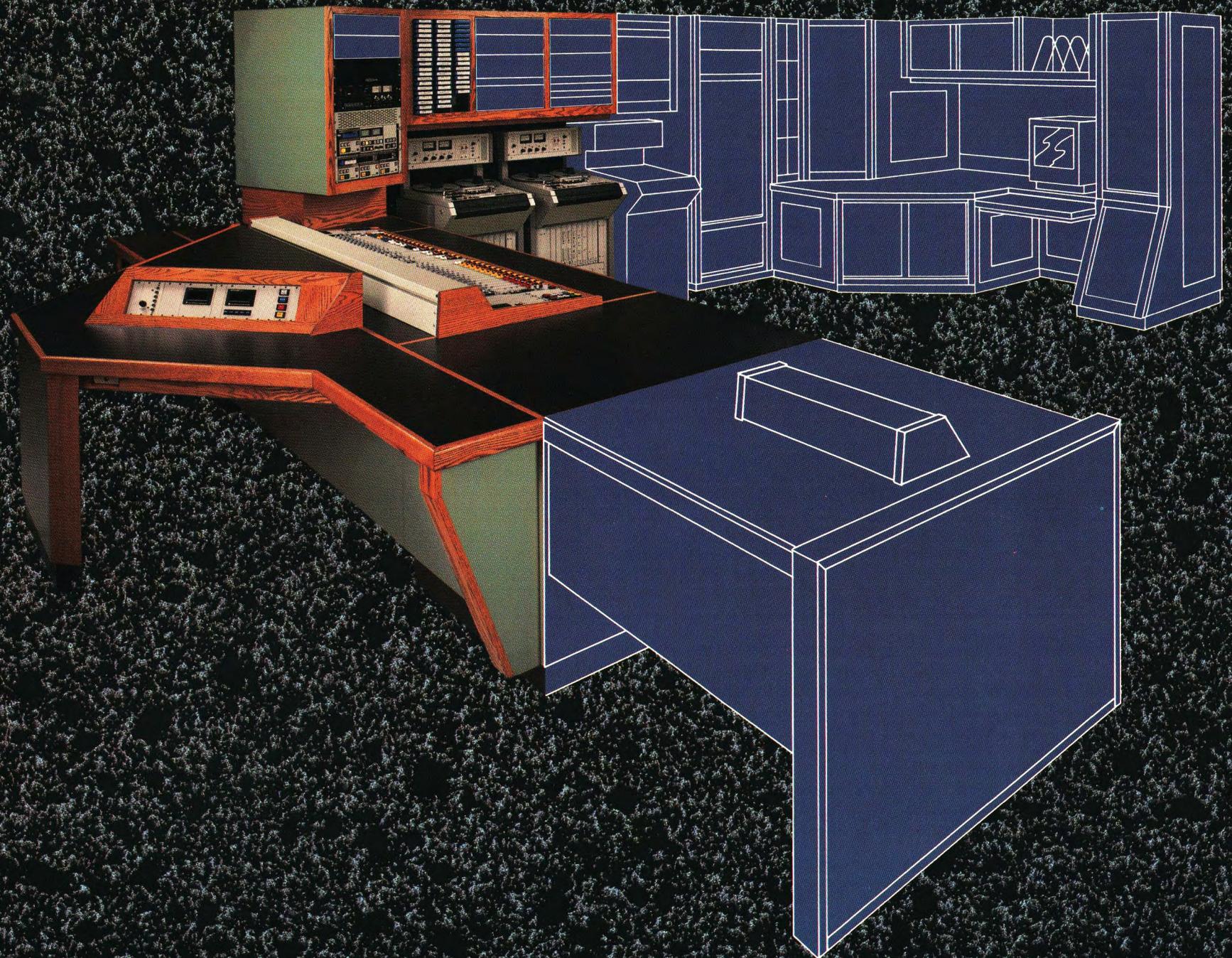




## SYSTEMS DESIGN





Successful  
systems  
are  
developed  
from  
years  
of  
experience.

Successful systems don't just fall together. They are the result of complex design and meticulous planning. The professionals who run major market stations and networks know that it takes experience and resources to achieve success. Which is precisely why they turn to the experts at PR&E time after time - so do middle and small market leaders who know quality design yields the best long term value.

Pacific has been designing, building and installing broadcast systems since 1973. Counting the years our design engineers have spent at the helms of major market stations, we bring well over 100 man-years of front-line experience to bear on the challenges you face.

This real world expertise helps our system designers balance the many conflicting factors involved in planning, designing and installing your system. Speed is always important, but so is doing it right the first time. Your budget may be tight, but in today's competitive environment you can't afford less than reliable, top performance. Your functional needs may match existing room sizes or building conditions - but the odds that they will do so are slim.

Just getting to square one (a fully defined requirements list) takes informed judgment and involves input from management, programming, engineering, news, air talent and others. And as the ideas begin to circulate, details will change, frequently affecting many other areas.

The sales and design personnel at PR&E are experts at sorting through this confusing process to help you define your broadcast objectives. We are constantly developing world-class facilities for a wide variety of formats and applications from local to network, and we're always testing new ideas and updating our knowledge.

Broadcast staffs, on the other hand, are concerned with operating a facility in its current form. No matter how good they are (and we've worked with the best in the business), clients find working with Pacific enhances their own understanding of the latest in proven technology and its proper applications.

If your project involves new construction or renovation, a proper order to your systems design is crucial from the very start. Because your operating requirements will determine a multitude of architectural factors, you must know all the features of the final system before your contractors start work. We do not replace your architect; we do, however, add a "real world" perspective to your design team that will insure your project's success.

And your success is our business. We are committed to helping you achieve your broadcast objectives. Our systems are the smoothest working, the best sounding, and the most reliable available. And our commitment to quality is second to none. This level of performance and quality has been attained through years of experience working with broadcasting professionals, helping to provide them with solutions to their problems. All of this experience is available to you to help insure that your next system is a success.

## Successful systems are more efficient.

### **At Pacific, efficiency begins in the planning stages.**

Our systems designers produce detailed system proposals in a few days. The same task could easily fill up weeks of your time (and your staff's) with searching for resources, meeting vendors, developing drawings, correcting oversights and conducting feasibility studies. Meanwhile, who's running the station?

### **Efficiency means staying within budget.**

We'll save you money now, on the capital end of your project. The recommendations of our broadcast designers are based on what you really need, not on how much we think you can afford. You'll receive a "line item" proposal, not a lump sum that "includes everything." Each system is completely broken down with the details of your capital investment spelled out, so you can conduct a concise, fruitful review. Our designs cover every detail, so your entire studio system can be installed and operational without last minute extras that drive costs through the roof.

### **An efficient system continues to save you money after it's installed.**

With equipment that performs, that lasts, that doesn't eat you up in operating costs. Pacific systems also have the built-in flexibility to meet your changing needs in the future. And you'll always be ready to take advantage of that flexibility, because your PR&E system comes with proper, complete documentation.

### **A system's efficiency also includes its impact on the people who have to use it every day.**

Many firms can design cabinetry and have it built and installed. No one can match the professional look of Pacific systems. When you surround your talent with the very best, they can give their best. Listeners hear the difference in the smoothness of your programming and the quality of your sound. Advertisers respond to the winning attitude of a staff with a facility that's worth showing off - one that says "we're serious competitors."

### **Above all, efficiency means being up on time.**

We've all heard the war stories of stations who were ready with the property, the promotions and the talent, only to wait long past deadlines for delivery of studio systems. Paying double rent and penalties is not for our clients. PR&E has delivered projects of tremendous magnitude on painfully short lead times. When your air date arrives, we'll be there - and you'll be ready.



## Working with Pacific gives you definite advantages.

### **We don't take over your job: We make it easier.**

You'll have help from the earliest stages of planning, if you want it. The economy of one-stop shopping may be your main concern. You might prefer to do some of your own wiring. All of that is fine with us. We aim to meet your specific needs in whatever ways are appropriate.

### **Our expertise is always at your disposal.**

We spend time advising you even though we may not yet have your signed purchase order. If we've heard of problems you should anticipate or solutions you ought to consider, we'll tell you about them - even if they're outside our realm of responsibility.

### **Your decisions will be based on hard information, not guesswork.**

Our proposals are broken out system by system and detailed with line item prices. If changes are required, we make them and give you a revised proposal. There may be further changes; if so, you'll always have a current, updated proposal to work with.

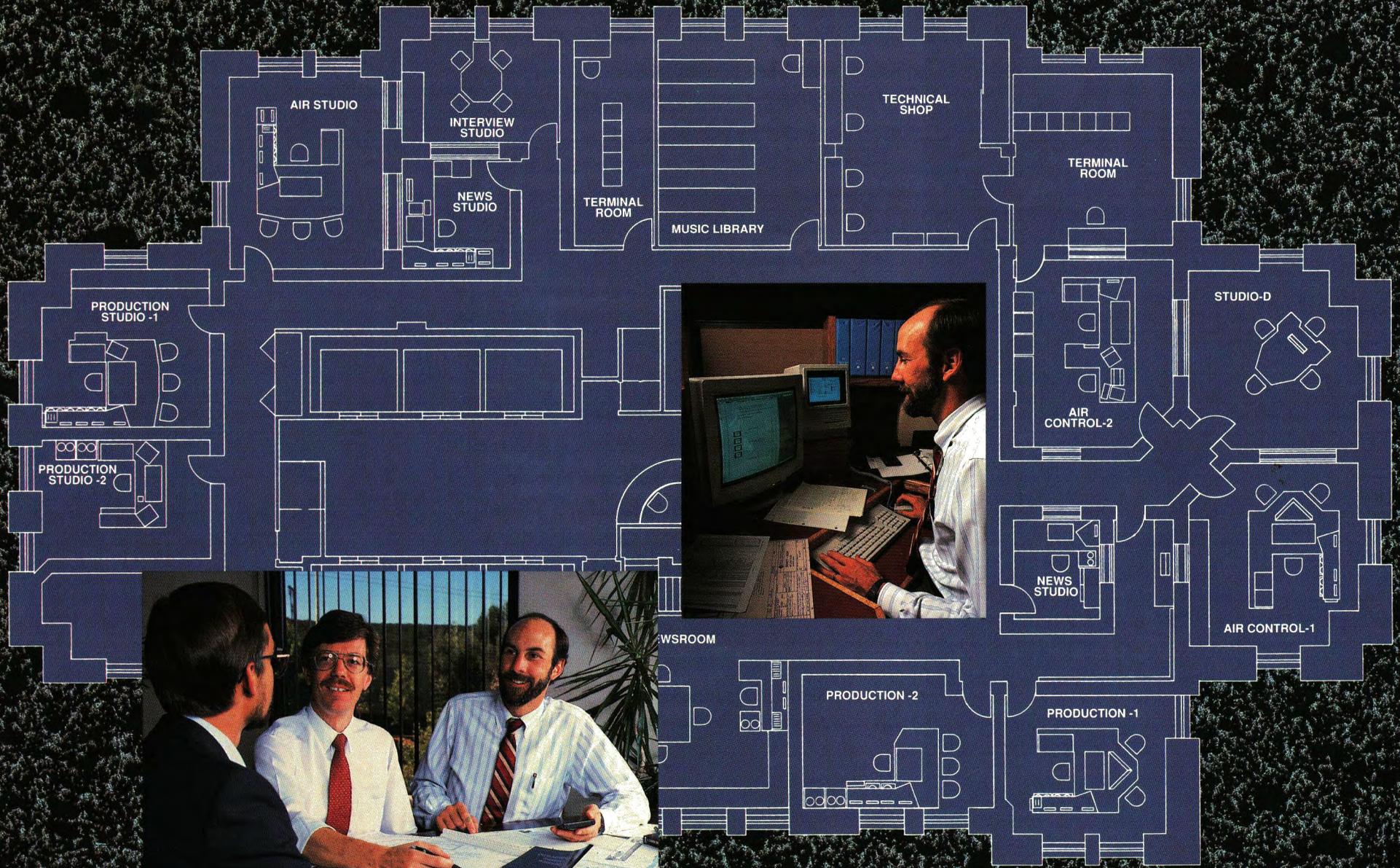
### **Your choice of equipment is just that - your choice.**

PR&E is the OEM (original equipment manufacturer) supplier of nearly every professional tape recorder, CD player, turntable, microphone, accessory or processor you can name. And the one you name is fine with us - none of our suppliers makes us fill a quota, and we're not here to fill you with their sales talk. We'll gladly offer advice, if you want it, but we have no axe to grind about what equipment you buy.

### **We'll save you time, trouble and money.**

The smaller your operation, the more you need real economy in a studio system: on-time installation, efficient operation, equipment and studio designs that work now and in the future. That's precisely what we deliver for our clients, large and small.





## Successful systems demand unique capabilities.

### Design

The system design process begins by obtaining a thorough understanding of the scope and objectives to be satisfied by your new facility, without regard to specifying hardware. This discovery and definition process insures that your broadcast objectives determine the system components and not the reverse. We present and discuss the relative merits of alternative design and component solutions, so that you can make informed decisions. Depending upon your type of facility, a variety of preliminary system design concepts may be presented for your review and selection.

### Systems Integration

Once a system's functional description is established, the supporting components are selected. Along with this effort, the station's existing technical assets are inventoried and evaluated for use in the new facility. PR&E also manufactures a range of unique products designed to solve specific systems-related problems in the areas of audio distribution and logic control. So our designers not only have the experience to define and specify smooth-working, superb-sounding studios, they have the right tools at their disposal.

### Systems Engineering

One of our experienced system engineers provides the hands-on management of your project through all phases of design and manufacture, even installation if you wish. The system engineer, our regional sales manager and you, become a working team throughout the project to completion. Once under way, the system engineer is the day-to-day contact for your project, ready to listen, advise and answer any questions you may have.

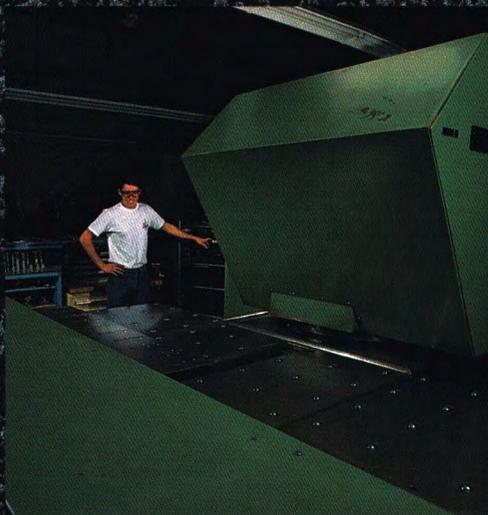
Using the design resources of our system engineering department, the system engineer creates all the documentation required for the manufacture of your system. This includes cabinetry, console configuration, equipment placement, audio wiring, logic control systems and wiring, system assembly and test procedures.

### Documentation

You'll receive a comprehensive package of as-built drawings, schematics and wiring diagrams that you can depend upon, presented in an easy to understand project notebook. Complete documentation makes operating and maintaining your system easy and allows you (or those who come after you) to take full advantage of its designed-in flexibility in the future. Your project's system engineer also retains a copy of the system documentation in our files and is ready to assist you as future requirements arise.

### Resources

PR&E is a vertically integrated company, which simply means we have all of our primary production resources in-house, including precision metal and machine shop, cabinet manufacture and finishing, electronic assembly, mechanical assembly, wire harness, system assembly, test and customer support. These facilities, along with our trained and experienced manufacturing staff, give us the capability to meet your requirements - and your budget.





## Successful systems demand designs with style.

### System Cabinetry

The choice of custom designed or standard configuration cabinetry is determined by the operating requirements of your system or the physical limitations of your site.

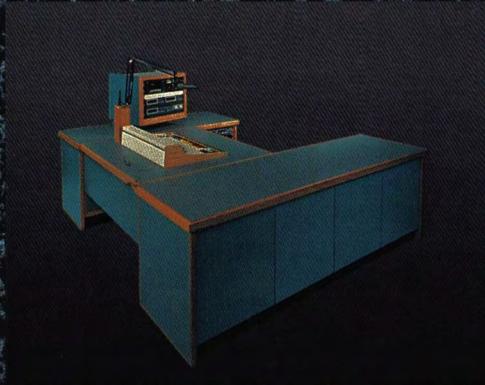
Custom designs are usually chosen to accommodate architectural constraints, special feature requirements or interior design goals. For example, all the “showcase” type of network and station systems (with which we are usually identified) are one-of-a-kind, custom designs.

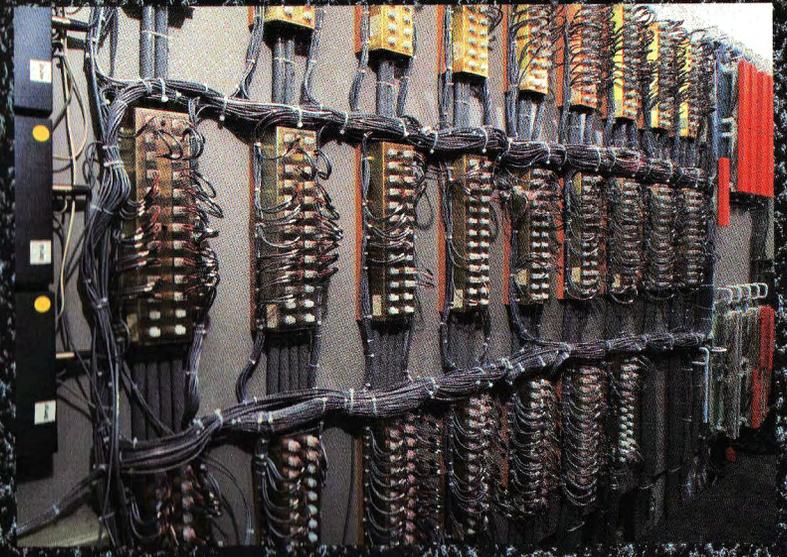
Custom cabinetry provides maximum design freedom, yielding the best use of space, the most efficient operating environment, and the optimum arrangement of console and peripheral equipment. Custom can also provide the opportunity to make a design statement. Of course, the development, documentation and fabrication cost of a custom design is higher than for a production run cabinet.

Our standard PRIMELINE cabinets are built using a clever set of plans derived from our years of experience building custom cabinets. PRIMELINE is an attractive series of cabinets which visually complement many of our custom cabinets. This series utilizes high-quality, medium-quantity production techniques to manufacture fine cabinetry which meets many general broadcast applications while offering significant savings.

The cabinetry design establishes the operating environment of your facility for many years to come. In the final analysis, the choice between a custom or standard design must be viewed in the context of your broadcast objectives.

Both custom and standard designs are produced and finished in our own cabinet shop by an experienced staff which has produced our cabinetry since 1973. These craftsmen work in close cooperation with each project’s system engineer and, along with our cabinet designers, have been instrumental in developing many of the unique design features found in our systems.







### System Audio Wiring

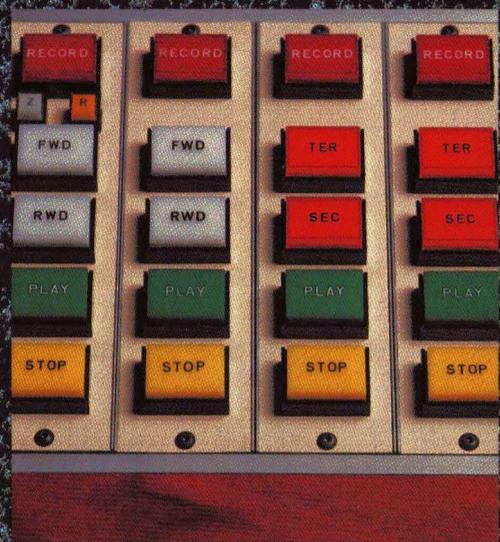
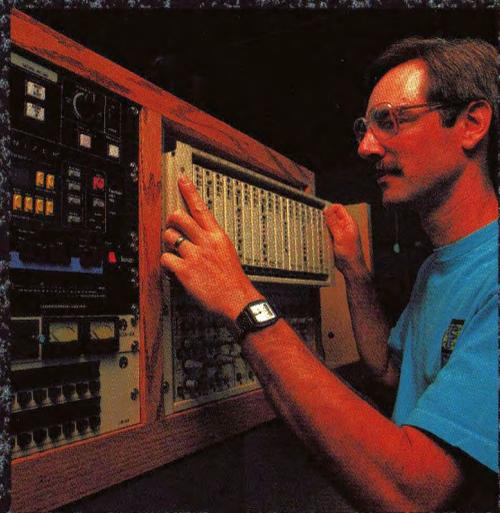
A system's audio wiring may be as simple as point-to-point (direct wiring), or as extensive as using patch fields and terminal connector panels for each and every signal in the facility. In our experience, the most often used practice is an efficient and judicious blend of the two: patch bays for processing loops, temporary reconfigurations, emergencies and test purposes, and direct wiring for dedicated signal functions.

While there are many schools of thought on what should be direct-wired and what should be routed through patch bays, our design and documentation process can accommodate most reasonable schemes. Our system engineers use custom software programs to develop the manufacturing documents which our wiring harness and system assemblers use to perform the audio wiring for your system. These programs also provide wire numbers, patch bay legends and your system's audio wiring documentation.

The system engineer takes into account the type and size of console and its currently planned configuration. He also considers the list of peripheral equipment and their placement as well as any specialized facilities. Wherever possible, standard layout templates, pre-fabricated wiring and patching equipment are used to provide the maximum utility at the lowest design and manufacturing cost. For example, a console's patch field template includes wiring for a fully configured console and, therefore, provides the most flexible structure for both the present application and any future requirements.

In 1983, in response to suggestions from several of our clients, we developed a system of connector based patch bays, terminal blocks and inter-facility wiring harnesses. The expressed requirement was for a system of interconnect wiring which allowed easier reconfigurations for special events, programming changes and the installation of new equipment. The resulting audio wiring system has proven itself flexible and adaptable in hundreds of systems, including network operations and most of the leading stations in the major markets. These components are also available independently of our systems and many broadcasters have found them excellent assemblies to use in their own projects.





### System Logic Control

Our on-air and production consoles offer the most extensive range of local and remote control capability ever incorporated in broadcast mixers. The concept of a broadcast console having built-in digital control logic was first introduced in our System One series of consoles in 1975. Since then, the expansive growth of control capability has been both revolutionary and evolutionary. Many of today's standard features were developed from our systems design experience; we would encounter a needed function, accommodate it, and add it to the design outline for the next series of consoles.

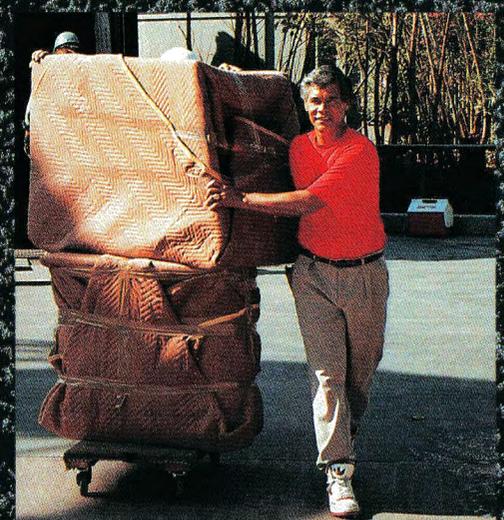
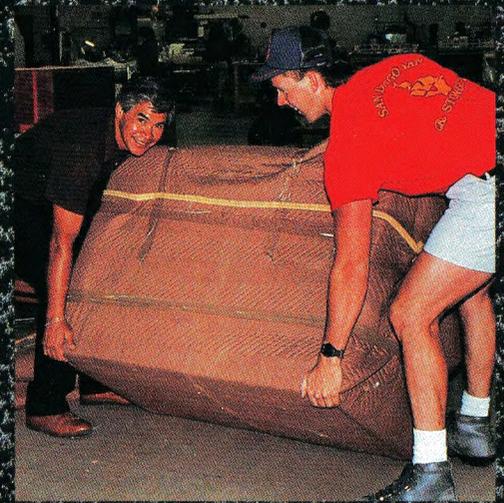
An example is the intercommunications requirement for full-facility talk radio. Our ABX, AMX, and BMX Series III consoles all permit any of the talent microphones located in the Control Room, Studio-A, and Studio-B to talk to any of the other rooms, plus another destination (screener booth?), simply with the provision of a momentary push button for each addressed site! The provisions for audio feed, mic channel muting, and appropriate monitor dimming and muting are all built into the console. This console's line input modules provide control of connected peripheral equipment and are also remote controllable themselves. Typical applications would be talent remote control of cartridge inputs used during a news break, or remote channel On, Off, Cue and Solo button panels conveniently located at CD players and reel tape decks.

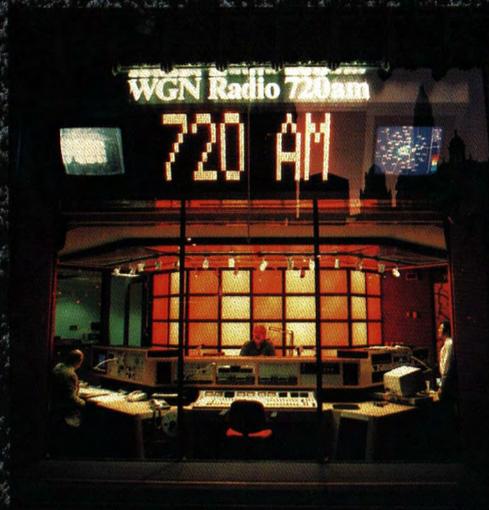
Properly controlling the wide variety of peripheral equipment found in broadcasting has been a major challenge. Simply said, radio studios use equipment of many different makes, models and vintages. There is no control format compatibility between manufacturers and very little, if any, between models from the same manufacturer. Therefore, we design systems to a standardized control format and use translator interfaces, as required, to accommodate virtually all professional grades of peripheral equipment. This standardized control scheme offers significant flexibility for the future as peripherals are changed, added or replaced.

In addition to the console's control of peripheral equipment, we also offer a range of talent control and display panels. These include microphone, group microphone, monitor and headphone control, plus clock and timer display panels. Console mounted panels are also available for the full-function remote control of many models of reel tape, cart and cassette recorders, as well as telephone multi-line selection and dialing.

### System Assembly

The system engineer coordinates the arrival of all system components, including peripheral equipment from outside vendors, to come together for assembly to the pre-shipment level specified in your project proposal. Our experienced system assemblers, following the master documentation, first install the prefabricated audio and logic wiring, the console and, finally, the peripheral components.





### **Factory Test**

Our systems are thoroughly tested for proper operation and performance prior to shipment. Many clients visit our plant during the factory tests to review their systems, take pictures for the staff back home, and plan delivery site coordination. This visit is often an ideal time to determine the final placement of microphone arms or cable sleeves for such countertop equipment as telephones, computer terminals, splice finders, etc. These movable items are sometimes difficult to position on a drawing and it's much simpler when you can walk around and study your real system. Of course, with the system right at your fingertips, this is also an excellent time to review any installation and operational questions with your system engineer.

### **Delivery**

After completion of factory tests, each system is disassembled, packaged and blanket wrapped for van shipment to the client's facility by Electronic/Trade Show Van Service. This is an industrial service division of those moving companies who specialize in the packing, transport and delivery of fragile, high value shipments.

### **Installation**

You begin with a head start - you'll be reassembling a system that's already been put together and fully tested in our facility. To do that, you can use your own staff, an installation service firm, our staff, or any combination. Whichever route you choose, your PR&E system engineer is available to provide technical advice and support.

## **Please, don't let our reputation intimidate you.**

Our clients come to us for the smoothest working, most technically complete and best looking studios they can justify. As a result, we've become known for building the large showcases found in market-leading facilities and network plants. Unfortunately, some stations assume they can't afford our services. They commit their staffs to working under less-than-optimum conditions without ever asking us to quote. Before you make that mistake, give us the opportunity to show you how the knowledge, attention to detail and support that Pacific is famous for can conserve your capital and operating budget.

Give us a call at (619) 438-3911, and ask for your regional sales manager. Talk to us about your plans, and you'll soon discover why PR&E has been setting the standards in broadcast studio systems for nearly two decades.



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