



## Marketing White Paper

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### The Relationship Between the Sound Contractor and Religious Organizations

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#### Scope of this paper:

For many sound contractors, the most difficult part of dealing with a religious congregation may not be the details of the sound system itself, but rather the specialized liturgical and architectural nomenclature and language unique to the application.

The first meeting between a prospective sound contractor and a church sound committee can be confusing to the contractor, as many new terms and usages may be introduced to him in a short time. It is frankly embarrassing for the contractor to stop and ask what these new words mean, so he probably will not do it. He may or may not find out later just what was said.

It is basically the contractor's responsibility to understand the terminology unique to a given denomination, or type of architecture, before the first meeting, and it is the intent of this paper to provide a broad base of information on architectural terms as well as the various titles of address used within the various groups.

In addition, we will discuss the broad requirements of sound systems in worship spaces, as they have adapted to today's changing requirements.

#### Titles and responsibilities:

On the local level, most religious organizations are administered fiscally by a board elected from the membership. The names vary. In some denominations the governing group is called the Vestry, Session, or Board of Elders and Deacons, to name a few.

When a religious organization decides that it needs a new sound system, the subject will usually have been discussed at length, and there may be many preconceived notions of what the system should be, look like, and cost. If there is a sound contractor in the congregation, he probably does not want to get involved in the prospective project — unless of course he wants to present it as a gift to the congregation.

A subcommittee will usually be set up to search for a sound contractor and/or a consultant for

the project, and it is at this point that the contractor will be called in for a preliminary meeting and survey of the premises. In all except the smallest of groups, the contractor will not be contacted by the spiritual head of the group. The most general term of address for the spiritual head of a Christian group is Pastor, but some Protestant organizations prefer the term Minister or Rector. These are basically third-person terms, and in direct address such terms as Doctor, Father, Reverend, Pastor, and Rabbi (in the various Jewish groups) are common. The sensible contractor should gladly adopt the local term, if only as a matter of courtesy and respect.

The local structure may be known as a church, a parish (chiefly Roman Catholic, Lutheran, and Episcopalian), or a cathedral, if it is the seat of a bishop. Orthodox and conservative Jewish houses of worship are usually called synagogues, while the reform structure is called a temple.

Many congregations today have business managers, and this is indicative of a professional approach taken with regard to all business affairs. While the contractor will deal with the committee which has been set up to oversee the sound system project, he is likely to find that business relationships will not be substantially different from dealing with commercial organizations.

#### Specific architectural terminology:

Our first step here is to divide the various religious groups according to their traditions. Christian denominations fall basically into three areas: liturgical, mainline non-liturgical, and charismatic.

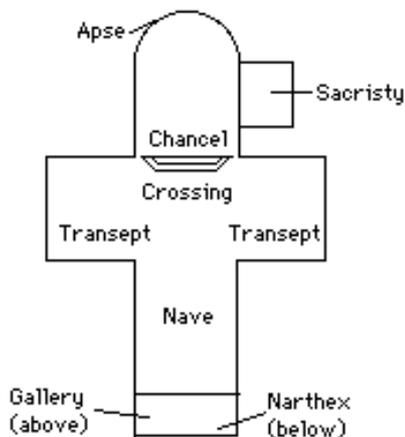
The liturgical groups have formal traditions of worship going back four centuries or more, and these bodies include the various branches of the Eastern Orthodox groups, Roman Catholic, the various Lutheran groups, and Episcopal.

The basic liturgical architectural form was the basilica, out of which developed the cruciform, or cross-shaped, church. Such structures were quite common fifty or sixty years ago, and most of the examples we see today date from that time. The high cost of construction today all but rules them out, but

there are still many examples in need of updated sound systems.

Even when the liturgical groups cannot afford such grand structures, they will carry much of the pertinent terminology over to smaller structures. Figures 1 and 2 show the basic layouts for a cruciform church and a smaller church based on a simple rectangular structure. Note that the choir seating, or pews, are referred to as choir stalls. The vestibule or foyer is referred to as a narthex, and the various balconies are called galleries.

**Figure 1. A Cruciform Church**



**Figure 2. Liturgical Rectangular Layout**

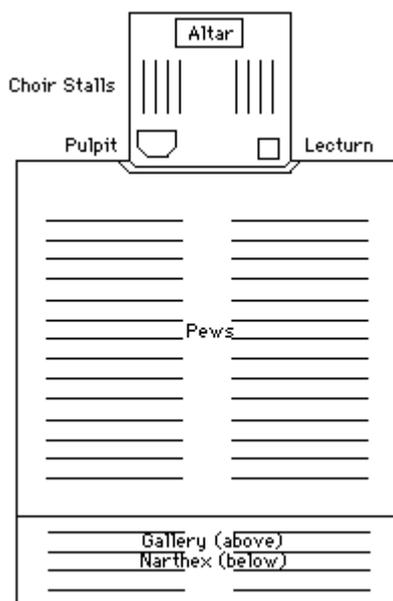
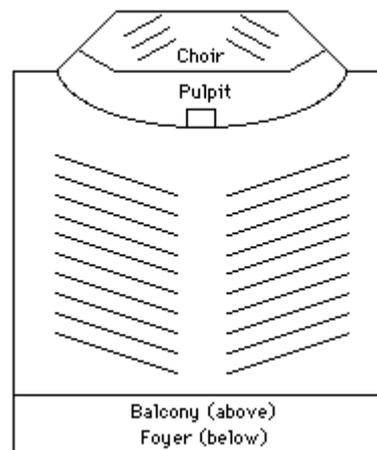


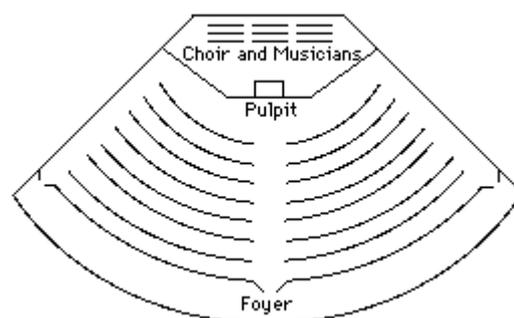
Figure 3 shows one of many traditional approaches to church architecture and layout characteristic of mainline non-liturgical denominations, such as the Baptist, Methodist, and Presbyterian groups.

**Figure 3. Non-liturgical Rectangular Layout**



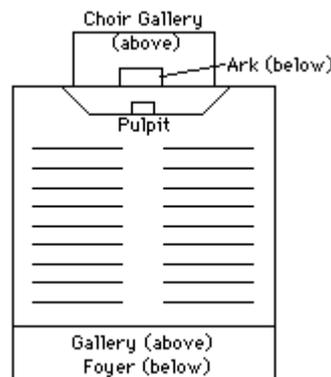
The extremely rapid growth of the various charismatic denominations in the last quarter century has placed new emphasis on congregational participation, and this requires that all participants be as close to the center of service as possible. Fan shaped seating optimizes this, as shown in Figure 4.

**Figure 4. Modern Fan-shaped Structure**



There are basically three groups within the Jewish faith, orthodox, conservative, and reform. The orthodox generally maintain small congregations, and in many cases sound reinforcement is not necessary. The reform and conservative congregations are generally larger, and typical structures will fit into the same architectural mold as the non-liturgical mainline Protestant groups.

**Figure 5 shows the typical architecture of a reform temple.**



## **Determining the requirements for sound reinforcement:**

Which activities need to be reinforced?

The contractor must make a careful survey of the activities which need reinforcement. Some groups require only reinforcement of speech, perhaps from several locations, while instrumental and choral music will need no reinforcement.

In other locations, there may be a need for amplification of music, either in mono or in stereo. In this case, a three-channel approach may be dictated, with the center channel dedicated to speech. In some churches, dramatic presentations are amplified, including sound effects. Careful assessments need to be made of required volume levels and required frequency range coverage. In any event, the input capabilities of the system must meet the requirements of the largest service anticipated.

Integration with broadcast, TV, and recording activities requires careful planning as do needs for hearing impaired listeners and sound requirements in remote parts of the building.

Many LDS (Mormon) churches have large youth activity areas, which are adjacent to the main worship space and which can be connected through folding partitions for overflow crowds. Sound system integration of the two areas requires careful planning.

Many Christian Science churches have the added requirement of amplifying testimonials from members of the congregation, and this may require sophisticated switching of distributed microphones.

### **System design considerations:**

Most realistic businessmen have no problem coming to grips with large budgets if they truly believe that they will get their money's worth in performance. It is likewise a revelation for many laymen to realize that one can spend

upwards of \$100,000 for a sound system... especially if they have never heard how good such a system can be. The contractor and/or consultant must often embark on a patient course of education in order to put points such as these across.

Regarding the basic choice of system for conventional reverberant structures, we can do no better than present the ideas put forth by David Klepper in his 1970 article in the Journal of the AES titled "Sound systems in Reverberant Rooms for Worship." This basic data is given in Appendix I.

## **Historic and other special venues:**

On occasion, the contractor will be informed that "the system must not be seen." What this usually means is that the system cannot be allowed to interfere with the major architectural features of the space. In the case of registered landmark structures, there may be serious constraints, such as the requirement that a new system must go into the space occupied by the earlier system... which may not have worked well in the first place. If the application is speech only, then custom line arrays may offer the only workable solution, since they can usually be adapted to existing architectural details and still provide the necessary coverage and level requirements.

When the situation appears difficult, a consultant who has specialized in such problems may offer the best solution.

### **When to call in a consultant:**

The contractor should call in a consultant anytime he feels himself on unfamiliar terrain. In addition to difficult systems concepts, such as the line arrays just discussed, any major acoustical problems should be referred to a consultant.

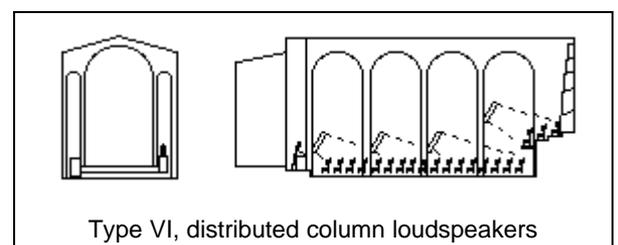
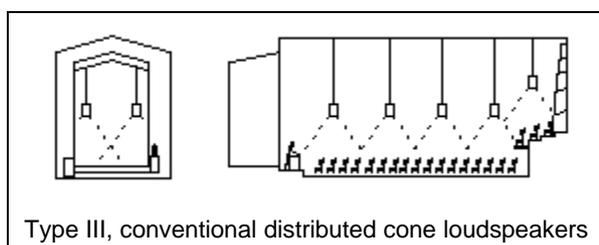
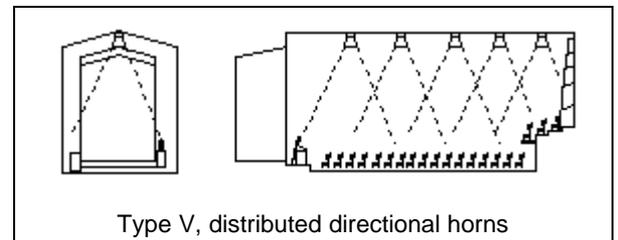
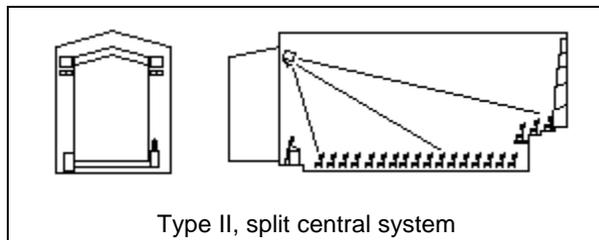
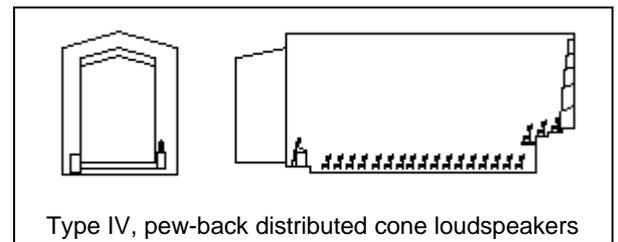
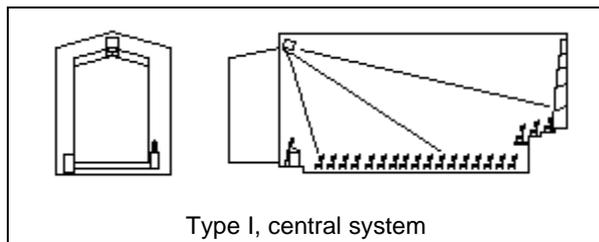
Today, there are many older highly reverberant Roman Catholic parishes which are anxious to make certain acoustical changes so that their services may be better in the spirit of the Vatican II reforms. Many such spaces have been ruined by indiscriminate carpeting, and these mistakes could have been avoided by a competent consultant.

Many of today's fan-shaped structures, as good as they are in terms of sight lines, present significant acoustical reflections back to the platform area. These problems should be referred to competent consultants.

### **Hands-off versus manned system operation:**

For speech only reinforcement, an automatic microphone mixer, carefully adjusted, can handle up to five or six microphones-provided that there will be no great level variations at the input. Be sure that a client understands these constraints before specifying that mode of operation. Obviously, most systems will fare better with an operator.

## Appendix 1. Sound system designs for reverberant spaces.



## Summary of typical sound reinforcement systems for worship spaces.

TYPE OF SYSTEM	APPLICATION	DESIGN CONSIDERATIONS	DELAY UNIT
I. Central directional cluster of horns (sometimes column loudspeakers for "easy" systems)	Where architecture permits	Large radiating area required for directional control line-of-sight to all listeners, lack of distant sound-reflecting surfaces to produce echoes. Higher reverberation time requires more directional control and larger radiating area.	Not required
11. Split directional cluster of horns (columns for "easy" systems)	Where most speech originates from left and right (for example, pulpit and lectern)	Same as above. In addition, the lectern signal should usually be amplified through its loudspeaker only; and the pulpit through its loudspeaker only	Not required
III. Conventional distributed system-cones directed vertically	Low-ceilinged spaces; under-balcony areas; where direct sound is at a minimum	Loudspeaker sufficiently low 4.5meters (15ft) maximum in reverberant spaces. Consider chandeliers. Close enough on-center spacing for even coverage and loudspeakers with wide treble coverage	Essential when supplementing a main directional system; otherwise essential for directional realism and highest intelligibility.
IV. Pew-back distributed small cones	Where other systems are not applicable (expensive)	Large number of loudspeakers, one per three listeners; small loudspeakers high on backs, never under pews	Essential for directional realism and highest intelligibility, especially where live sound is strong
V. Distributed directional horns	Hard cases with no sound absorption other than people and where sound should be confined to occupied areas	Large single directional horns directed vertically, each covering relatively small precisely determined areas. Loudspeakers should be no higher than 13 meters (45 ft)	As above
VI. Distributed column loudspeakers	Long narrow spaces where columns provide logical mounting locations	Distance between left and right columns no greater than 13 meters (45 ft), columns tilted to provide defined coverage, best results with custom-designed column loudspeakers	Always required

## **Marketing considerations:**

### **Establishing contractor credibility:**

Most religious groups rely on word of mouth recommendations for professional services, and the simple fact that a contractor has been contacted implies that he has passed that first test.

Religious groups are impressed by seriousness and purposefulness and will look for that in the work of a sound contractor. The contractor should have well documented dossiers on past jobs, including comments from the owners. He must in fact sell himself through past work. A contractor just striking out on his own can justifiably refer to work that he supervised as the member of another firm, provided it is clearly presented as such.

### **Focusing and helping define the user's needs:**

The contractor needs to prepare a detailed checklist of possible system features and functions to serve as discussion points with new clients. Out of this will come speedier definition of what the system should be, and the client will probably discover in the process that the system can do more than he may have anticipated. For example, what may have started out as a simple need for sound reinforcement may end up as an audiovisual management center, with broadcast and recording capability as well.

### **A workable design within budget constraints:**

It is easy to start out with a no-holds-barred approach, and much of the contractor's design time will probably be spent scaling the system down so that it fits within the client's budget limits. Typical of the questions to be answered are:

What are the performance tradeoffs between large and small format compression drivers?

When will a 4660 or other packaged system perform as well as a custom system?

How much console flexibility is actually needed?

### **Planning an on-site demonstration:**

A Vermette hoist can be used to elevate a small system to a height of 18 to 20 feet, and this is usually sufficient to demonstrate the rudiments of good design in medium size rooms. This is a tried and true technique, and it is especially useful when a religious group is contemplating its first professional system. More often today, there is already an awareness of what good sound is, and scheduled field trips to more sophisticated installations will probably be more in order. Remember that no job is too small to do well, and that small jobs lead to big ones.

## **Glossary:**

**Altar:** The table on which the Christian rite of communion the mass, or the Eucharist, is carried out.

**Ambo:** A large reading desk; pulpit.

**Apse:** A rounded architectural detail at the end of a transept or branch of a building.

**Ark:** The enclosed structure in the center of Jewish worship which contains the scriptures of the Torah.

**Baptistry:** That part of a Christian church where the rite of baptism takes place. May take the form of a simple font or a small pool.

**Bema:** (1 ) The raised lectern in a synagogue from which the Torah is read;  
(2) Enclosed space behind the altar, chiefly in Eastern Rite churches.

**Bishop:** The spiritual head of a large group of parishes, chiefly in the liturgical denominations. Also the head of a ward in the LDS church.

**Cantor:** The singer who chants, or intones, parts of the liturgy. Chiefly in Jewish and liturgical Christian practice.

**Cathedral:** The seat of a Bishop's authority, chiefly Roman Catholic and Episcopal.

**Choir:** That part of a church where the choir normally sits.

**Chancel:** That part of a church which is the center of the service. Usually includes the altar, choir, lectern, and pulpit.

**Communion table:** Equivalent of the altar in non-liturgical churches.

**Congregation:** Generally, the membership of a local church, synagogue, or temple.

**Crossing:** In cruciform churches, the area of intersection between the nave and transepts.

**Deacon:** The lowest level of priesthood in liturgical churches; a layman's position in many non-liturgical churches.

**Elder:** A high ranking layman's position in many non-liturgical churches.

**Font, baptismal:** A fixed large basin used in the rite of baptism in many churches.

**Gallery:** The term normally used to describe a balcony in a church, synagogue, or temple.

**Lectern:** A reading desk, located at the front of the chancel, used for scripture readings and laymen's messages.

**Minister:** A term used in reference to the spiritual leader of a Protestant congregation.

**Minister of Music:** The position, in any church, of authority over all musical matters.

**Narthex:** The formal entrance or foyer in a church.

**Nave:** The main seating area in a cruciform church.

**Parish:** A term referring to a local congregation in a liturgical denomination. Also may refer to the neighborhood or territory surrounding the congregation.

**Pastor:** The spiritual head of a Christian congregation or parish.

**Priest:** The spiritual leader of a Roman Catholic, Orthodox, or Episcopal church.

**Pulpit:** A large reading desk at the front of the chancel from which the sermon is given.

**Rabbi:** The spiritual leader of a Jewish congregation.

**Rector:** A term used in the Episcopal church to indicate the spiritual head of the parish.

**Sacristy:** An area adjacent to the chancel in a liturgical church dedicated to altar and other chancel preparations for worship.

**Sanctuary:** A general term used to describe the entire worship area of a church, including the chancel and congregational seating areas.

**Synagogue:** The building occupied by an orthodox or conservative Jewish congregation.

**Tabernacle:** A recessed cabinet in the wall of the chancel, adjacent to the altar, where communion elements may be kept. Chiefly Roman Catholic.

**Temple:** The building occupied by a reform Jewish congregation.

**Transept:** The lateral arms of the cross in cruciform churches. Normally used for congregational seating.

**Ward:** The term used for local LDS congregations.

**Appendix I:** (Data printed with permission from D.L. Klepper, "Sound Systems in Reverberant Rooms for Worship," J. Audio Eng. Soc., Vol. 18, No. 4 (August 1970))

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