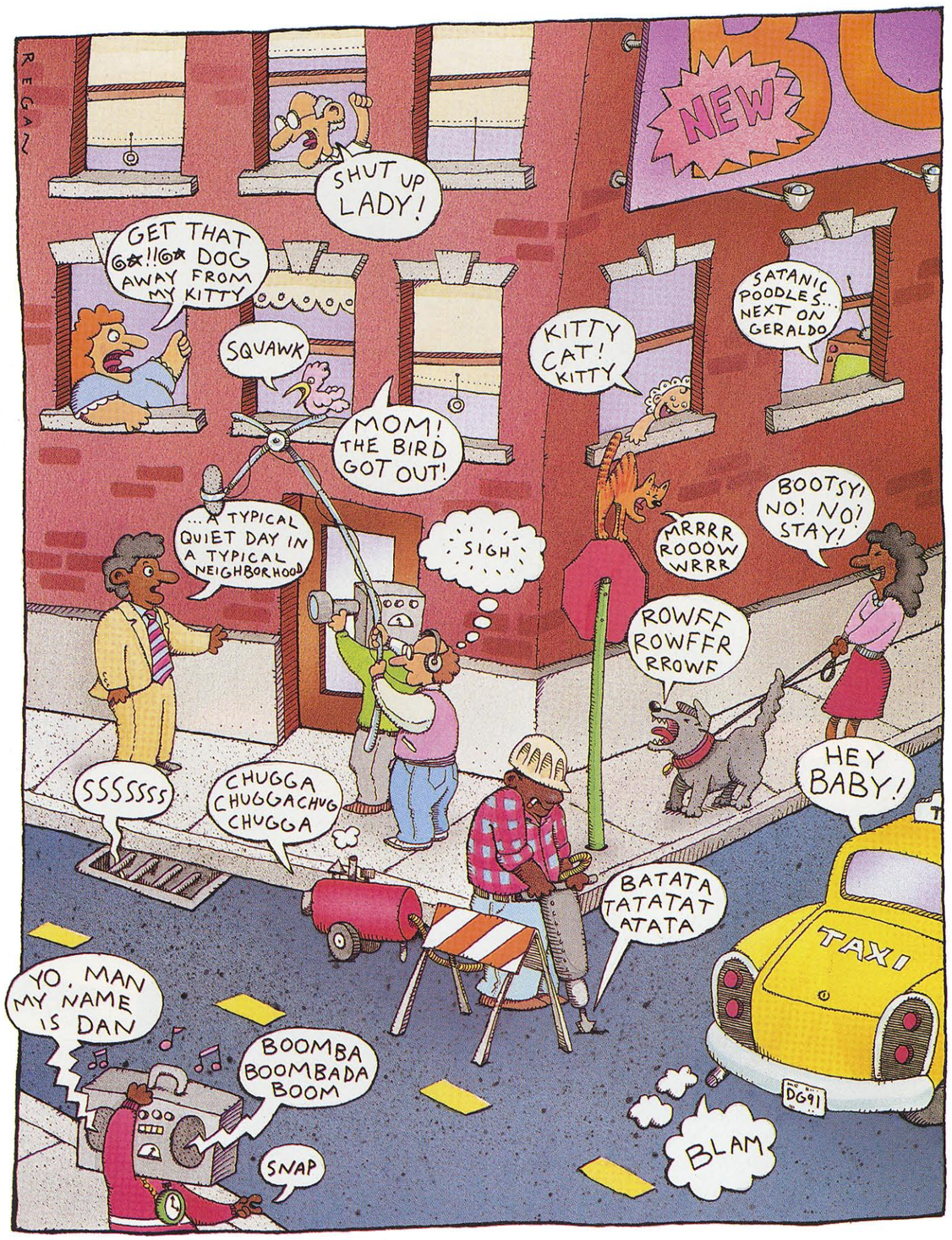

Illustration by Dan Regan

ON THE ROAD AGAIN: LOCATION AUDIO

By David G. Meyer

There's more to shooting on location than meets the eye.

Corporate audio-video production is full of challenging situations. In the course of one work week, a facility may have to produce in-house sales-training tapes, videotape a board-of-directors meeting, provide the facilities for an outside production and do a field production at a remote manufacturing site. This article will focus on the audio portion of location recording — any production that is not done within the confines of a studio. We will address such issues as microphone choice and placement, equipment and the special considerations of environment when recording audio on location.

Your goal

Begin with the simple, but not always easily achieved, goal of "clean audio." In audio lingo, the word "clean" means free from distortion and other unwanted sounds. If sound is garbled, unintelligible or otherwise imperfect, it is not clean. If you start with clean audio, you finish with a superior product.

In the quest for clean audio, remember that bigger is not necessarily better. As with video gear, the ideal equipment should be as compact and portable as possible. It's not always necessary to buy all new equipment, however. An old $50 microphone, properly placed, will give much better results than a new $500 one placed improperly. The emphasis should be on simplicity; get the best possible sound in the easiest possible manner. This is especially true for field production, when time is of the essence and you rarely have the opportunity to "do it until you get it right."

Meyer is with the Audio Video Systems Division of Peirce-Phelps, Philadelphia.

Acquiring Software?

Consider the Legal Issues Before You Buy

When negotiating software maintenance agreements, users have considerably more leverage at the time of acquiring the software than they will ever again possess.

By Thomas R. Mylott III

In negotiating for software, many issues are equally if not more important than price. The typical user, though, rushes ahead with blinders to squeeze out the last penny from the software vendor without first considering the other issues involved with acquiring software.

The written agreement between vendor and user governs software acquisitions. The rights gained or lost in the software acquisition agreement can determine how well the software performs initially as well as what a user can do to maintain a desirable level of performance.

Many companies obtaining software believe that their agreement with the software vendor is a formality, legaleese or wordsmithing. Many vendors encourage this attitude. But, these agreements are far more critical than most users think. A direct connection exists between an acquisition agreement and how a user fares with the software, and these agreements have both long- and short-term significance.

Companies acquiring software are free to ignore what they sign and to disregard advice on the subject of software acquisition. Yet, wallowing in ignorance should be made inexcusable.

One way to better understand a software acquisition agreement is to examine these agreements from three perspectives: performance issues, license issues and support issues.

How software performs is vital to a user. The user acquires a certain type of software based on the functions it will perform. If the software does not perform according to a user's expectations, then a user would want to compel the vendor to make the software perform as intended. The easiest way for the user to secure the expected software performance is to include those expectations in the software acquisition agreement.

The first step to achieving this goal is ensuring that a specific description of the software or specifications are incorporated into the agreement. There are specifications of varying usefulness associated with most software, and most software has some specifications available for an end-user. Someone with sufficient technical knowledge of what the software's functions should be needs to review the vendor's specifications.

Specifications can exist at two levels: detailed and functional. Detailed specifications will contain specific information on the software. These specifications tend to focus on what the software is rather than what it does, and they might contain screen formats, user codes and report layouts. Functional specifications, on the other hand, concentrate on what the software does. Functional specifications will describe results more than means and may describe such things as the purpose of a screen or the use of a specific report.

It is not necessary for users to differentiate between the detailed and functional specifications, but rather to obtain both kinds. In general, specifications describe the products the user is about to acquire.

If the acquisition agreement fails to describe the product, how can users hold the vendor to any performance criteria? Once a user has included the software's specifications in the acquisition agreement, a vendor's performance promises can really mean something. The vendor should warrant that the software will perform according to the specifications.

Although including the specifications in the acquisition agreement is necessary for the user's protection, it is not sufficient. First of all, the specifications supplied by the vendor may be

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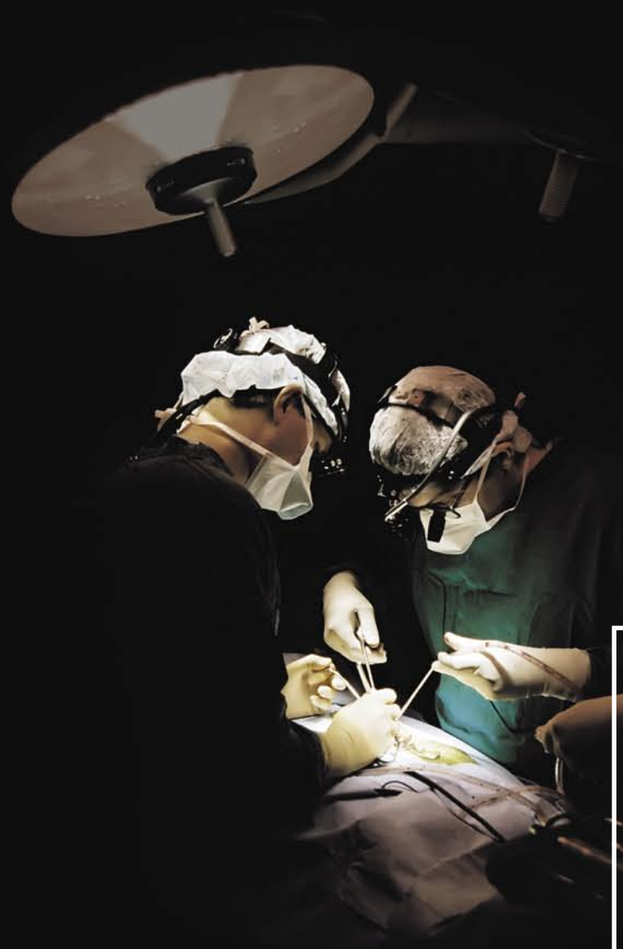


Standards Reshape Medical Power Supplies

New medical equipment standards will improve safety and facilitate the process of international compliance.

By Peter Resca and Dave Murray, Astrodyne

The design of medical-grade power supplies or the integration of such supplies into medical equipment has long posed unique challenges to engineers and system designers. The performance of power supplies in such applications can be potentially life saving. With the burgeoning market for medical apparatuses, designers have become more familiar with the particular compliance standards required. However, advances in technology have led to changes in standards that will continue to significantly affect the power-supply designer and system integrator.

New standards are being proposed that would change the medical-device approval process, literally turning the current method upside down. These new standards would change the method of approving medical equipment from simple parameter testing to an involved collaboration of risk declaration and the methods applied to identify and minimize those risks.

Current Standards

Today, global compliance for medical power supplies is based on IEC 60601 "Medical Electrical Equipment, Part 1: General Requirements for Safety." Most of the medical power-supply compliance standards are based on this, including UL 60601-1, EN 60601-1, JIS T 0601-1 and CSA C22.2 No. 606.1 (Table 1).

The IEC standard has helped define and ensure that the components and systems designed for medical equipment are safe. The IEC 60601 document sets the parameters for the design of medical power supplies such as the unit shown in Fig. 1.

This document and another document, the IEC 60950 for information technology equipment (ITE), use a common approach to power-supply evaluation. The medical supply standard includes the definition of requirements for creepage, clearance and isolation. The requirements in medical design are more stringent and must be accommodated in the design.

New terms and definitions were introduced to those familiar with ITE design and integration. There are three classifications defined for the type of applied part including B, BF and CF. Type B allowed the use of an earth-ground connection, while type BF is floating. Type CF is floating and the most stringent, designated for cardiac contact.

IEC 60601 also included other related standards of importance to any medical supply design effort. The standards are classified as collateral and particular, and attempt to address unique aspects of given applications. Collateral standards are designated 60601-1-X, also referred to as horizontal standards because they provide additional considerations outside of the base standard. Particular standards are identified by 60601-2-X, also sometimes referred to as vertical standards because they add detailed requirements for specific medical devices, such as X-ray machines and hospital beds.

Perhaps the most important collateral standard for power-supply design is IEC 60601-1-2 for electromagnetic compatibility. This standard impacts all steps of the development process, from power-supply design to integration and product testing.

Proposed Standards

The third edition of the IEC 60601-1 standard will force a philosophical shift in designing for compliance. The proposed medical standard is a response to the rapidly changing medical device market. The market has taken advantage of technology and material science advances to develop more sophisticated and complex products. Current medical standards are challenged to keep pace with these changes while maintaining the purpose of their existence: providing safe products for use in the medical industry.

To address current and future technology advances, the proposed standard formally introduces several new

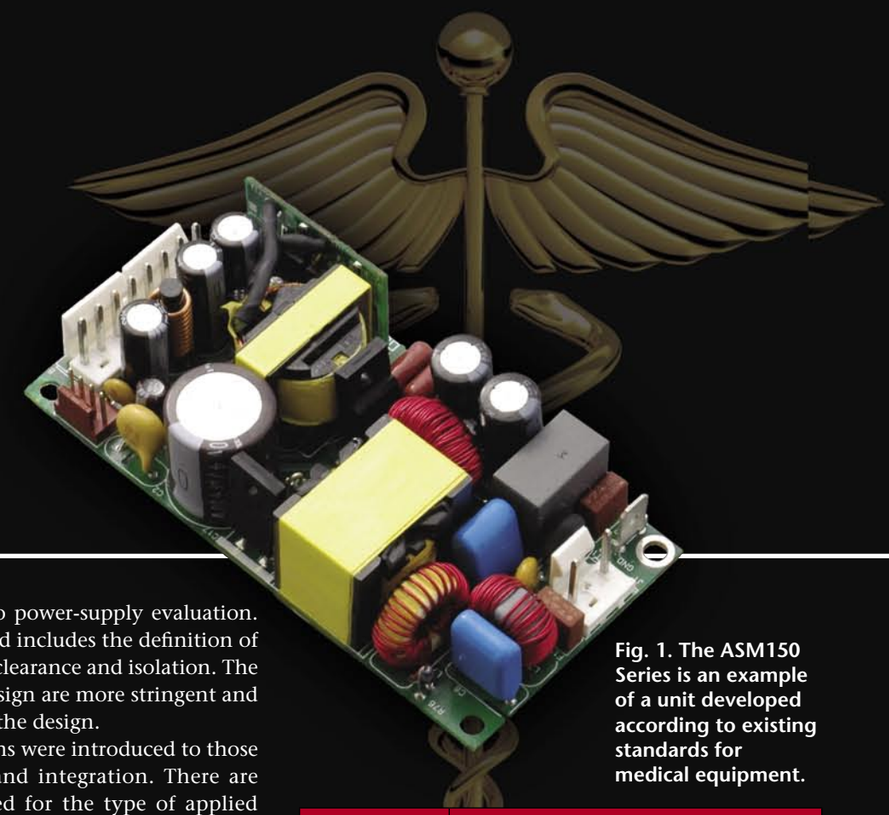


Fig. 1. The ASM150 Series is an example of a unit developed according to existing standards for medical equipment.

Country / Region	Standard adapted from IEC 60601-1
United States	UL 60601-1(U.S. national deviations) (Note: UL 60601-1 was previously numbered UL 2601-1)
Canada	CAN/CSA C22.2 No. 606.1 (Canadian national deviations)
European Union	EN 60601-1 (Identical to IEC 60601-1) (Known as BS EN 60601-1 in the United Kingdom)
Japan	JIS T 0601-1 (Japanese national deviations)
Australia/New Zealand	AS/NZ 3200.1.0 (Australian and New Zealand national deviations)

Table 1. IEC 60601 national standards by country.

Do I *Really* NEED A CONTRACTOR?

A question often asked by homeowners is whether or not they should act as their own general contractor/builder. I remember one person in particular who decided to proceed as an owner-builder. Two years later he is still working on his dream home. He has a fair amount of experience and another comfortable home to live in. He's getting the home he wants and time is apparently not a factor. If you fit this profile, if you like researching products and learning building techniques, getting your hands dirty and have a substantial amount of time to spend on your project, you can build or remodel your dream home yourself.

On the other hand, the line between adventures in building and falling into a "money pit" is a fine one. Another potential client had a different outcome. He decided to do his own project. During the course of construction, he didn't understand a sub-contractor's jargon and omitted a crucial flashing detail. This resulted in leaks and other defects that reduced the comfort, value, and life of the project. The concept of stress took on new meaning as he tried to unravel whether the windows, roof, or stucco was the source of the leaks and which trade was responsible. Ultimately, the finger got pointed back to the one supervising the overall job: the homeowner. At this point the contractor's fees he tried to avoid looked like a pretty good deal.

These two families had the same desire. They wanted to save money and they wanted to play a central role in the creation of their "nest." Most of us can relate to this desire. A home is an individual expression of one's lifestyle, tastes, and priorities.

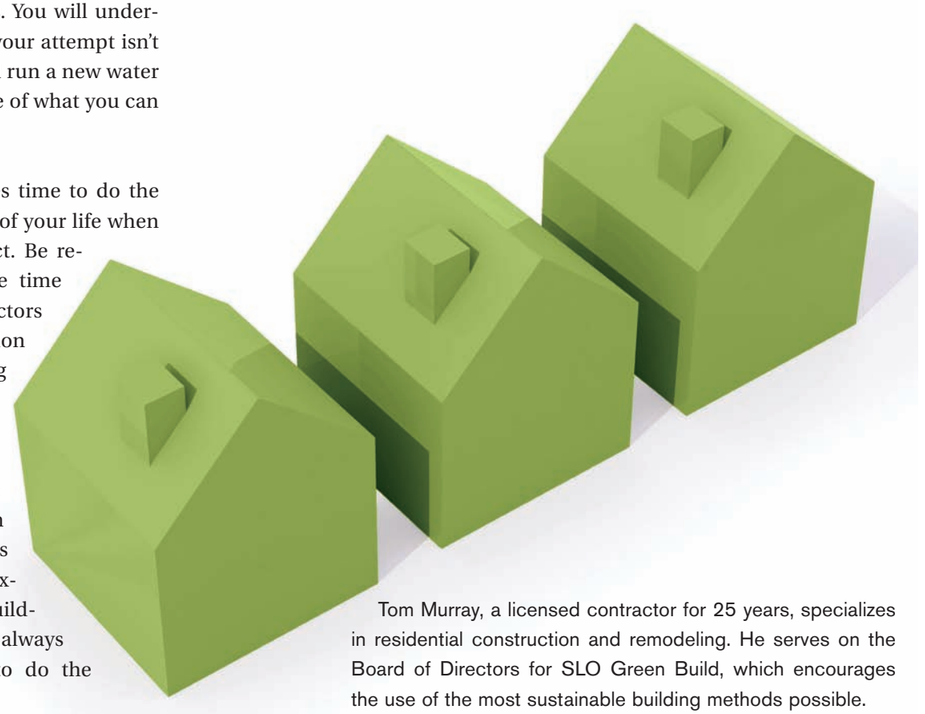
If you are considering acting as your own contractor, here are a few questions to ask yourself.

Does my experience match the scope of the project? Start with home repairs and small construction projects. If you replace a sheet of drywall in the garage you will have some understanding of what a proper drywall job entails. You will understand the steps involved, even if your attempt isn't perfect. Replace an old faucet and run a new water line. You will soon develop a sense of what you can do or where you will need help.

Will I have enough time? It takes time to do the job and cope with the disruption of your life when you become involved in a project. Be realistic. Even modest projects are time consuming. Calling sub-contractors and coordinating material selection and delivery can take a surprising amount of time. Resolving unexpected problems can consume huge amounts of money and energy. Will you be able to live without that bathroom or kitchen for an extended period? Projects almost always take longer than expected even with experienced builders. And homeowners almost always take more time than builders to do the same job.

Will your spouse support you through this process? Being able to work together as a team is critical. Staying on budget, agreeing on details like tile, colors, and fixtures while coping with the disruption of a project creates stress in the best of relationships. One contractor told me he even included a suggested line item for couple's counseling in his large remodel contracts.

Acting as your own contractor is harder than it looks. An experienced builder makes sure material shows up when needed and qualified sub-contractors show up on time and do professional work. Many contractors will work with homeowners who want to work on their own project and negotiating specific areas of work is common. A homeowner may decide to paint, do finish work or clean up and run errands. This can give the homeowner the best of both worlds. For most of us, time is money and qualified contractors can save their customers both. There is joy and satisfaction in using your own hands and mind to improve your home. Just make sure you know your limitations before you begin.



Tom Murray, a licensed contractor for 25 years, specializes in residential construction and remodeling. He serves on the Board of Directors for SLO Green Build, which encourages the use of the most sustainable building methods possible.