special?

With a pair of Sennheiser 650 headphones, it provides a different very nice critical listening setup, which is very important, especially in this digital age. Not only does it give you a good audio picture to help see how the bass drum or the vocal is centered and see how the stereo spread works, but also, you tend to be able to pick up on whether there are any nasties - digital clicks or anything else that are getting missed, it becomes more apparent on those. It's a fantastic headphone system. That little JVC ghetto blaster next to it provides an inverted smiley face frequency response No silly tweeters or hyped bass.

Is that hooked into the monitoring system?

Yes, the main monitor bus. But what's quite nice if you're sitting on the desk, because it's off to one side. On the periphery you can just select it and hear it quietly through these little drivers. It's very nice to get a different viewpoint on the mix.

Quickly.

It's very good for quickly setting up a rough mix as well because there's so much depth and detail of information on the big monitors.

It can almost blind you.

Indeed. Although Ringo liked listening to his mixes better on that than the main monitors most of the time!

What about those EAR units right there?

There's quite a lot of those about. They're valve compressors. We've got eight here actually, because there's three in the store. These are Tim's EAR 660 valve compressors, which is his take of a Fairchild 660. Which you know, sounds slightly different, more transparent, but fantastic.

He built it around the original specifications of the Fairchild?

I'm sure, knowing Tim, he didn't do it by copying the original specs. "It's not bloody good enough!" The thing that he custom-built for us as a one-off, which is quite interesting, is a multiband compressor valve controller. It has very similar controls to a Tube Tech SMC2A. You use it with six of the 660s, three on each side to give a very high quality multi-band compressor. Andy Jackson used it on David's *Live In Concert* DVD. He used one side of that with three 660s on David's vocal. And on the other side he used as a two-way with a pair of 1176s on his acoustic guitar. That's another of the many things that Tim has built for us. Those are Klein and Hummel valve equalizers, UE 100s, which are quite rare old German valve cutting room equalizers, and then above those is a CLS222 Leslie simulator, which has been modified. Those little ten turn knobs on the right hand side enable you to set the bass and treble rotor speed individually of both fast and slow.

So you can completely control how quickly each goes in relation to the other?

Yes.

Are those LA2As over there?

Yes, they are LA2As. What's above the LA2As is a pair of Pye Compressors from the old Pye studios. Then there's a Fairchild 670, and an RCA 6ABA mono valve compressor above it, which is good sometimes for things like bass. Here's a Fairchild 666, which we've modified quite heavily. Here are some EAR 825 equalizers and there 822s. These 825s are brilliant.

What model are they based on?

What they're loosely based on are Pultecs. One 825 contains Tim's version of a pair of EQ1Ps and a pair of the ME5, giving two channel, five band all in one box.

Does Tim do anything special for your versions of these? Does he modify them to a further degree for you?

Not those, no. We've done some modifications to his 660s. These input attenuators - we put these multi-turn pots on and did a power supply mod as well. These are quite interesting, these 1176s, they're Haecos, made by UREI. They were made for radio broadcast and the meter used to be remote. See the four holes? There would be a blank panel in there just with a light showing you it was on.

What's the difference between the ones made for radio and the traditional one?

I think only that they used to have locking pots on instead of the usual pots and knobs and they are painted grey. I don't think there is any difference in terms of sound. Another interesting thing, down there, are the Telefunken U73b valve compressors, the grey one's same size as a V76. Roger modified these, added more controls. And then there is an Alan Smart compressor.

Damon: The crush control can really make things stand out in the mix. It adds FET overcompression and EQ, and can really make it cut through in a nice way.

Phil: The Thermionic Culture Phoenix is interesting as well. This is just another different, high quality valve compressor.

How do you manage the noise factor on some of these older pieces?

I wouldn't say the noise is nonexistent. Every piece is looked at and assessed individually. We've done mods to things. Everything is kept in top working condition.

What are James' favorite pieces?

EAR 825s for EQ and James likes the 1176s and Tim's 660s for compressors. James said he can record anything anywhere if he had some 1176s and some 660s. I remember when we were in Los Angeles, doing *The Wall*, and he was trying to hire 1176s. Everyone was going, "No, no. Use dbxs!" And he said, "No, don't like them. I want 1176s." At that time in America, they were cheap and unpopular, and those we came across, nobody was interested in them.

What are these?

Not many people know about these or are frightened off by the German on the front panel. Consequently you can pick them up very cheaply. The Klein & Hummel UE 400, we have four of those, and we have one UE 200. They are discreet German '70s cutting room EQs and they're not very common. James came across them, before we did *The Wall*. We've always used them with the Floyd since then as equalizers, particularly on drums, tom toms and things. They sound very full and very clean. Very good.

Damon: They're great for carving stuff. Really narrow Q. You can just carve stuff out.

Phil: So we have four of those stereo units, and we have one UE 200 seven band mono unit. I think Andy used this on double bass on David's Live in Concert thing. Good to get in there and sort it out if you've got a problem.

Andy Jackson has set up a mastering studio, as you said earlier. Were you involved in helping set this up?

Not directly. He's had it set up for a year, year and a half. But Andy's here a lot. And we talk a lot. So all this stuff that we discover testing, it all happens together. We're all a team. He is really, out of the entire team, the man I suppose with the most important ears, if you like.

He favors the ATCs as you do in terms of monitoring system?

Yes, absolutely. Everybody in this organization uses ATCs. They are the best monitors that we have found. Mark Knopfler has ordered two sets of 5.1 systems for his studio – he heard them here first.

What other pieces here might be good for drums? Do you use the RCA for kick drums?

Damon: The 162s dbx are used on a lot on kicks. Snares, the 2254s Neves are nice.

What about the APIs?

Damon: Yeah, absolutely they are used. Depends on the kit. Each kit sounds so different.

Phil: We've modified these APIs to sound a bit more transparent. Here, get a picture of that. See what he's going to do is take pictures of all this stuff, then go buying the gear and build a studio!

I could work my whole career and maybe buy *one* of these pieces! Phil, how often do you "drop in" on sessions that occur here? The "Whiter Shade of Pale" session that John Leckie did here interests me. Were you guys on hand for that?

Tim de Paravicini was here. We all were. John was mixing four tracks down to two. Tim brought in a tweaked valve 4-track machine for the job.

When you're mixing an old 4-track tape like that, what sort of gear do you reach for?

Damon: What tends to work very nicely is Tim's 825 EQs, and the Decca EQ probably. With Tim's 825s, you can really wind them in and it's never going to make your teeth cut. You can take it as far as you like and it just sounds great.

Are these your converters here? How important are these in your set up? Did you do A/B comparisons with the converters?

They are critical. We did a bunch of tests, though we haven't done any tests on converters for a little while. What we bought at the time were these units made by a guy called Daniel Weiss in Switzerland, who makes mastering room equipment. Also, James Guthrie has his own studio. We don't necessarily always go through A/B-ing everything. Because if there's something available that James has, he's thoroughly listened and tested it already. As was the case with the Ed Meitner EMM labs eight channel DSD converters we use for SACD applications.

If James endorses it, it's probably okay!

One thing you learn over the years is that if James says it sounds a certain way, it does. It's so frustrating at times, because he's so much of a perfectionist. That's a kind word... but he is always right.

Is James autonomous in the way he works? How much are you and others involved in mix sessions?

Well, it's him doing it. Also, he works normally at the level we're speaking. Not very often will he turn it up loud. Often, whereas a lot of people while they're working, they're concentrating. You don't even want to walk in the room. Its funny, with James, he can turn it down, have a chat, and carry on. He seems to have this incredible ability to stop and pick up exactly where he was. The other thing is, he has a fantastic acoustic memory.

He can remember how things were placed?

He can walk into this room, not having been here in two years, just while walking in and talking to me, he can hear the acoustic changes we've made to the room.

Spatial changes?

Absolutely. He's unbelievable.

Damon: I remember Andy said James was doing something, I can't remember who the artist was, and he mixed a track in one studio. And about three or four months later, they needed to go back and revisit it. Completely different studio, completely different set up. Nowhere near ballpark. He hadn't even listened to the original. Got the mix from memory and it matched perfectly.

Phil: Yeah. He does have this incredible ability. And as I said, it takes years to realize actually. If he says it doesn't sound a certain way, it doesn't. He's right.

As you said earlier, the caliber of all your equipment means nothing unless the person using it is experienced and can use it in the correct manner, right?

Absolutely. What we've done is put everything in place to enable someone to make a great sounding record, but it's down to the engineer - what they know, how experienced and how good they are. It comes down to how they record it as well. We've had people come in, well-known artists, with stems on Pro Tools saying, "Can we put it through your desk and make it sound better?"

Shit in, shit out, as you said.

[Laughs]. Well, yeah. You can't polish a turd. The basic rule and bottom line is that you cannot regain lost resolution. And that's it. You know, you're on a downhill slope once you start not capturing everything in the best possible quality you can and then retaining it throughout the recording and mixing process.

[Phil shows me around other sections of the boat. We walk into the marble bathroom.]

This is the marble bathroom. Small though it is, we occasionally record in here.

I heard about this.

This is the only studio in the world I think where you can sit on the toilet and feed the swans.

You really work with the space in all ways. Amazing. You didn't change anything.

[We walk into very small bedroom.]

This doubles as a little rest room or you can put a screen or a laptop on here and then use this as a little additional control room with a Pro Tools rig where you can edit or even record directly from the studio next door.

I think you said Ringo worked in here?

They recorded three tracks in there. Just ran some cables under the door from the studio next door.

What a charming, cozy place to edit or work.

[We walk into another room.]

This used to be the kitchen - the galley, with the original tiles. It's the kitchen where audio people have moved in.

[He begins to open silverware drawers and cupboards.]

Valve mic power supplies, percussion, things hidden away, so you don't really see them.

Sheesh. Stomp boxes, all kinds of stuff. No spoons? So I take it no cooking gets done in here?

Not very often. We have another bigger kitchen in the conservatory.

Doesn't David use a Blues Jr.?

No. We have one here but it varies what he uses. He's using a '56 tweed Twin and a '58 tweed Deluxe at the moment. Also, what's really nice which we just got is a new Victoria amp - tweed Double Deluxe.

Was zoning or planning ever an issue with this place?

Well, it's officially a houseboat and the caretaker lives on board.

[We walk into the studio room.]

This is where you track all the vocals and everything.

This is the main live room, which is pretty small and not very live, as you can hear.

This is beautiful. It's all about the ambience, isn't it?

We did the *Division Bell* in here, except for the orchestra and grand piano.

So you never had to make double walls or reinforce this recording area to increase noise transmission loss?

It's fairly solidly built. We haven't had any issues with noise coming in or going out. Obviously there is a little leakage with loud guitars or drums going out, but this is at a fairly low level and is masked by the ambient noise from the road. We've had the Floyd playing in here live quite a bit actually. Rick and his Hammond and Leslie up on that stand there, Nick's kit here, and David with his amps over there and pedals here.

What is this revolving speaker?

This is a Maestro Rover. It has a 6" speaker that spins around. David used it in conjunction with his Hiwatt SA212 and '59 Bassman combos when recording *The Division Bell* and I had built some more robust versions that I called Doppolas that we took on the following Pink Floyd tour. It is set

up in here now, with a mic on each side of it as an effect to send a signal from the desk through this, then back through the mics to get a bit of movement. You can alter the speed from nothing to very fast. For surround sound, we put four mics on it.

In general, how have you gone about mic selection on the Astoria?

Both James and Andy have grown up in the age of recording all kinds of music and bands - rock bands, jazz bands and all sorts of things - so already we had accumulated an array of good microphones at previous studios, and that was bolstered at times by looking at the list and thinking, "What do we need that we haven't got?" Things like a good Neumann M49, which is a nice acoustic guitar, female vocal mic. But of more recent mics, the only thing we bought that we thought was really good was a couple of the Sony C800Gs.

Did you record Rick Wright's *Broken China* in here?

We only mixed it at Astoria. We didn't track it.

I know you recorded Pink Floyd's drums in here. How do you record drums there when you do?

The room works very well, but obviously it's not a live ambient room. There's a place near this corner of the studio. By putting the drums near the corner, they tend to get a little corner loading so they sound, thicker and fuller - like a speaker would if you placed in a corner. It would increase the low end of it.

I recently spoke to John Leckie, who actually said he prefers recording drums in smaller rooms these days. I guess it partly comes down to personal taste.

Yes, but it depends what sound you are after. We've got some great drum sounds in here. We have a kit that we keep there, actually, which is one of the Floyd's kits, which was used on *The Division Bell*. It's a Drum Workshop small kit, and it sounds fantastic. You've got to think also, it's in a small room. You don't need a lot of mics. Usual choice here is a D30 on the bass drum, one of various snare choices and a pair of Coles 4038s.

Overheads?

Not really, just over the top to pick up the kit - of course positioning is critical for balance and to ensure no phase problems: usually about four or five mics at the most. But we have about 120 mics to choose from. We have 30 channels of modified Telefunken V72, V76, V77, V78 valve mic amps. We've got those new Neve mic amps, the modern version of 1081s, the remote mic amps that come with the 88R they sound good as well.

Our mic cabling is really high quality stuff. What you realize, about recording anything or doing anything in the studio, is that everything makes a difference to the sound. We try to ensure everything in the signal chain is the optimum - even the power supplies for the valve mics sit on cones on Torlyte stands. It all helps.

[We walk back down the hallway towards the control room.]

I have never seen a studio that has this level of attention to high fidelity and sonic detail. The more I hear you speak, the more this place reminds me of a mastering studio.

Well, you are absolutely right. The thing is though, what you must understand is, you can't polish a turd. Whatever it is - an instrument or somebody singing or whatever - what you have to do is try to retain that; you cannot regain lost resolution. It's not as good recording on a load of crappy equipment and trying later to improve that. What we've done here is try to optimize everything that has any relation to the audio quality.

Even if it's an improvement to a small degree, that's very important to you now.

Sure. Anything that's an improvement is an improvement. Even if it is fairly minor. How it's implemented depends exactly what it is and how feasible it is. Some of the upgrades are in very small increments. Doing the best you can in every area. The sum total of this is to get more sonic clarity and depth of detailed information.

In general, what has been the hardest "link" to improve upon at the Astoria?

I don't think anything was hard really, because you have to do it piece by piece when you discover things. With the studio, when it's already installed, you can go along and change things, which is what we've done and improved it over the years. But then when we went to put the new desk in, it was an ideal opportunity to rip everything out and start fresh all the way along the line as it were.

You are very technically advanced.

But I'm not, really. I'm not that technical. It's really about common sense and the desire to improve other than any great technical ability as such. I am aided by the team around me, who I've put together along with great engineers with great ears, who know what they are doing.

I bet you could not have imagined where you would be now, looking back to where you were in '74.

Absolutely not. Who in this business has worked with the same people for thirty years? It's fairly unheard of. I always thought when I got to 30 I'd get a proper job!

It's clearly turned into more than a proper job. You've gone out of your way maintaining the beauty of this very historic vessel.

I've always had some interest in old buildings, so the last thing one could ever think of is in the initial stages were changing things. David was always adamant. He didn't want anything changing within the structure of the boat itself. Which was how I felt. There would be no point in having this boat if we gutted the inside and did it differently.

The love for what you are doing here is very apparent.

I think it is partially the love, but also partially because it is Pink Floyd. And of course, Pink Floyd has always been known for good sound and visuals and this comes from the band members. Having worked with them live, and being lucky enough to be in the studio with them making records, I've been a keen observer of what's going on. There is a drive in that we've got to make it sound as good as possible at the start of a project live or in the studio. This is discussed and a system or method decided upon. The way in which work is then gone about by the people doing the job. It's got to be done properly. And things are recorded properly – corners are not cut, therefore there is no room for it not to sound good. Being around the engineers who have worked with the Floyd, and being great friends with some of them as well, one knows from them over a course of time how things should be done and this will continue to be discussed through both the project and in general. It's simple - outside of the band you need three things: excellent, talented people, excellent equipment and the budget to pay for it. r

Many thanks to Phil Taylor for obtaining permission for and taking the time to do this interview.

Jeff Touzeau is an independent songwriter/producer, and owner of Westchester, NY-based Hummingbird Sound, Inc. j2zo@mac.com

Can you talk about some of the challenges the group has faced with maintaining the standard of quality that you have strived for during the pressing stage? How is the standard maintained once the album leaves your hands?

Once audio is in a digital form and leaves the studio or mastering room, there is almost no hope of retaining the resolution through to the end product. I will give you one of many examples: Pink Floyd's *Pulse*. When this was ready to be manufactured and was ready for release, neither Sony nor EMI could make good enough sounding CDs. Their plants were incapable. Pink Floyd held up the release for three months and the best quality that we could get at the end that which was OK'd for release, was compared to what we had given them to produce was about six or seven on a scale of ten. Imagine the immense pressure from the record companies - a big band release potentially selling millions of units of product, - which is how they see it, not a lot to do with music - unable to be released week after week. Whilst daily supplying more test pressings for evaluation, James Guthrie seems to spend half his time these days on the Floyd's behalf re-mastering and listening to test pressings to approve, some of which are appallingly bad. What a waste of his time to have to do this. Of course Pink Floyd are one of the very few acts who have both the clout and power, plus the desire to make sure that at least some of the material released is of a good enough quality. Most artists out there just get what they are given and this can vary immensely.

For many, it is a mystery as to what occurs once the master is left for pressing. How has it worked with Pink Floyd and what are the challenges?

Almost inevitably, on each occasion, the changes are made for a Pink Floyd run at the pressing plant: longer cooling times, re-clocking - whatever James has got them to change at the plant for our initial runs, get taken out as soon as they are done without telling us. The pressing plant manager or record company executives are only interested in how many units of product they can output in a 24-hour period. They are not interested in the quality, because it takes longer to make discs sound better and a digital copy is perfect anyway [laughs]. When we went down to EMI's plant in Swindon, they did not even have a pair of monitor speakers there. They could have been canning beans. This huge misconception that once it is digital it sounds the same regardless is rubbish. There is nothing further from the truth.