

MDS-8

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AOC P/N 033-0094

ALLEN ORGAN COMPANY

For more than fifty years--practically the entire history of electronic organs--the Allen Organ Company has sought to build the finest organs that technology would allow.

In 1939, Allen built and marketed the world's first purely electronic oscillator organ. The tone generators for this first instrument used two hundred forty-four vacuum tubes, contained about five thousand components, and weighed nearly three hundred pounds. Even with all this equipment, the specification included relatively few stops.

By 1959, Allen had replaced vacuum tubes in the oscillator organs with transistors. Thousands of transistorized instruments were built, including some of the largest, most sophisticated oscillator organs.

Only a radical technological breakthrough could improve upon the fine performance of Allen's solid-state oscillator organs. Such a breakthrough came in conjunction with the U.S. Space Program in the form of highly advanced digital microcircuits.

Your MDS organ is the product of years of refinement in digital techniques by Allen engineers. It represents the apex of computer technology applied to exacting musical tasks. The result is an instrument of remarkably advanced tone quality and performance.

Congratulations on the purchase of your new Allen Digital Computer Organ! You have acquired the most advanced electronic organ ever built, one that harnesses a modern computer to create and control beautiful organ tones.

Familiarize yourself with the instrument by reading through this booklet. The sections on stop description and organ registration are intended for immediate use as well as for future reference

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DESCRIPTION OF STOPS

PITCH FOOTAGE

The number appearing on each stop along with its name indicates the “pitch” or “register” of the particular stop. It is characteristic of the organ that notes of different pitches may be sounded from a single playing key. When this sound corresponds to the actual pitch of the playing key, the note (or stop) is referred to as being of 8’ pitch; therefore, when an 8’ stop is selected and middle C is depressed, the pitch heard will be middle C. If it sounds an octave higher, it is called 4’ or octave pitch. If it sounds two octaves higher, it is called 2’ pitch, while a stop sounding three octaves higher is at 1’ pitch. Likewise, a 16’ stop sounds an octave lower, and a 32’ stop sounds two octaves lower.

Stops of 16’, 8’, 4’, 2’, and 1’ pitch all have octave relationships; that is, these “even numbered” stops all sound octaves of whatever key is depressed. Pitches other than octaves are also used in organ playing. Their footage number always contains a fraction, and they are referred to as mutations. Among these are the Nasard and Quinte 2-2/3’, Tierce 1-3/5’, and Quintflöte 1-1/3’. Because they introduce unusual pitch relationships with respect to the fundamental (8’) tone, they are most effective when combined with other stops, and are used either in solo passages or in small ensembles of flutes (see explanation of Cornet in Section II).

TONAL FAMILIES

Organ tones divide into two main categories: flues and reeds. In a pipe organ, flue pipes are those in which the sound is set in motion by wind striking directly on the edge of the mouth of the pipe. Flues include principal tones, flute tones, and string tones. Compound stops and hybrid stops are “variations” within these three families.

The term “imitative” means that the organ stop imitates the sound of the corresponding orchestral instrument; for example, an imitative “Viola 8” would be a stop voiced to sound like an orchestral viola.

Principal Voices Principal Diapason Octave Superoctave Quinte	Characteristic organ tone, not imitative of orchestral instruments. Usually present at many pitch levels, as well as in all divisions. Rich, warm, and harmonically well developed.
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Flute Voices <i>Open:</i> Harmonic Flute Melodia flute mutation stops <i>Stopped:</i> Gedackt Bourdon Quintadena Rohrflöte	Voices of lesser harmonic development than Principal. Open flutes somewhat imitative; stopped flutes not. Present at all pitch levels and in all divisions.
String Voices Salicional Viola Voix céleste	Mildly imitative voices of brighter harmonic development than Principal. Usually appear at 8' pitch.
Compound Voices Mixture Cornet	Voices produced by more than one rank sounding simultaneously.
Hybrid Voices Gemshorn Erzähler Spitzflöte	Voices that combine the tonal characteristic of two families of sound, e.g., flutes and principals, or strings and principals.

In *reed* pipes, a metal tongue vibrates against an opening in the side of a metal tube called a shallot. The characteristic sounds of different reeds are produced through resonators of different shapes. The family of reeds subdivides as follows:

Reed Voices <i>Chorus or Ensemble:</i> Trumpet Posaune Clairon <i>Solo:</i> Hautbois Clarinet Krummhorn	Voices of great harmonic development; some imitative, others not.
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The Allen Digital Computer Organ provides authentic examples of various types of voices as listed above. Some of these are protected by copyrights owned by the Allen Organ Company. The voices are stored in memory devices, each having affixed to it a copyright notice; e.g., © 1996 AOCO, © 1997 AOCO, etc., pursuant to Title 17 of the United States Code, Section 101 et seq.

MDS-8 STOPLIST

Following is a discussion of individual stops and how they are generally used. Please note that slight variations in specifications may be encountered.

PEDAL ORGAN:

Bourdon 16'	Stopped flute tone of weight and solidity.
Lieblichgedackt 16' (Swell expression)	Softer stopped flute of delicacy and definition. Useful where a soft 16' pitch is required. Can have Swell tremulant.
Octave 8'	8' member of the Pedal principal chorus.
Gedacktflöte 8'	Stopped flute tone of 8' pitch, useful in adding clarity to a pedal line in combination with the Bourdon 16' or Lieblichgedackt 16'.
Choralbass 4'	Pedal 4' principal tone.
Mixture IV	Compound stop of principal tones. One pedal produces four distinct pitches at octave and fifth relationships to the pedal being pressed. Used to crown the Pedal principal chorus.
Posaune 16' (Swell Expression)	A strong Pedal reed that lends strength and "snarl" to the Pedal line. Can have Swell tremulant.
Trompete 8'	Clear Pedal reed useful in adding definition to a full pedal combination, or as a solo Pedal trumpet.
Great to Pedal	Connects all Great stops to the Pedal.
Swell to Pedal	Connects all Swell stops to the Pedal.
MIDI on Pedal	Opens MIDI channel to the Pedalboard and division.

SWELL ORGAN:

Gedackt 8'	Stopped flute tone of moderate harmonic development. Provides the 8' member of the Swell flute chorus and is useful by itself or with other flutes and mutations in creating solo voices.
Viola 8'	Soft string tone.
Viola Celeste 8'	String tone, slightly detuned, used with the Viola 8' to create a warm string celeste. A celeste is created by sounding two voices simultaneously together, one tuned slightly sharp or flat of the

other, creating a warm, undulating, “celestial” effect. The combination of the Viola 8’ and Viola Celeste 8’ will create beautiful string celeste sounds.

Spitzprinzipal 4’	Hybrid stop which is predominantly principal tone with a string like edge.
Koppelflöte 4’	Distinctive stopped flute voice that works well in ensembles of flutes or strings, or as a solo voice.
Nasat 2-2/3’	Flute mutation that sounds one octave and a fifth above the keys played. Always used with other stops (usually beginning with 8’) for coloration.
Blockflöte 2’	A delicate, clear open flute at 2’ pitch.
Terz 1-3/5’	Flute mutation that causes the pitch to sound a seventeenth (two octaves and a third) higher than played. Used with 8’ stops or flute ensembles.
Mixture IV	Compound stop, or mixture comprised of principal tones. Each note played produces four distinct pitches at octave and fifth relationships to the key being pressed. The Mixture IV should never be used without stops of lower pitches. The Mixture IV is typically added to diapason or flute ensembles, or to a reed chorus.
Basson 16’	Chorus reed tone at the 16’ pitch level, designed to supplement the other chorus reeds. Also usable as a distinctive solo reed.
Trompette 8’	Chorus reed stop of rich harmonic development. Can also be used as a solo voice.
Clairon 4’	A bright 4’ chorus reed. Combines with the Basson 16’ and Trompette 8’ to form the Swell reed chorus. Particularly useful as a solo voice.
Tremulant	Applies a vibrato effect, natural to the human voice and wind instruments, to the Swell division stops when selected. Also applies to (SW) voices in the Pedal Division.
MIDI on Swell	Opens MIDI channel to the Swell manual and division.

SWELL PERCUSSION VOICES

Celesta	Delicate percussion sound similiar to a music box.
Harp	Typical hand-plucked stringed Harp.
Handbells	Typical English handbell sound.

GREAT ORGAN:

Lieblichgedackt 16'	Softer stopped flute of delicacy and definition. Useful where a soft 16' pitch is required.
Diapason 8'	Foundation stop of the Great principal chorus, which consists of the Diapason 8', Octave 4', and Superoctave 2'.
Rohrflöte 8'	Full-bodied, partially stopped flute tone.
Flute Celeste II (8')	Two soft flute tones, one slightly detuned from the other, that create a warm celeste.
Octave 4'	The 4' member of the Great principal chorus.
Spitzflöte 4'	Partially stopped flute tone.
Superoctave 2'	An open metal stop that produces foundation tone at the 2' pitch level.
Mixture IV	A compound stop of principal tones. Four notes in octave and fifth relationships sound together when a single key is depressed. As pitches progress upward, they "break" back to the next lower octave or fifth. Used to cap the Great principal chorus, adding brilliance and pitch definition throughout the entire compass.
Chimes	Typical Tubular Chimes expressed with the Great Shoe.
Tremulant	Operates the same as the Tremulant in Swell, but affects stops in the Great division. It will not couple to the pedal voices.
Swell to Great	This intermanual coupler allows Swell division stops to be played from the Great manual.
MIDI on Great	Opens MIDI channel to Great manual and division.
Classic Voicing Gt/Pd	See Section II, Solo Voices and Second Voices.

GENERAL STOPTABS:

Bass Coupler	When this coupler is used, the lowest note played on the Great manual will automatically key any Pedal voice, playing those stops that have been selected in the Pedal division as well as those in the Great division.
Melody Coupler	When used, the highest note played on the Great manual will automatically key, an appropriate Swell melody voice, such as Trompette or Basson, playing all stops that have been selected in the Swell division as well as those in the Great division. This feature allows accentuation of the melody.
Solo Organ Voices	See Section II, Solo Voices and Second Voices.
Romantic Tuning Off	When activated, a second “tight” tuning is drawn, resulting in a less warm sound.
Tremulants Full	When activated along with one or more of the organ’s tremulants, this control causes the tremulants to become much deeper in their oscillation than normal classical tremulants. Useful for Gospel music, etc. Also known as “Vibrato.”
Memory B	When used, this tablet allows access to ten general combinations that are completely independent of those on the “A” memory.
Console Speakers Off	De-activates the internal speakers.
External Speakers Off	De-activates the external speakers.

EXPRESSION SHOES

The MDS-8 features two expression shoes. These are volume pedals located under the manuals in the lower center of the console. The shoe on the left expresses the Great and Pedal divisions, while the one on the right expresses the Swell division.

REVERB SWITCH

The Reverb is activated by the toggle switch located underneath the left side of the console. See page 17 of this manual, REVERBERATION.

SOLO VOICES AND SECOND VOICES

SOLO ORGAN VOICES

In addition to the comprehensive stop specification of the MDS-8, there are a variety of solo stops that can be accessed from the Swell manual using the **Solo Organ Voices**. These second voices are accessed from stop tablets in the Swell division. The stopnames are printed on the stop tablets in red superscript as follows: Tuba Mirabilis, Open Flute, Clarinet, and Cor Anglais. The Solo Organ Voices are activated by first depressing the Solo Organ Voices stop tablet and then selecting the desired stop in the Swell division.

SWELL

Tuba Mirabilis 8'	An unusually brass-like and intensely loud Tuba. A brilliant fanfare stop.
Open Flute 8'	An open wood or metal Flute of 8' manual pitch.
Clarinet 8'	An imitative reed stop of 8' pitch.
Cor Anglais 8'	An imitative reed stop of 8' pitch sounding like its orchestral counterpart.

CLASSIC SECOND VOICES

The characteristics of several stops in the Great and Pedal divisions can be changed using the **Classical Voicing Gt-Pd** control. As in the Swell division, the second voices in the Great and Pedal divisions are accessed from stop tablets. Certain stop tablets in the Great and Pedal have two stopnames, one engraved in black, the other in red. Standard specification stops are shown in black; Classic Second Voices are shown in red. Classical Second Voices are accessed by first depressing the Classical Voicing Gt-Pd stop tablet and then selecting the desired stops in the Great and Pedal divisions.

GREAT

Principal 8'	Foundation stop of 8' pitch.
Holzgedackt 8'	A stopped wooden Flute of 8' pitch.
Harmonic Flute 4'	A 4' Flute of metal or wood construction.
Cymbale III	Compound stop of principal tones. One key produces three distinct pitches at octave and fifth relationships to the key being pressed. The Cymbale III should never be used with out stops of lower pitches. It is typically added to Diapason or Flute ensembles after the Mixture IV.
Carillon	Suggests the sounding of small bells.

PEDAL

Sub Bass 16'	Principal stopped Bass of the organ.
Oktav 8'	Foundation stop of Diapason tone quality.

ARTISTIC REGISTRATION

Organ registrations fall into two broad categories: solo combinations and ensembles.

A solo combination is one in which a melody is played on one keyboard and the accompaniment played on another, while the pedal often provides a supporting bass line. Almost any stop or combination of stops will sound good as a solo voice. A contrasting tone quality should be chosen for the accompaniment, so that the accompaniment is softer than the solo voice. The Pedal stops must provide a foundation for the sound without covering it.

Most 8' reed stops make interesting solo voices. The addition of a 4' flute or a flute mutation (e.g., Nasat or Terz) to a reed, such as the Trompette, colors the sound further and increases its volume slightly. Adding an 8' flute to a reed will add body to the sound.

Flutes can be used alone or in combinations as solo voices. One special combination of flutes that creates an appealing and historically significant solo combination is the Cornet (pronounced kor-NAY). The Cornet is created by using the following Swell stops: Gedackt 8', Koppelflöte 4', Nasat 2-2/3', Blockflöte 2', and Terz 1-3/5'. This solo combination was used widely in Baroque organ music, but it is just as appropriate for some modern music. Useful variations of the Cornet may be achieved by eliminating the 4', the 2', or both.

When choosing stops for a solo voice, it is not always necessary to include an 8' stop; for example, since the 4' flute has a tone quality different from that of the 8' flute, the 4' flute can be used as an independent solo voice. By playing the solo an octave lower than written, the notes will sound at the correct pitch. In similar fashion, a 16' stop can be selected and the notes played an octave higher than written. Tonal variety will be gained, because each stop has its own tone color.

For accompaniment, the most desirable voices are the 8' flutes or strings on each manual. Celestes often make effective accompaniments. The correct choice depends on the volume of the solo tone (a soft solo voice requires the softest accompanimental stop), the element of contrast, and the location of the solo stop. A bright, harmonically rich solo reed, for example, can be accompanied by either a string or flute, but the flute will often contribute greater interest because of its greater contrast.

Try to seek a "natural" balance of volume between solo and accompaniment. This will be especially easy to accomplish since the solo and accompaniment voices are expressed by separate expression shoes.

SUGGESTED SOLO REGISTRATIONS

CHIMES SOLO

Swell: Gedackt 8', Viola 8', Viola Celeste 8'
Great: Chimes
Pedal: Lieblichgedackt 16', Swell to Pedal

Play solo on Great.

SWELL SOLO COMBINATION

Swell: Gedackt 8', Koppelflöte 4', Nasat 2-2/3', Blockflöte 2', Terz 1-3/5'
Great: Rohrflöte 8', Spitzflöte 4'
Pedal: Lieblichgedackt 16', Gedacktflöte 8'

Play solo on Swell.

FLUTE SOLO

Swell: Viola 8', Viola Celeste 8'
Great: Rohrflöte 8'
Pedal: Lieblichgedackt 16', Swell to Pedal

Play solo on Great.

TRUMPET SOLO

Swell: Trompette 8'
Great: Diapason 8', Octave 4', Superoctave 2', Mixture IV
Pedal: Bourdon 16', Octave 8', Choralbass 4'

Play solo on Swell.

These few combinations demonstrate basic techniques of solo registration. In creating registrations of your own, remember these three simple rules:

1. Seek tonal contrast between solo and accompaniment.
2. Be sure the solo is louder than the accompaniment.
3. Choose a solo whose character is appropriate to the specific piece.

ENSEMBLE REGISTRATIONS

Ensemble registrations involve groups of stops that are played together, usually, but not always, with both hands on one keyboard. They are characterized by compatibility of tone, clarity, and occasionally power. Such registrations are used in hymn singing, choir accompaniments, and much of the contrapuntal organ literature.

Volumes have been written on the subject of ensemble registration. Following is a summary of the major points.

Ensembles are created by combining stops. Always consider two factors, tone quality and pitch. Ensembles begin with a few stops at the 8' and/or 4' pitch and expand

“outward” in pitch as they are built up. New pitches are usually added in preference to another 8’ stop.

Ensembles are generally divided into three tonal groupings or “choruses”:

The Principal Chorus is the most fully developed with representation in various divisions of the organ and at every pitch from 16’ (Diapason) to high mixtures. The Principal Chorus is sometimes called the narrow-scale flue chorus, a reference to the relative thinness of Principal pipes in relation to their length.

The Flute Chorus is also well represented with a diversity of stops at various pitches. Generally speaking, the Flute Chorus is composed of less harmonically developed tones, and is smoother and of lesser volume than the Principal chorus. The Flute Chorus is sometimes called the “wide-scale flue chorus”, owing to the generally “fatter” look of flute pipes as compared to principals.

The Reed Chorus includes those reed tones designed to be used in the ensemble buildup. Not all reed voices are ensemble tones. An Hautbois, for example, is usually a solo stop. The various Trumpets, Clairons, Bassons, etc., are usually ensemble voices that add brilliance, power, and incisiveness to the sound. If you have questions as to whether a specific reed is a solo or ensemble stop, refer to the stoplist in the preceding section.

The Swell Reed Chorus of Basson 16’ and Trompette 8’ represents an entity important to French organ music and the full ensemble of the organ. These stops create a “blaze” of richly harmonic sounds that top off both flue choruses.

Another special ensemble combination important in French music is the Cornet, which was discussed in the section on Solo Registration. This combination can be used with the chorus reeds and mutations to create the “Grand Jeu.” The Cornet is also useful in Romantic ensembles to add weight and thickness to the sound.

Here are typical ensemble combinations for the Swell and Great manuals:

Great

1. Rohrflöte 8’, Spitzflöte 4’
2. Rohrflöte 8’, Spitzflöte 4’, Superoctave 2’
3. Diapason 8’, Octave 4’
4. Diapason 8’, Octave 4’, Superoctave 2’

Great Continued

5. Diapason 8’, Octave 4’, Superoctave 2’, Mixture IV
6. Diapason 8’, Rohrflöte 8’, Octave 4’, Spitzflöte 4’, Superoctave 2’, Mixture IV

Swell

1. Gedackt 8', Viola 8'
2. Gedackt 8', Viola 8' Koppelflöte 4'
- 3.** Gedackt 8', Viola 8' Koppelflöte 4', Blockflöte 2'
4. Gedackt 8', Viola 8' Spitzprinzipal 4', Koppelflöte 4', Blockflöte 2'
5. Gedackt 8', Viola 8' Spitzprinzipal 4', Koppelflöte 4', Blockflöte 2', Fourniture IV
6. Gedackt 8', Viola 8' Spitzprinzipal 4', Koppelflöte 4', Blockflöte 2', Fourniture IV, Trompette 8'

The use of the Swell to Great coupler allows these separate ensembles to be combined on the Great manual. For example, the **#5** Great and **#3** Swell registrations coupled together and played on the Great form a nice round hymn combination.

The Pedal ensemble is created in much the same way as the manual ensembles, starting at 16' pitch instead of 8'. Be careful that the volume of the pedals is not greater than that of the manuals. Although the manual to pedal couplers are useful in bringing clarity to the pedal line, especially on softer registrations, avoid the temptation to rely constantly on one or two 16' stops and a coupler. Please note that the softest stops and flute mutations are normally not used with ensembles.

FULL ORGAN

Due to the immense capabilities of the Allen Digital Computer Organ, every stop and coupler on the instrument could be used simultaneously without distortion, if the organ is regulated properly. Striving for good registration however, the organist would not haphazardly select every stop on the instrument. For best results, listen and include only those stops that really contribute to the fullness and brilliance of the ensemble. Eliminate soft stops and solo stops that make no purposeful contribution.

This short treatment barely scratches the surface of the fascinating subject of organ registration. For those interested in gaining further insight into this vital area of organ playing, we recommend the following texts:

Audsley, George Ashdown. *Organ Stops and their Artistic Registration*.

Hialeah, FL: C.P.P. Belwin, 1985.

Irwin, Stevens. *Dictionary of Pipe Organ Stops*. 2nd ed.

New York: Macmillan Books, 1983.

TRANSPOSER

Vast computer capability makes it possible to perform the sometimes difficult task of transposing, while allowing the organist to play in the notated key. Operation of the Transposer is controlled by the Transposer knob, found inside the Console Controller™ drawer on the left side underneath the Great manual. Neutral position (no transposition) for the knob is marked “●.” To shift the music to a higher key, move the knob counter-clockwise. The key can be raised a maximum of five half-steps. To shift to a lower key, move the Transposer knob clockwise from “●.” The key can be lowered a total of seven half-steps. A RED INDICATOR LIGHT COMES ON WHENEVER THE TRANSPOSER KNOB IS MOVED FROM THE “●” POSITION.

WHY TRANSPOSE?

1. Because the range of a song will not always suit the vocal range of a particular singer. By adjusting the transposer, the piece can be sung more comfortably and effectively.
2. Because some instruments are non-concert pitch. A trumpet in B^b, for example, can play the same music as the organist, if the Transposer knob is set two half-steps lower.
3. Because hymn singing can sometimes be improved by a more favorable key selection. Hymn singing can also be enhanced by playing the hymn in its original key, and then playing a short modulation at the end of the stanza that leads into the key one-half step above the key in which the hymn is written. If the hymn is already in a fairly high key, it may be preferable to play the first few stanzas with the Transposer set *down* one-half or one whole step, then modulate up to the original key for the final stanza.

SETTING PISTONS

Allen’s double memory capture system allows the organist to set two complete groups of piston combinations covering the entire organ, or each of two organists to set his or her own combinations on one memory. Select the capture memory you want to use by depressing the Memory B piston button. (The capture action is not fully operable until approximately six seconds after the organ is turned on.)

For example, choose a stop registration you wish to place on General Piston 1. You may select any combination of stops. General pistons are located on the left side of the Piston Rail (Piston Slip) under the Swell Manual and are numbered 1 through 5. General pistons are sometimes set from soft to loud using graduated registrations. After you have selected the stops, press and hold the SET piston, while holding SET press and release General piston 1. Finally, release the SET piston. General piston 1 will “remember” the combination of stops you assigned to it and bring on that registration each time General Piston 1 of the same memory is pressed. You can change the registration assigned to any General piston at any time by repeating the above procedure.

PROGRAMMABLE CONSOLE FUNCTIONS

- I. Description
- II. Choosing MIDI expression settings
- III. Selecting the desired expression mode
- IV. Restoring factory settings
- V. Automatically checking the capture and stop action
- VI. Music Memory™

I. DESCRIPTION

- A. The MDS-8 is equipped with a programmable control system that provides useful extra functions. It is not necessary for the organist to use all available features to play the instrument. The organ is capable of all traditional functions without the use of the control system. The control system provides additional flexibility for those organists whose requirements go beyond the capabilities of the traditional organ console.

II. CHOOSING MIDI EXPRESSION SETTINGS

- A. The expression pedals control the volume of the organ regardless of the setting of the MIDI expression function. When using the organ in conjunction with other MIDI devices, however, it is possible to choose from the following types of MIDI data transmission via the expression pedal.
 1. Poly - Volume: this is the default (normal) mode. MIDI volume information is transmitted from each division on the MIDI channel assigned to that division. Swell MIDI data is transmitted on MIDI Channel 1, Great on Channel 2, and Pedal on Channel 3. This is the proper mode to use when recording to, or playing back from, a sequencer.
 2. Poly - Velocity: should be selected if you are using a percussion voice from an external MIDI keyboard. For example, if a digital piano sound were played from the organ keyboard, the piano could be made to sound more realistic in this mode. By depressing the Expression pedals the piano “strings” would sound as if they were struck “harder” than when the pedals were in the closed position. The transmission channels for all divisions are as stated in Section V.

NOTE: When in this mode, all expression information is sent in key velocity form. Changes in velocity will occur only when a new note is struck; consequently, if you change the position of the Expression pedals after a note is struck, there will be no change in velocity until a new note is struck. Do not use this mode when recording to a sequencer, or the organ’s expression will not function when playing back from the sequencer.

3. Swell - Volume: sends MIDI expression data only on the Swell MIDI Channel. Information is transmitted on MIDI Channel 1. Some MIDI devices do not respond properly to MIDI volume information on multiple channels. If a MIDI device does not properly receive volume information when the organ is in Poly - Volume mode, use the Swell - Volume mode. It may be necessary to set the external device to MIDI Channel 1.
4. No Expression: cancels transmission/reception of expression data.

III. SELECTING THE DESIRED EXPRESSION MODE

- A. Press and hold the “Set” Piston and press the “R” Piston twice. The green Power On light will flash indicating that the organ is in the MIDI Expression Selection Mode and that the current setting is Poly - Volume. This setting is automatically engaged when the organ is switched on.
- B. To select Poly - Velocity, press General Piston 2. The bottom three lights of the Swell expression indicator will flash, indicating that the organ is now in Poly - Velocity mode.
- C. To select Swell - Volume, press General Piston 3. The middle four lights of the Swell expression indicator will flash, indicating that the organ is now in Swell - Volume mode.
- D. To select No Expression, press General Piston 4. The top three lights of the Swell expression indicator will flash, indicating that the organ is now in No Expression mode.
- E. If a different setting is chosen, and the Expression Selection Mode is re-entered later, the current setting will be shown by the appropriate flashing lights as described above. To return to Poly - Volume mode, re-enter the Expression Selection Mode and press General piston 1. The Power On light will flash, indicating that the organ is now in Poly - Volume mode.
- F. To return to normal playing mode, hold the “Set” Piston and press the “Cancel” Piston.

IV. RESTORING FACTORY SETTINGS

- A. There are certain functions that can be restored to the original factory settings. They are: Capture Memory B, and MIDI settings.
 1. To enter the Factory Setting Restoration Mode, press and hold the “Set” Piston and press the “R” Piston three times. The bottom five lights of the GT/PD expression indicator will flash to indicate that the organ is in the Restoration mode.
 2. To restore all factory settings, press General Piston 1.

3. To return to normal playing mode, press and hold the “Set” Piston and press the “Cancel” Piston.

Note: All user-programmed Capture Memory B settings are erased when factory settings are restored.

V. AUTOMATICALLY CHECKING THE STOP ACTION

- A. This is a self-check of the capture system to insure that every individual stop is controllable by the capture action.
 1. To enter the self-check mode, press and hold the “Set” Piston and press the “R” Piston four times. The top five lights of the GT/PD expression indicator will flash to indicate that the organ is in self-check mode.
 2. Start the self-check by pressing General Piston 1. The stops will move down and up consecutively. If any stop does not move, notify your Allen authorized service technician. You may interrupt the scanning process at any time by pressing and holding the “Set” piston and then pressing the “Cancel” piston.

VI. Music Memory™

The MDS-8 features Allen’s Music Memory™, a selection of pre-recorded demonstration pieces in a variety of tonal combinations and musical styles. To access these selections, press and hold the “Set” Piston and press the “R” Piston once. The Transposer light will flash indicating that the organ is now in the Demonstration mode. Demonstration pieces can be accessed using General Pistons 1 through 5. Each piston will access a different musical selection. Piston 6 acts as a stop/continue switch. Pressing Piston 6 once will stop the selection in mid-play. Pressing Piston 6 a second time will allow the selection to continue from the point at which it was stopped. It is possible to skip from one demonstration piece to any other by simply pressing the piston of your choice during playback. To return to normal playing mode, hold the “Set” Piston and press the “Cancel” Piston.

NOTE: The expression pedals must be pushed fully open when using Music Memory™.

MIDI GUIDE

I. MIDI FOR ORGANISTS

A. WHAT IS MIDI?

The term MIDI is an acronym for Musical Instrument Digital Interface. MIDI has been adopted by the music industry as a standard means of communication between digital musical devices. This enables devices of different types and manufacturers to communicate with ease. MIDI by itself will not make a sound. It is not necessary to understand all of the technical aspects of MIDI in order to take advantage of the benefits it offers. It is important to explore the potential MIDI holds for musicians, as well as the various MIDI applications available today.

B. TYPES OF MIDI DEVICES

MIDI devices fall into two categories. The first category consists of musical instruments such as organs and synthesizers, which transmit and receive MIDI data. The second category includes controllers and processors, that, as their name implies, can transmit, receive, or manipulate MIDI data but do not necessarily produce sound themselves. Sequencers, which are MIDI recording devices, fall into this category. Although the technical nature of their recording and editing processes differs from those of a tape recorder, many operate in similar fashion. Most are equipped with record, playback, fast forward and reverse controls, that function in the same way as their tape recorder counterparts.

C. TYPES OF MIDI DATA

There are several types of MIDI messages that can be sent from one device to another. The most common is keying information, allowing one device to sense which keys have been played on another device. This means an organ equipped with MIDI can send information to other MIDI devices, e.g., synthesizers or sequencers, and can play those devices simultaneously or record information to be played back later.

Allen organs incorporate a complete MIDI system allowing the transmission and reception of all types of MIDI information (velocity keying, volume change, sustain, registrations, Crescendo settings, and more). It is even possible to control several devices from one manual simultaneously, or control a different device from each manual of the console.

D. MIDI AS A PRACTICE TOOL

For the organist/choir director, the MIDI organ console and sequencer are valuable rehearsal tools for both choral and organ works. Anthem accompaniments may be recorded in advance and played back by the sequencer during choir rehearsal. The director, freed from the role of accompanist, can focus entirely on directing the choir. The sequencer may even play the music back at a slower tempo without affecting pitch, or at a lower pitch without affecting tempo, features that are useful in rehearsing difficult choral passages. If a particular sequencer allows multi-tracking, each vocal section's part may be recorded on a different track, and then played back individually, or in any combination, for increased flexibility.

Multi-tracking can also be used in teaching and learning new organ works. The teacher may record each hand or pedal part on a different track, allowing the student to "mute", or turn off, any part being practiced while still being able to hear the sequencer play the rest of the composition. The student's ability to hear the piece in its entirety and to become aware of, from the earliest stage of learning a composition, the interrelationship of its voices, is especially valuable in learning contrapuntal works.

E. MIDI AS A REGISTRATION TOOL

In some churches and auditoriums it is difficult to judge the effectiveness of a registration from the organ console. Due to the acoustics of the room, or positioning of the console, the sound of the instrument may be different when listened to from the congregation's or audience's vantage point. MIDI allows the organist to check registrations by recording his playing and registration to a sequencer and then listening from different locations in the room during the music's playback.

F. OTHER USES FOR MIDI

MIDI has opened new possibilities to the organist. The MIDI organ console's ability to control external keyboards or sound modules puts an ever increasing array of non-traditional sounds at the organist's fingertips, with a degree of control only possible through the flexibility of an organ console. The ability to record MIDI data with the use of a sequencer opens a variety of new possibilities, both in practice and performance situations. Computer programs are even available that allow musicians to play MIDI devices connected to a computer and have their performance printed out as conventional five line musical notation. Because MIDI is an industry-wide standard, today's MIDI instruments will be compatible with tomorrow's MIDI innovations.

II. CONNECTING THE ALLEN ORGAN TO OTHER MIDI DEVICES

The MIDI-capable Allen Organ consoles may be connected to a variety of MIDI devices. A diagram for connecting the Allen organ to a variety of MIDI devices can be found at the end of this section of the manual. Although the diagram is not meant to be an exhaustive list of possibilities, they illustrate the most commonly used combinations of MIDI devices. If more specific information is required, please consult the owner's manuals of the external devices being connected to the Allen Organ.

III. SmartMIDI™

Your Allen MDS organ features SmartMIDI™, an expanded MIDI system with increased flexibility. Allen's SmartMIDI™ provides a comprehensive interface between MIDI sound modules such as the Allen MDS-Expander™, and digital sequencers such as the Allen Smart Recorder™. Two MIDI OUT ports, one switched and one unswitched, allow unprecedented control over external MIDI devices attached to the organ.

Under normal circumstances, MIDI sound modules should be connected to the switched MIDI port labeled MIDI OUT 2. Doing so allows the organist to disable the sending of MIDI data from the organ to the sound module. Devices such as MIDI sequencers should be connected to the unswitched MIDI port labeled MIDI OUT 1, eliminating the necessity of having to draw the MIDI stop controls before recording a digital sequence. The drawing below illustrates the proper procedure for connecting the Allen MDS-Expander™ II and Allen Smart Recorder™ to an Allen MDS organ equipped with SmartMIDI™.



IV. MIDI Transmission Channels

MIDI information may be broadcast on several different channels simultaneously. This allows many channels of information to be sent through one cable and used independently of one another, similar to the way many television broadcasts can be sent through one cable. In order to receive the intended information, a MIDI device must be tuned to the same channel as the device which is sending the information. Your Allen organ transmits MIDI information on several channels. When external MIDI devices are connected to the organ, it is important to make sure that the devices' channels of transmission and reception match the MIDI channels of the Allen organ divisions to which they are assigned.

The MDS-8 transmits MIDI on the following channels:

Swell = Channel 1
Great = Channel 2
Pedal = Channel 3

MIDI Program Change Messages are transmitted from the organ's General Pistons on MIDI Channel 8. These program change messages can be used to change the settings of MIDI sound modules or synthesizers which are connected to the organ. Please consult the Console Controller™ guide and the owner's manual of your MIDI device(s) for more information on how MIDI Program Change Messages are handled by each particular device.

In addition to note information, MIDI Volume Messages are sent on MIDI channels 1, 2, and 3 by the organ's expression shoes. In this manner, the volume level of connected MIDI devices may be controlled. Please consult the owner's manual of your MIDI device(s) for more information on how MIDI Volume information is handled by each device.

If any external MIDI device is used to transmit information to the Allen organ, the same assignment of MIDI channels must be used as outlined above.

INSTALLATION, VOICING, CARE OF THE ORGAN, and BATTERY BACKUP

INSTALLATION

Wherever your MDS organ may be situated, careful installation is a prerequisite to achieving successful results. Your Allen representative is well qualified to guide you in planning for this. Factory assistance in planning the installation is also available and may, in fact, be sought by your Allen Organ representative. Once the organ is installed,

be mindful of changes made to the room the organ is located in. Care must be taken to insure that when acoustical changes occur, your Allen representative is notified.

VOICING

The MDS organ presents unprecedented accuracy in the scaling and voicing of each note of every stop. This musical breakthrough is an inherent part of the engineering design of the instrument. Final adjustments in scaling and voicing involve controls within the console and are best left to an expert. These adjustments are normally a part of installation and, once done, should not require changes, unless the instrument is moved to a new location or major changes are made to the room the organ resides in.

Bass frequency projection is strongly affected by tone cabinet location. Although none of the tone cabinets should be moved once the installation has been completed, extra care should be exercised to prevent inadvertent movement of the bass tone cabinets.

When chambers have been utilized to house external speakers, make sure they are not later used for storage closets. Placing sound absorbent materials (robes, flowers, papers, etc.) will only damage the organs sound quality.

REVERBERATION

The Digital Reverberation System provides the spatial ambiance of various sizes of reverberant rooms. Although most effective in poor (non-reverberant) acoustic environments, it even enhances the tones in optimal acoustic settings. The Digital Reverb toggle switch is located underneath the manuals on left side of the console. This switch controls ON or OFF of the Digital Reverberation. Adjustments to the Digital Reverberation System must be made by your Allen sales representative or service technician.

CARE OF THE ORGAN

Your Allen Digital Organ constitutes a major advance in long-term maintenance-free operation. There are no regular maintenance procedures required and, therefore, no periodic maintenance schedules to be observed.

Reasonable care will keep the instrument looking beautiful for years to come. The wood surfaces may be cleaned using a soft cloth dampened with lukewarm water. A mild solution of lukewarm water and furniture soap may be used to remove fingerprints, etc. Polish dry with a soft cloth.

Do not use wax, sprays or oils on the finish. Satin finished surfaces will take on a semi-gloss appearance when waxed and will eventually become yellowed. If you need to “polish” the organ for a special event, use only a very high quality wood furniture polish.

Keys and stops should be cleaned using two clean cloths. Immerse one in clear, lukewarm water and wring it thoroughly damp dry. Loosen the dirt with this cloth, then polish with the dry cloth. Do not use soap or detergent on the keys or stops.

To polish the clear music rack, a furniture wax polish can be sprayed on a dry cloth and rubbed on the front of the music rack. Try to keep the wax off of the wood finishes. This will keep the music rack most clear.

Your Allen Organ not only faithfully reproduces the organ traditions of the past but also anticipates the innovations of the future. Should you have questions that are not addressed in this manual, please do not hesitate to contact your local Allen Organ representative. Welcome to the family of satisfied Allen Organ owners!

BATTERY BACKUP SYSTEM

The memory for the capture system on your MDS organ is sustained by a Lithium battery. This allows capture settings and related items to be retained in memory when the organ is switched off or unplugged. Under normal circumstances, the Lithium battery should last for several years. A built-in warning system will alert you when the battery becomes weak and needs to be replaced. The green power ON indicator light will flash for about ten seconds after the organ is switched on if the battery is in need of replacement.

Should the battery in your MDS organ require replacement, contact your local Allen authorized service representative.

USA ONLY **CAUTION**

Do not plug the instrument into any current source other than 105-128 volts, 50/60 Hertz alternating current (AC). A verified grounded outlet is essential to proper operation and protection of the instrument. Proper polarity should be checked with an AC circuit analyzer before connecting the organ.

Do not change the cable plug or remove the ground pin or connect with a two-pole adapter.

If you are in doubt about your electrical connection, consult your local electrician or power company.

In churches where circuit breakers are turned off between worship services, the circuit breaker affecting the organ console AC power should have a guard installed to prevent its being accidentally switched off.

Read and comply with all instructions and labels that may be attached to the instrument.

Warning: This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been type tested and found to comply with the limits for a Class B Computing Device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. Should this equipment cause interference to radio communications, the user at his own expense will be required to take whatever measures may be necessary to correct the interference. Whether this equipment actually causes the interference to radio communications can be determined by turning the equipment off and on. The user is encouraged to attempt to correct the interference by one or more of the following measures:

Reorient the receiving antenna.

Relocate the organ with respect to the receiver.

Move the organ away from the receiver.

Plug the organ into a different electrical outlet, so that the organ and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio technician for additional suggestions.

MDS-8

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AOC P/N 033-0094-1

ALLEN ORGAN COMPANY

For more than fifty years--practically the entire history of electronic organs--the Allen Organ Company has sought to build the finest organs that technology would allow.

In 1939, Allen built and marketed the world's first purely electronic oscillator organ. The tone generators for this first instrument used two hundred forty-four vacuum tubes, contained about five thousand components, and weighed nearly three hundred pounds. Even with all this equipment, the specification included relatively few stops.

By 1959, Allen had replaced vacuum tubes in the oscillator organs with transistors. Thousands of transistorized instruments were built, including some of the largest, most sophisticated oscillator organs.

Only a radical technological breakthrough could improve upon the fine performance of Allen's solid-state oscillator organs. Such a breakthrough came in conjunction with the U.S. Space Program in the form of highly advanced digital microcircuits.

Your MDS organ is the product of years of refinement in digital techniques by Allen engineers. It represents the apex of computer technology applied to exacting musical tasks. The result is an instrument of remarkably advanced tone quality and performance.

Congratulations on the purchase of your new Allen Digital Computer Organ! You have acquired the most advanced electronic organ ever built, one that harnesses a modern computer to create and control beautiful organ tones.

Familiarize yourself with the instrument by reading through this booklet. The sections on stop description and organ registration are intended for immediate use as well as for future reference

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DESCRIPTION OF STOPS

PITCH FOOTAGE

The number appearing on each stop along with its name indicates the “pitch” or “register” of the particular stop. It is characteristic of the organ that notes of different pitches may be sounded from a single playing key. When this sound corresponds to the actual pitch of the playing key, the note (or stop) is referred to as being of 8’ pitch; therefore, when an 8’ stop is selected and middle C is depressed, the pitch heard will be middle C. If it sounds an octave higher, it is called 4’ or octave pitch. If it sounds two octaves higher, it is called 2’ pitch, while a stop sounding three octaves higher is at 1’ pitch. Likewise, a 16’ stop sounds an octave lower, and a 32’ stop sounds two octaves lower.

Stops of 16’, 8’, 4’, 2’, and 1’ pitch all have octave relationships; that is, these “even numbered” stops all sound octaves of whatever key is depressed. Pitches other than octaves are also used in organ playing. Their footage number always contains a fraction, and they are referred to as mutations. Among these are the Nasard and Quinte 2-2/3’, Tierce 1-3/5’, and Quintflöte 1-1/3’. Because they introduce unusual pitch relationships with respect to the fundamental (8’) tone, they are most effective when combined with other stops, and are used either in solo passages or in small ensembles of flutes (see explanation of Cornet in Section II).

TONAL FAMILIES

Organ tones divide into two main categories: flues and reeds. In a pipe organ, flue pipes are those in which the sound is set in motion by wind striking directly on the edge of the mouth of the pipe. Flues include principal tones, flute tones, and string tones. Compound stops and hybrid stops are “variations” within these three families.

The term “imitative” means that the organ stop imitates the sound of the corresponding orchestral instrument; for example, an imitative “Viola 8” would be a stop voiced to sound like an orchestral viola.

Principal Voices Principal Diapason Octave Superoctave Quinte	Characteristic organ tone, not imitative of orchestral instruments. Usually present at many pitch levels, as well as in all divisions. Rich, warm, and harmonically well developed.
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Flute Voices <i>Open:</i> Harmonic Flute Melodia flute mutation stops <i>Stopped:</i> Gedackt Bourdon Quintadena Rohrflöte	Voices of lesser harmonic development than Principal. Open flutes somewhat imitative; stopped flutes not. Present at all pitch levels and in all divisions.
String Voices Salicional Viola Voix céleste	Mildly imitative voices of brighter harmonic development than Principal. Usually appear at 8' pitch.
Compound Voices Mixture Cornet	Voices produced by more than one rank sounding simultaneously.
Hybrid Voices Gemshorn Erzähler Spitzflöte	Voices that combine the tonal characteristic of two families of sound, e.g., flutes and principals, or strings and principals.

In *reed* pipes, a metal tongue vibrates against an opening in the side of a metal tube called a shallot. The characteristic sounds of different reeds are produced through resonators of different shapes. The family of reeds subdivides as follows:

Reed Voices <i>Chorus or Ensemble:</i> Trumpet Posaune Clairon <i>Solo:</i> Hautbois Clarinet Krummhorn	Voices of great harmonic development; some imitative, others not.
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The Allen Digital Computer Organ provides authentic examples of various types of voices as listed above. Some of these are protected by copyrights owned by the Allen Organ Company. The voices are stored in memory devices, each having affixed to it a copyright notice; e.g., © 1996 AOCO, © 1997 AOCO, etc., pursuant to Title 17 of the United States Code, Section 101 et seq.

MDS-8 STOPLIST

Following is a discussion of individual stops and how they are generally used. Please note that slight variations in specifications may be encountered.

PEDAL ORGAN:

Bourdon 16'	Stopped flute tone of weight and solidity.
Lieblichgedackt 16' (Swell expression)	Softer stopped flute of delicacy and definition. Useful where a soft 16' pitch is required. Can have Swell tremulant.
Octave 8'	8' member of the Pedal principal chorus.
Gedacktflöte 8'	Stopped flute tone of 8' pitch, useful in adding clarity to a pedal line in combination with the Bourdon 16' or Lieblichgedackt 16'.
Choralbass 4'	Pedal 4' principal tone.
Mixture IV	Compound stop of principal tones. One pedal produces four distinct pitches at octave and fifth relationships to the pedal being pressed. Used to crown the Pedal principal chorus.
Posaune 16' (Swell Expression)	A strong Pedal reed that lends strength and "snarl" to the Pedal line. Can have Swell tremulant.
Trompete 8'	Clear Pedal reed useful in adding definition to a full pedal combination, or as a solo Pedal trumpet.
Great to Pedal	Connects all Great stops to the Pedal.
Swell to Pedal	Connects all Swell stops to the Pedal.
MIDI on Pedal	Opens MIDI channel to the Pedalboard and division.

SWELL ORGAN:

Gedackt 8'	Stopped flute tone of moderate harmonic development. Provides the 8' member of the Swell flute chorus and is useful by itself or with other flutes and mutations in creating solo voices.
Viola 8'	Soft string tone.
Viola Celeste 8'	String tone, slightly detuned, used with the Viola 8' to create a warm string celeste. A celeste is created by sounding two voices simultaneously together, one tuned slightly sharp or flat of the other, creating a warm, undulating, "celestial" effect. The

combination of the Viola 8' and Viola Celeste 8' will create beautiful string celeste sounds.

Spitzprinzipal 4'	Hybrid stop which is predominantly principal tone with a string like edge.
Koppelflöte 4'	Distinctive stopped flute voice that works well in ensembles of flutes or strings, or as a solo voice.
Nasat 2-2/3'	Flute mutation that sounds one octave and a fifth above the keys played. Always used with other stops (usually beginning with 8') for coloration.
Blockflöte 2'	A delicate, clear open flute at 2' pitch.
Terz 1-3/5'	Flute mutation that causes the pitch to sound a seventeenth (two octaves and a third) higher than played. Used with 8' stops or flute ensembles.
Mixture IV	Compound stop, or mixture comprised of principal tones. Each note played produces four distinct pitches at octave and fifth relationships to the key being pressed. The Mixture IV should never be used without stops of lower pitches. The Mixture IV is typically added to diapason or flute ensembles, or to a reed chorus.
Basson 16'	Chorus reed tone at the 16' pitch level, designed to supplement the other chorus reeds. Also usable as a distinctive solo reed.
Trompette 8'	Chorus reed stop of rich harmonic development. Can also be used as a solo voice.
Clairon 4'	A bright 4' chorus reed. Combines with the Basson 16' and Trompette 8' to form the Swell reed chorus. Particularly useful as a solo voice.
Tremulant	Applies a vibrato effect, natural to the human voice and wind instruments, to the Swell division stops when selected. Also applies to (SW) voices in the Pedal Division.
MIDI on Swell	Opens MIDI channel to the Swell manual and division.

SWELL PERCUSSION VOICES

Celesta	Delicate percussion sound similiar to a music box.
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Harp Typical hand-plucked stringed Harp.

Handbells Typical English handbell sound.

GREAT ORGAN:

Lieblichgedackt 16' Softer stopped flute of delicacy and definition. Useful where a soft 16' pitch is required.

Diapason 8' Foundation stop of the Great principal chorus, which consists of the Diapason 8', Octave 4', and Superoctave 2'.

Rohrflöte 8' Full-bodied, partially stopped flute tone.

Flute Celeste II (8') Two soft flute tones, one slightly detuned from the other, that create a warm celeste.

Octave 4' The 4' member of the Great principal chorus.

Spitzflöte 4' Partially stopped flute tone.

Superoctave 2' An open metal stop that produces foundation tone at the 2' pitch level.

Mixture IV A compound stop of principal tones. Four notes in octave and fifth relationships sound together when a single key is depressed. As pitches progress upward, they "break" back to the next lower octave or fifth. Used to cap the Great principal chorus, adding brilliance and pitch definition throughout the entire compass.

Chimes Typical Tubular Chimes expressed with the Great Shoe.

Tremulant Operates the same as the Tremulant in Swell, but affects stops in the Great division. It will not couple to the pedal voices.

Swell to Great This intermanual coupler allows Swell division stops to be played from the Great manual.

MIDI on Great Opens MIDI channel to Great manual and division.

Classic Voicing Gt/Pd See Section II, Solo Voices and Second Voices.

GENERAL STOPTABS:

Bass Coupler When this coupler is used, **the lowest note played on the Great manual** will automatically key any Pedal voice, playing those

stops that have been selected in the Pedal division as well as those in the Great division.

- Melody Coupler When used, **the highest note played on the Great manual** will automatically key, an appropriate Swell melody voice, such as Trompette or Basson, playing all stops that have been selected in the Swell division as well as those in the Great division. This feature allows accentuation of the melody.
- Solo Organ Voices See Section II, Solo Voices and Second Voices.
- Alternate Tuning ON This stop changes the tuning of the entire organ. When on, one of the three Alternate tunings in the Console Controller™ will be activated. See Console Controller Guide.
- Tremulants Full When activated along with one or more of the organ's tremulants, this control causes the tremulants to become much deeper in their oscillation than normal classical tremulants. Useful for Gospel music, etc. Also known as "Vibrato."
- Console Speakers Off De-activates the internal speakers.
- External Speakers Off De-activates the external speakers.

EXPRESSION SHOES

The MDS-8 features two expression shoes. These are volume pedals located under the manuals in the lower center of the console. The shoe on the left expresses the Great and Pedal divisions, while the one on the right expresses the Swell division.

REVERB

The Reverb is activated by the rocker switch located in the console controller drawer. See page 17 of this manual, REVERBERATION.

SOLO VOICES AND SECOND VOICES

SOLO ORGAN VOICES

In addition to the comprehensive stop specification of the MDS-8, there are a variety of solo stops that can be accessed from the Swell manual using the **Solo Organ Voices**. These second voices are accessed from stop tablets in the Swell division. The stopnames are printed on the stop tablets in red superscript as follows: Tuba Mirabilis, Open Flute, Clarinet, and Cor Anglais. The Solo Organ Voices are activated by first depressing the Solo Organ Voices stop tablet and then selecting the desired stop in the Swell division.

SWELL

Tuba Mirabilis 8'	An unusually brass-like and intensely loud Tuba. A brilliant fanfare stop.
Open Flute 8'	An open wood or metal Flute of 8' manual pitch.
Clarinet 8'	An imitative reed stop of 8' pitch.
Cor Anglais 8'	An imitative reed stop of 8' pitch sounding like its orchestral counterpart.

CLASSIC SECOND VOICES

The characteristics of several stops in the Great and Pedal divisions can be changed using the **Classical Voicing Gt-Pd** control. As in the Swell division, the second voices in the Great and Pedal divisions are accessed from stop tablets. Certain stop tablets in the Great and Pedal have two stopnames, one engraved in black, the other in red. Standard specification stops are shown in black; Classic Second Voices are shown in red. Classical Second Voices are accessed by first depressing the Classical Voicing Gt-Pd stop tablet and then selecting the desired stops in the Great and Pedal divisions.

GREAT

Principal 8'	Foundation stop of 8' pitch.
Holzgedackt 8'	A stopped wooden Flute of 8' pitch.
Harmonic Flute 4'	A 4' Flute of metal or wood construction.
Cymbale III	Compound stop of principal tones. One key produces three distinct pitches at octave and fifth relationships to the key being pressed. The Cymbale III should never be used with out stops of lower pitches. It is typically added to Diapason or Flute ensembles after the Mixture IV.
Carillon	Suggests the sounding of small bells.

PEDAL

Sub Bass 16'	Principal stopped Bass of the organ.
Oktav 8'	Foundation stop of Diapason tone quality.

ARTISTIC REGISTRATION

Organ registrations fall into two broad categories: solo combinations and ensembles.

A solo combination is one in which a melody is played on one keyboard and the accompaniment played on another, while the pedal often provides a supporting bass line. Almost any stop or combination of stops will sound good as a solo voice. A contrasting tone quality should be chosen for the accompaniment, so that the accompaniment is softer than the solo voice. The Pedal stops must provide a foundation for the sound without covering it.

Most 8' reed stops make interesting solo voices. The addition of a 4' flute or a flute mutation (e.g., Nasat or Terz) to a reed, such as the Trompette, colors the sound further and increases its volume slightly. Adding an 8' flute to a reed will add body to the sound.

Flutes can be used alone or in combinations as solo voices. One special combination of flutes that creates an appealing and historically significant solo combination is the Cornet (pronounced kor-NAY). The Cornet is created by using the following Swell stops: Gedackt 8', Koppelflöte 4', Nasat 2-2/3', Blockflöte 2', and Terz 1-3/5'. This solo combination was used widely in Baroque organ music, but it is just as appropriate for some modern music. Useful variations of the Cornet may be achieved by eliminating the 4', the 2', or both.

When choosing stops for a solo voice, it is not always necessary to include an 8' stop; for example, since the 4' flute has a tone quality different from that of the 8' flute, the 4' flute can be used as an independent solo voice. By playing the solo an octave lower than written, the notes will sound at the correct pitch. In similar fashion, a 16' stop can be selected and the notes played an octave higher than written. Tonal variety will be gained, because each stop has its own tone color.

For accompaniment, the most desirable voices are the 8' flutes or strings on each manual. Celestes often make effective accompaniments. The correct choice depends on the volume of the solo tone (a soft solo voice requires the softest accompanimental stop), the element of contrast, and the location of the solo stop. A bright, harmonically rich solo reed, for example, can be accompanied by either a string or flute, but the flute will often contribute greater interest because of its greater contrast.

Try to seek a "natural" balance of volume between solo and accompaniment. This will be especially easy to accomplish since the solo and accompaniment voices are expressed by separate expression shoes.

SUGGESTED SOLO REGISTRATIONS

CHIMES SOLO

Swell: Gedackt 8', Viola 8', Viola Celeste 8'
Great: Chimes
Pedal: Lieblichgedackt 16', Swell to Pedal
Play solo on Great.

SWELL SOLO COMBINATION

Swell: Gedackt 8', Koppelflöte 4', Nasat 2-2/3', Blockflöte 2', Terz 1-3/5'
Great: Rohrflöte 8', Spitzflöte 4'
Pedal: Lieblichgedackt 16', Gedacktflöte 8'
Play solo on Swell.

FLUTE SOLO

Swell: Viola 8', Viola Celeste 8'
Great: Rohrflöte 8'
Pedal: Lieblichgedackt 16', Swell to Pedal
Play solo on Great.

TRUMPET SOLO

Swell: Trompette 8'
Great: Diapason 8', Octave 4', Superoctave 2', Mixture IV
Pedal: Bourdon 16', Octave 8', Choralbass 4'
Play solo on Swell.

These few combinations demonstrate basic techniques of solo registration. In creating registrations of your own, remember these three simple rules:

1. Seek tonal contrast between solo and accompaniment.
2. Be sure the solo is louder than the accompaniment.
3. Choose a solo whose character is appropriate to the specific piece.

ENSEMBLE REGISTRATIONS

Ensemble registrations involve groups of stops that are played together, usually, but not always, with both hands on one keyboard. They are characterized by compatibility of tone, clarity, and occasionally power. Such registrations are used in hymn singing, choir accompaniments, and much of the contrapuntal organ literature.

Volumes have been written on the subject of ensemble registration. Following is a summary of the major points.

Ensembles are created by combining stops. Always consider two factors, tone quality and pitch. Ensembles begin with a few stops at the 8' and/or 4' pitch and expand "outward" in pitch as they are built up. New pitches are usually added in preference to another 8' stop.

Ensembles are generally divided into three tonal groupings or "choruses":

The Principal Chorus is the most fully developed with representation in various divisions of the organ and at every pitch from 16' (Diapason) to high mixtures. The Principal Chorus is sometimes called the narrow-scale flue chorus, a reference to the relative thinness of Principal pipes in relation to their length.

The Flute Chorus is also well represented with a diversity of stops at various pitches. Generally speaking, the Flute Chorus is composed of less harmonically developed tones, and is smoother and of lesser volume than the Principal chorus. The Flute Chorus is sometimes called the "wide-scale flue chorus", owing to the generally "fatter" look of flute pipes as compared to principals.

The Reed Chorus includes those reed tones designed to be used in the ensemble buildup. Not all reed voices are ensemble tones. An Hautbois, for example, is usually a solo stop. The various Trumpets, Clairons, Bassons, etc., are usually ensemble voices that add brilliance, power, and incisiveness to the sound. If you have questions as to whether a specific reed is a solo or ensemble stop, refer to the stoplist in the preceding section.

The Swell Reed Chorus of Basson 16' and Trompette 8' represents an entity important to French organ music and the full ensemble of the organ. These stops create a "blaze" of richly harmonic sounds that top off both flue choruses.

Another special ensemble combination important in French music is the Cornet, which was discussed in the section on Solo Registration. This combination can be used with the chorus reeds and mutations to create the "Grand Jeu." The Cornet is also useful in Romantic ensembles to add weight and thickness to the sound.

Here are typical ensemble combinations for the Swell and Great manuals:

Great

1. Rohrflöte 8', Spitzflöte 4'
2. Rohrflöte 8', Spitzflöte 4', Superoctave 2'
3. Diapason 8', Octave 4'
4. Diapason 8', Octave 4', Superoctave 2'

Great Continued

5. Diapason 8', Octave 4', Superoctave 2', Mixture IV
6. Diapason 8', Rohrflöte 8', Octave 4', Spitzflöte 4', Superoctave 2', Mixture IV

Swell

1. Gedackt 8', Viola 8'
2. Gedackt 8', Viola 8' Koppelflöte 4'
3. Gedackt 8', Viola 8' Koppelflöte 4', Blockflöte 2'
4. Gedackt 8', Viola 8' Spitzprinzipal 4', Koppelflöte 4', Blockflöte 2'
5. Gedackt 8', Viola 8' Spitzprinzipal 4', Koppelflöte 4', Blockflöte 2', Fourniture IV
6. Gedackt 8', Viola 8' Spitzprinzipal 4', Koppelflöte 4', Blockflöte 2', Fourniture IV, Trompette 8'

The use of the Swell to Great coupler allows these separate ensembles to be combined on the Great manual. For example, the **#5** Great and **#3** Swell registrations coupled together and played on the Great form a nice round hymn combination.

The Pedal ensemble is created in much the same way as the manual ensembles, starting at 16' pitch instead of 8'. Be careful that the volume of the pedals is not greater than that of the manuals. Although the manual to pedal couplers are useful in bringing clarity to the pedal line, especially on softer registrations, avoid the temptation to rely constantly on one or two 16' stops and a coupler. Please note that the softest stops and flute mutations are normally not used with ensembles.

FULL ORGAN

Due to the immense capabilities of the Allen Digital Computer Organ, every stop and coupler on the instrument could be used simultaneously without distortion, if the organ is regulated properly. Striving for good registration however, the organist would not haphazardly select every stop on the instrument. For best results, listen and include only those stops that really contribute to the fullness and brilliance of the ensemble. Eliminate soft stops and solo stops that make no purposeful contribution.

This short treatment barely scratches the surface of the fascinating subject of organ registration. For those interested in gaining further insight into this vital area of organ playing, we recommend the following texts:

Audsley, George Ashdown. *Organ Stops and their Artistic Registration*.

Hialeah, FL: C.P.P. Belwin, 1985.

Irwin, Stevens. *Dictionary of Pipe Organ Stops*. 2nd ed.

New York: Macmillan Books, 1983.

TRANSPOSER

Vast computer capability makes it possible to perform the sometimes difficult task of transposing, while allowing the organist to play in the notated key. Operation of the Transposer is controlled by the Transposer knob, found inside the Console Controller™ drawer on the left side underneath the Great manual. Neutral position (no transposition) for the knob is marked “●.” To shift the music to a higher key, move the knob counter-clockwise. The key can be raised a maximum of five half-steps. To shift to a lower key, move the Transposer knob clockwise from “●.” The key can be lowered a total of seven half-steps. A RED INDICATOR LIGHT COMES ON WHENEVER THE TRANSPOSER KNOB IS MOVED FROM THE “●” POSITION.

WHY TRANSPOSE?

1. Because the range of a song will not always suit the vocal range of a particular singer. By adjusting the transposer, the piece can be sung more comfortably and effectively.
2. Because some instruments are non-concert pitch. A trumpet in B^b, for example, can play the same music as the organist, if the Transposer knob is set two half-steps lower.
3. Because hymn singing can sometimes be improved by a more favorable key selection. Hymn singing can also be enhanced by playing the hymn in its original key, and then playing a short modulation at the end of the stanza that leads into the key one-half step above the key in which the hymn is written. If the hymn is already in a fairly high key, it may be preferable to play the first few stanzas with the Transposer set *down* one-half or one whole step, then modulate up to the original key for the final stanza.

SETTING PISTONS

Allen’s memory capture system, accessed by using the Console Controller™, allows the organist to set four complete groups of General and Divisional Piston registrations. Four organists may each set their own registrations on a separate memory. To select the capture memory you want to use, refer to the Console Controller Guide, a separate operators manual for the organ. (The capture action is not fully operable until approximately six seconds after the organ is turned on.)

For example, choose a stop registration you wish to place on General Piston 1. You may select any combination of stops. General pistons are located on the left side of the Piston Rail (Piston Slip) under the Swell Manual and are numbered 1 through 5. Remember, General pistons are customarily set from soft to loud using graduated registrations. After you have selected the stops, press and hold the SET piston, while holding SET press and release General piston 1. Finally, release the SET piston. General piston 1 will “remember” the combination of stops you assigned to it and bring on that registration each time General Piston 1 of the same memory is pressed. You can change the registration assigned to any General piston at any time by repeating the above procedure.

PROGRAMMABLE CONSOLE FUNCTIONS

The MDS-8 is equipped with a Console Controller™ system that provides useful extra functions. It is not necessary for the organist to use all of the Console Controller's available features to play the instrument. The organ is capable of all traditional organ functions without the use of the Console Controller™ system. This control system provides additional flexibility for those organists whose requirements and desires go beyond the capabilities of the traditional organ console. There is a separate Console Controller™ and MIDI guide that covers the operational details of this feature.

MIDI GUIDE

I. MIDI FOR ORGANISTS

A. WHAT IS MIDI?

The term MIDI is an acronym for Musical Instrument Digital Interface. MIDI has been adopted by the music industry as a standard means of communication between digital musical devices. This enables devices of different types and manufacturers to communicate with ease. MIDI by itself will not make a sound. It is not necessary to understand all of the technical aspects of MIDI in order to take advantage of the benefits it offers. It is important to explore the potential MIDI holds for musicians, as well as the various MIDI applications available today.

B. TYPES OF MIDI DEVICES

MIDI devices fall into two categories. The first category consists of musical instruments such as organs and synthesizers, which transmit and receive MIDI data. The second category includes controllers and processors, that, as their name implies, can transmit, receive, or manipulate MIDI data but do not necessarily produce sound themselves. Sequencers, which are MIDI recording devices, fall into this category. Although the technical nature of their recording and editing processes differs from those of a tape recorder, many operate in similar fashion. Most are equipped with record, playback, fast forward and reverse controls, that function in the same way as their tape recorder counterparts.

C. TYPES OF MIDI DATA

There are several types of MIDI messages that can be sent from one device to another. The most common is keying information, allowing one device to sense which keys have been played on another device. This means an organ equipped with MIDI can send information to other MIDI devices, e.g., synthesizers or sequencers, and can play those devices simultaneously or record information to be played back later.

Allen organs incorporate a complete MIDI system allowing the transmission and reception of all types of MIDI information (velocity keying, volume change, sustain, registrations, Crescendo settings, and more). It is even possible to control several devices from one manual simultaneously, or control a different device from each manual of the console.

D. MIDI AS A PRACTICE TOOL

For the organist/choir director, the MIDI organ console and sequencer are valuable rehearsal tools for both choral and organ works. Anthem accompaniments may be recorded in advance and played back by the sequencer during choir rehearsal. The director, freed from the role of accompanist, can focus entirely on directing the choir. The sequencer may even play the music back at a slower tempo without affecting pitch, or at a lower pitch without affecting tempo, features that are useful in rehearsing difficult choral passages. If a particular sequencer allows multi-tracking, each vocal section's part may be recorded on a different track, and then played back individually, or in any combination, for increased flexibility.

Multi-tracking can also be used in teaching and learning new organ works. The teacher may record each hand or pedal part on a different track, allowing the student to "mute", or turn off, any part being practiced while still being able to hear the sequencer play the rest of the

composition. The student's ability to hear the piece in its entirety and to become aware of, from the earliest stage of learning a composition, the interrelationship of its voices, is especially valuable in learning contrapuntal works.

E. MIDI AS A REGISTRATION TOOL

In some churches and auditoriums it is difficult to judge the effectiveness of a registration from the organ console. Due to the acoustics of the room, or positioning of the console, the sound of the instrument may be different when listened to from the congregation's or audience's vantage point. MIDI allows the organist to check registrations by recording his playing and registration to a sequencer and then listening from different locations in the room during the music's playback.

F. OTHER USES FOR MIDI

MIDI has opened new possibilities to the organist. The MIDI organ console's ability to control external keyboards or sound modules puts an ever increasing array of non-traditional sounds at the organist's fingertips, with a degree of control only possible through the flexibility of an organ console. The ability to record MIDI data with the use of a sequencer opens a variety of new possibilities, both in practice and performance situations. Computer programs are even available that allow musicians to play MIDI devices connected to a computer and have their performance printed out as conventional five line musical notation. Because MIDI is an industry-wide standard, today's MIDI instruments will be compatible with tomorrow's MIDI innovations.

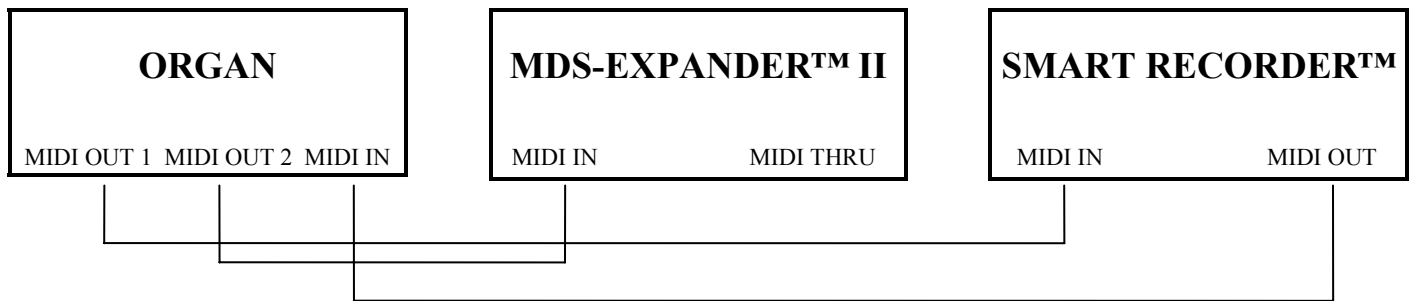
II. CONNECTING THE ALLEN ORGAN TO OTHER MIDI DEVICES

The MIDI-capable Allen Organ consoles may be connected to a variety of MIDI devices. A diagram for connecting the Allen organ to a variety of MIDI devices can be found at the end of this section of the manual. Although the diagram is not meant to be an exhaustive list of possibilities, they illustrate the most commonly used combinations of MIDI devices. If more specific information is required, please consult the owner's manuals of the external devices being connected to the Allen Organ.

III. SmartMIDI™

Your Allen MDS organ features SmartMIDI™, an expanded MIDI system with increased flexibility. Allen's SmartMIDI™ provides a comprehensive interface between MIDI sound modules such as the Allen MDS-Expander™, and digital sequencers such as the Allen Smart Recorder™. Two MIDI OUT ports, one switched and one unswitched, allow unprecedented control over external MIDI devices attached to the organ.

Under normal circumstances, MIDI sound modules should be connected to the switched MIDI port labeled MIDI OUT 2. Doing so allows the organist to disable the sending of MIDI data from the organ to the sound module. Devices such as MIDI sequencers should be connected to the unswitched MIDI port labeled MIDI OUT 1, eliminating the necessity of having to draw the MIDI stop controls before recording a digital sequence. The drawing below illustrates the proper procedure for connecting the Allen MDS-Expander™ II and Allen Smart Recorder™ to an Allen MDS organ equipped with SmartMIDI™.



IV. MIDI Transmission Channels

MIDI information may be broadcast on several different channels simultaneously. This allows many channels of information to be sent through one cable and used independently of one another, similar to the way many television broadcasts can be sent through one cable. In order to receive the intended information, a MIDI device must be tuned to the same channel as the device which is sending the information. Your Allen organ transmits MIDI information on several channels. When external MIDI devices are connected to the organ, it is important to make sure that the devices' channels of transmission and reception match the MIDI channels of the Allen organ divisions to which they are assigned.

The MDS-8 transmits MIDI on the following channels:

- Swell = Channel 1
- Great = Channel 2
- Pedal = Channel 3

MIDI Program Change Messages are transmitted from the organ's General Pistons on MIDI Channel 8. These program change messages can be used to change the settings of MIDI sound modules or synthesizers which are connected to the organ. Please consult the Console Controller™ guide and the owner's manual of your MIDI device(s) for more information on how MIDI Program Change Messages are handled by each particular device.

In addition to note information, MIDI Volume Messages are sent on MIDI channels 1, 2, and 3 by the organ's expression shoes. In this manner, the volume level of connected MIDI devices may be controlled. Please consult the owner's manual of your MIDI device(s) for more information on how MIDI Volume information is handled by each device.

If any external MIDI device is used to transmit information to the Allen organ, the same assignment of MIDI channels must be used as outlined above.

INSTALLATION, VOICING, CARE OF THE ORGAN, and BATTERY BACKUP

INSTALLATION

Wherever your MDS organ may be situated, careful installation is a prerequisite to achieving successful results. Your Allen representative is well qualified to guide you in planning for this. Factory assistance in planning the installation is also available and may, in fact, be sought by your Allen Organ representative. Once the organ is installed, be mindful of changes made to the room the organ is located in. Care must be taken to insure that when acoustical changes occur, your Allen representative is notified.

VOICING

The MDS organ presents unprecedented accuracy in the scaling and voicing of each note of every stop. This musical breakthrough is an inherent part of the engineering design of the instrument. Final adjustments in scaling and voicing involve controls within the console and are best left to an expert. These adjustments are normally a part of installation and, once done, should not require changes, unless the instrument is moved to a new location or major changes are made to the room the organ resides in.

Bass frequency projection is strongly affected by tone cabinet location. Although none of the tone cabinets should be moved once the installation has been completed, extra care should be exercised to prevent inadvertent movement of the bass tone cabinets.

When chambers have been utilized to house external speakers, make sure they are not later used for storage closets. Placing sound absorbent materials (robes, flowers, papers, etc.) will only damage the organs sound quality.

REVERBERATION

The Digital Reverberation System provides the spatial ambiance of various sizes of reverberant rooms. Although most effective in poor (non-reverberant) acoustic environments, it even enhances the tones in optimal acoustic settings. The Digital Reverb is on whenever the rocker switch in the Console Controller™ drawer is in the ON position. Adjustments to the Digital Reverberation System must be made by your Allen sales representative or service technician.

CARE OF THE ORGAN

Your Allen Digital Organ constitutes a major advance in long-term maintenance-free operation. There are no regular maintenance procedures required and, therefore, no periodic maintenance schedules to be observed.

Reasonable care will keep the instrument looking beautiful for years to come. The wood surfaces may be cleaned using a soft cloth dampened with lukewarm water. A mild solution of lukewarm water and furniture soap may be used to remove fingerprints, etc. Polish dry with a soft cloth.

Do not use wax, sprays or oils on the finish. Satin finished surfaces will take on a semi-gloss appearance when waxed and will eventually become yellowed. If you need to “polish” the organ for a special event, use only a very high quality wood furniture polish.

Keys and stops should be cleaned using two clean cloths. Immerse one in clear, lukewarm water and wring it thoroughly damp dry. Loosen the dirt with this cloth, then polish with the dry cloth. Do not use soap or detergent on the keys or stops.

To polish the clear music rack, a furniture wax polish can be sprayed on a dry cloth and rubbed on the front of the music rack. Try to keep the wax off of the wood finishes. This will keep the music rack most clear.

Your Allen Organ not only faithfully reproduces the organ traditions of the past but also anticipates the innovations of the future. Should you have questions that are not addressed in this manual, please do not hesitate to contact your local Allen Organ representative. Welcome to the family of satisfied Allen Organ owners!

BATTERY BACKUP SYSTEM

The memory for the capture system on your MDS organ is sustained by a Lithium battery. This allows capture settings and related items to be retained in memory when the organ is switched off or unplugged. Under normal circumstances, the Lithium battery should last for several years. A built-in warning system will alert you when the battery becomes weak and needs to be replaced. Have the Console Controller™ drawer open before the organ is turned on. If there is a problem the window will display:

WARNING !!
Replace Battery

for about six seconds after the organ is switched on. Should the battery in your MDS organ require replacement, contact your local Allen authorized service representative.

USA ONLY
CAUTION

Do not plug the instrument into any current source other than 105-128 volts, 50/60 Hertz alternating current (AC). A verified grounded outlet is essential to proper operation and protection of the instrument. Proper polarity should be checked with an AC circuit analyzer before connecting the organ.

Do not change the cable plug or remove the ground pin or connect with a two-pole adapter.

If you are in doubt about your electrical connection, consult your local electrician or power company.

In churches where circuit breakers are turned off between worship services, the circuit breaker affecting the organ console AC power should have a guard installed to prevent its being accidentally switched off.

Read and comply with all instructions and labels that may be attached to the instrument.

Warning: This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause interference to radio communications. It has been type tested and found to comply with the limits for a Class B Computing Device in accordance with the specifications in Subpart J of Part 15 of FCC Rules, which are designed to provide reasonable protection against such interference in a residential installation. Should this equipment cause interference to radio communications, the user at his own expense will be required to take whatever measures may be necessary to correct the interference. Whether this equipment actually causes the interference to radio communications can be determined by turning the equipment off and on. The user is encouraged to attempt to correct the interference by one or more of the following measures:

Reorient the receiving antenna.

Relocate the organ with respect to the receiver.

Move the organ away from the receiver.

Plug the organ into a different electrical outlet, so that the organ and receiver are on different branch circuits.

If necessary, the user should consult the dealer or an experienced radio technician for additional suggestions.