

Furniture music

You've spent months contemplating the equipment that will grace your studio, selecting the right software, ensuring that all the necessary processing will be in place, and checking that it's compatible with itself and your needs. But possibly the most difficult part remains. What do you put it all in and how do you lay it out?

KEITH SPENCER ALLEN



THINGS ARE STRAIGHTFORWARD for the larger studio as furniture layout is dictated as part of the acoustic design of the room, with the geometry of the monitor wall determining where the axes of the monitor speakers cross. In turn this confirms the optimum listening position for stereo and the free standing console sits somewhere in front of this. Any other equipment in the room should be placed systematically about the room's central axis, so the racks of equipment have to follow to the left or right. However, this restricts access and provided there is room the current preferred option is centrally placed racks parallel to the console but behind the operator. Their tops double as space for keyboards, temporary equipment and refreshments. Any equipment that doesn't need to be in the control room, and anything noisy, is banished to a machine room. The only real decision is whether to have wings on the console for producer space and the host of equipment remotes and monitor screens.

Far more difficult is designing the smaller studio environment where the console might not be free-standing and may not play such a pivotal role. While the large console hopefully has ergonomic considerations built into its design, the smaller facility needs to think of ergonomic requirements across all its equipment in terms of positioning, height and distance from the operator.

If you ever have a kitchen designed, you'll find that

there is plenty of research that shows what the preferred positioning for sink, fridge, and oven are. Similar data is not available for studios and it's possible that your choice of equipment is unique to you, but finding the right positioning is important as it makes sessions run more smoothly and with less stress. You can borrow one technique from the kitchen designers, with their plan grids that help determine what equipment would be within reach while sitting. From this you can decide whether you prefer equipment arranged in a straight line, so that you do the moving, or in more of a wrap-around format.

You now have to decide the extent to which you can stack equipment in front of you. The challenge is to keep all the needed equipment within easy access during sessions but if you are using wall mounted monitor speakers there is a limit to how high it can be presented in front of the operator. Nearfield monitoring does open up more possibilities. My recommendation is to recreate possible arrangements with cardboard boxes standing in for the major items of equipment, position them in your considered locations and then go through all the motions of a session until you find a situation that seems to work. (Yes and hope that nobody walks in on you while you're doing it. Ed)

You are now halfway there. The difficulty is that equipment breeds and before long it will have doubled. At some stage you will need to commit to a furniture system. Your options are to choose between standard

available products, custom build, or DIY.

The DIY option can work very well if you are competent at working with wood and sheet materials. You know what you want and you can build it at a low cost - at least in materials if maybe not in terms of time. Unfortunately audio equipment can be very heavy when fitted into compact furniture so a knowledge of metal engineering techniques is probably a necessity.

Custom build is the easiest. You let someone else with the experience worry about fitting your equipment into the space that you have. You will need to be sure how equipment expansion will be handled within the design while making sure that you have at least laid down the basic workflow requirements to the designers. The big advantage of the custom approach is that it can create a totally unique appearance or image for your studio, and in some circumstances that is a powerful justification of the fact that this is also the most expensive option.

It's always worth looking at the off-the-shelf furniture products. Unfortunately you soon realise that many are just reworked computer workstations, equipment primarily designed for video editors, or so multipurpose that they don't work with audio equipment. Frequently there isn't sufficient mixer space, not enough provision for multiple audio cables, and shelving doesn't hold anything you might want close. With space inside the ergonomic reach of the

Rack lore

As with most long established standards, the familiar mechanical rack format began life in the early days of the telephone industry. The need to house vast quantities of switching equipment led to the development of a mechanical specification such that any piece of equipment from any manufacturer could be mounted in a standard rack without the need for modification, drilling or dismantling. Originally known as a Relay Rack, the height of panels was measured in units of 1.75-inches (a rack unit) with precise details for the positioning of screw holes.

In later years international standards from the EIA and the IEC formalised the rack dimensions, although only in terms of the compatibility of rack and equipment mounting. Importantly, while they did not include any recommendations for rack depth, widths of 24 and 30 inches are permitted, in addition to the 19 inches the audio industry has adopted.

Mounting rails can come in two types. The most common is referred to as Universal Spacing where the rail has continuous punched mounting holes. The alternative is known as Wide Spacing with punched holes positioned only for each rack unit panel (i.e. no in-between holes). In practice it makes little difference which is used - the Universal format allows 0.5 rack unit spacing between equipment if needed although some old ('classic') equipment that follows the Wide Spacing dimensions precisely can sometimes need a little 'patience' to locate reliably.

user being at a premium you should be looking at designs that maximise this while maintaining the flexibility for expansion.

The most useful approach to standard studio furniture has been adopted by several manufacturers who offer a range of central sections for the key studio components. These can then be expanded by further sections that attach to either side, together with accessories, such as under-desk racks, desk top racks, shelving and nearfield monitor supports. Raxxess' Config-U-Raxx modular studio furniture system is a good example of this. In contradiction to an earlier comment, Middle Atlantic Products' Edit Center range is actually video studio furniture that is flexible enough to make a useful audio installation.

A slight variation on this theme are those companies that have designed a central section around

specific items of equipment, such as Pro Tools, and O2R and Mackie consoles. One of the problems of housing smallish mixers is that if placed on a desk top they are not only higher than the preferred operating height but also at a different height to your other equipment. Ideally they should be inset into the furniture surface. Californian company Omnirax has a wide range of product specific furniture where the central section is tiered so that a mixer space is inset at a lower level into the front of the furniture making its surface flush with the general equipment level. This can then be accessorised as required.

Operationally it is better to design furniture around a specific equipment/operational combination but it does mean that changing a console may mean a change of furniture. A less specific housing may be able to be adapted - it's the user's trade-off.



One possibility that shouldn't be rejected is that of the standard 19-inch rack. Many things can be placed in a rack; they can be moved around at will, equipment can be repositioned within the rack to suit, and depending on the rack style, they are transportable. The sheer variety available in the supplier's catalogues is immense - vertical or angled, fixed or on wheels, portable, open racks, wall box racks, and rack trolleys. And almost every type of accessory is available such as Studiospares' keyboard trays, a microphone storage draw, sliding rack trays, media storage shelves; and Canford Audio's patch cord rack and wonderfully inventive fridge and wine bottle rack adaptations.



The basic 19-inch rack is very versatile and can form the basis of a studio furniture system provided the mixing console can be accommodated. Even for those choosing another route, keeping signal processing in movable racks, so that they can be brought into reach only when required and then returned to a distant corner, is a very practical solution to the need to keep as much equipment in an ergonomic circle of the user. If the incoming rack has all its connections on a multiway and a single power lead, it takes just seconds to install.

One area that mustn't be overlooked is that of chairs. It is worth looking at the Health & Safety recommendations for office equipment and the suggested minimum requirements for adjustability and



height. Office equipment suppliers also tend to rate chairs according to how many hours they should be used per day before the user starts to notice discomfort. The studio presents a different situation because chairs may be used for two to three times as long per day as those office chairs are designed for. It is therefore worth investing in something effective for your health's sake. Exactly what that is depends on what suits you. Chairs such as the Aeron range from Herman Miller, and other equivalent adjustable-in-every-parameter designs, can eat very heavily into a studio budget but money spent on good seating makes it easier to work for longer hours while helping prevent long term back problems.

Returning to the equipment housing side of studio furniture, there has recently been an interesting development from UK-based AKA Design, an interior design company that has been responsible for all or part of the appearance of many music and post studios

Machine room in a box

To silence the multiple computer fans and disk drives that collect in a control room there are two alternatives: buy the necessary extension kits and place them in a separate area/machine room; or place them in an isolating/noise reducing rack close to where they are used.

There are a number of manufacturers of these products, such as Raxxess' IsoRaxx and Silent Source's Sound Barrier Box, either in the form of 19-inch racks or for free-standing items like computers. Most have front and rear doors, varying types of internal sound absorbing material, and





throughout the world including Grand Central, Olympic 1, Hit Factory NY, and Strongroom.

Although a custom designer, it is now offering a standard range of modular furniture based around the Digidesign Pro Control console. There's a choice of centre section configurations, plus side sections that can be added as required, while working height is adjustable between 720 and 755mm. AKA has built 35 bespoke consoles for Pro Control systems and derived this product range from experience. The furniture is self-assembly with the possibility that it can also be disassembled should it need to be moved. And, in keeping with its custom background, it will be offering

some form of sealing arrangement around the I-O cables. While they may do what is intended, shutting computers in an insulated, semi-sealed box requires the addition of fans, to prevent temperature build-up, and an air inlet. So although these enclosure fans are much quieter and generally slower running, you don't actually get rid of fans completely.

Another Californian company, Noren Products, has been showing AcoustiLock, a virtually airtight isolated casing that uses the company's proprietary Heat-Pipe technology to collect and conduct heat from inside the case to exterior cooling fins where it dissipates by convection. While effectively silencing problem equipment by up to a claimed 38dBA, the model ACL-NC's resulting cabinet is physically large and isn't the cheapest option. Accordingly they have added other systems with slightly lower amounts of noise reduction, but varying amounts of cooling capability. The ACL-RC can handle the heat output of two Macintosh G4 computers with drives by using heat-pipe technology but then electrostatically drawing air over smaller rear-mounted fins creating greater cooling capacity and reduced costs.

If alternative space for noisy equipment isn't available, such systems present a worthwhile alternative to create a low-noise environment. The additional spin-off is that a sealed box is also dust-free, which most sensitive equipment would welcome.

user specific finishes or even the customisation of just a single part of the range. Costs are estimated at about 50% of a full customised installation while still retaining a high degree of flexibility - AKA estimates about 400 system permutations within the range.

Studio furniture will always be a difficult area to get totally correct. Walk through any new studio, even the mega facilities, and you'll find areas where the staff have had to improvise because a requirement arrived that hadn't been foreseen.

Real analysis of what you are doing now, and will be doing next year, is required before committing to a specific approach, and then retaining the required degree of flexibility in your choice to accommodate the unexpected, which you should expect. ■

