

Owner's Guide

SCARBOROUGH 110

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The design of the Rodgers Scarborough 110 is a skillful blend of space-age technology with the finest traditions of the centuries-old art of organ building. From a compact and reliable solid-state console emanates a full ensemble of voices suited to the interpretation of traditional organ literature from all periods as well as service music of the contemporary devotional service.

Incorporated in the organ's design are the elements necessary for practice and teaching, making the Scarborough 110 an ideal instrument for school or studio.

The purpose of this owner's manual is to explain the musical resources available on the Scarborough 110 and to give some registration suggestions that suit the printed registrations of an organ score.

The unique sound of the organ is created by four basic families of organ tone, sounding at many pitch levels in various combinations. These combinations produce a phenomenon known as ensemble. To accomplish the art of creating a fine organ ensemble, there must be many pitch and tone sources interacting upon one another. Good ensemble demands that all voices add their particular tonal characteristics to form a cohesive sound. This is accomplished in such a manner that no one voice projects itself obtrusively upon the other voices, which would completely destroy the objective in mind.

There are traditional concepts governing the relationships between and within the various families of tone. These are used by the Rodgers Organ Company as guidelines for determining the tonal finishing of all our organs.

THE CONSOLE

As the art of organ building has evolved over the centuries, certain features of the instrument have become more or less standard as organists, by a process of elimination, gradually culled out "innovations" that served no practical function and merely got in the way.

The modern organ console is a miracle of convenience and practicality, due to the process of evolution that produced it. The combination of two 61-note beveled and tilted keyboards and the 32-note concave and radiating pedalboard gives the organist the necessary flexibility to perform organ music as written, without compromise. In addition, the various tone colors are conveniently available, distributed into divisions according to their traditional functions in the organ.

Incidentally, all Rodgers Church Organs adhere rigidly to the specifications for console standardization as specified by the American Guild of Organists.

GREAT MANUAL - lower keyboard

The Great division is constituted of the best development of the Principals on the entire organ. Supplemented by Flutes at 8', 4', and 2' this division is the tonal backbone of the organ, essential to properly lead congregational singing. Included in the Great division are supporting stops at 8'; an 8' Gemshorn and 8' Flute Celeste II are primarily used for softer accompaniments. The percussions (Harp and Carillon) are also located in the Great.

SWELL MANUAL - upper keyboard

The Swell division on the Scarborough 110 is unusually complete providing the Principals at 8' and 4' and a two rank mixture to complement the entire Swell division. The Flutes range from 16' (tenor C) through 2' with two mutations. A string and separate two rank string celeste stop provide the lush Romantic color. There are two reed stops to provide both the chorus and solo reed sound. The entire Swell division complements the Great division adding to the total ensemble when coupled to the Great creating a rich and vibrant sound.

PEDAL CLAVIER

The Pedal division provides a complimentary base on which the entire tonal mass of the organ rests. It contains a wide dynamic range of stops at the traditional pitch levels. Foundation stops begin at 16' ascending to the 2' Flute and crowned with a two-rank mixture for maximum clarity of the pedal line. The Pedal 16' Fagotto provides a powerful and colorful reed that rounds out the entire division.

CHOIR ORGAN

Organ music very often has registrations calling for a third manual, the Choir manual. This division derives its name from its traditional function of accompanying the church choir. For this purpose, the Choir division contains light Principals and Flutes to provide a light fabric of well organized sound against which voices may be placed. The light Flutes provide the articulate sounds associated with the Positiv division of the Baroque organ.

In many two manual organs the stops of this division are neglected. On the Scarborough 110, however, the characteristic sounds of the Choir division are distributed among the Swell and Great divisions placed for maximum flexibility for the needed contrasts that the Choir division provides.

The mutations on the Swell make ideal colorings to the 8' Rohr Flute (Swell), giving the proper foil against the Principals of the Great for Baroque ensembles. The 8' Flute Celeste II (Great) provides the flavor of a Choir celeste stop. The Harp used with the 8' Flute Celeste II (Great) gives an accompaniment called for in much of the late American Romantic literature.

There is much emphasis placed on the word "contrapuntal" and for very good reason. The organ, piano, harpsichord, and other keyboard instruments are the only instruments where more than one note can be played, and sustained, at one time. For this reason the most popular type of composition used for the organ involves several melodic lines occurring simultaneously. The standards of this type of composition demanded that the lines must complement each other harmonically as well as melodically. Since the melodic lines moved against each other, this style of composition derived the name "counterpoint", and the motion was called contrapuntal.

On any instrument other than the keyboard instruments, it requires more than one performer to perform this style of music. With this advantage that the keyboard performer has, it is no wonder that the greatest amount of compositions were written for the keyboard instruments.

THE MUSICAL RESOURCES OF THE SCARBOROUGH 110

PRINCIPAL STOPS

The term "Principal" is a "new term" for Diapason which, incidentally, has been used for centuries as a label for this quality of organ tone. This tone is, in fact, the principal sound that identifies an organ from other musical instruments. Since the Principal has no orchestral counterpart, it is unique to the organ. The Principal sound is the natural sound that is produced by open metal flue pipes in a pipe organ. Principals have a fundamental tone which provides a foundation for the entire ensemble, yet possess sufficient harmonics to give character and life to their sound. The necessity and usefulness of the Principal Stops is evident when we examine the stoplist of the Scarborough 110.

The Principals are the most characteristic sound of the Great division, therefore are best developed in this division. The 8' Principal, 4' Octave, 2-2/3' Twelfth, 2' Fifteenth, and Mixture II comprise the Principal Chorus on the Great division. The Swell division Principals are subordinate to the Great, thus being less prominent in sound and found only at 8' and 4' topped with their own two-rank mixture voiced to blend with the entire Swell division.

The Pedal Principals provide the foundation to support the manual tonal mass as well as providing independent clarity and definition to carry an independent and important line in contrapuntal music. Therefore, the Pedal division has the Principals at 16', 8', 4', and a two-rank mixture voiced to ensemble with the entire Pedal division.

FLUTE STOPS

The Flute stops of the organ are characterized by limited harmonic development and, as such, are good foundation builders. The Flutes are imitative of the orchestral flute in the higher ranges and in the lower range provide a deep, solid bass.

The Flutes on the Scarborough 110 have a definite "stopped" quality of sound. This is a very hollow sound enabling the Flutes to combine with other stops on the organ without creating a thick, muddy sound. The Flutes in the Great division support the Principal Chorus as well as complementing each other for a softer combination than the bold Principals. The 8' Bourdon, 4' Flute, and 2' Piccolo comprise the Great Flute Chorus. The 8' Flute Celeste II is softer than the 8' Bourdon, activating two sound sources, one tuned slightly sharper than the other, which creates a warm, undulating sound useful for accompaniment work.

The Swell Flutes supplement the Swell Principals at 8' and 4', with the 16' Lieblich Gedeckt for added reinforcement to the manual texture and a 2' Piccolo for brightness. Two mutations, a 2-2/3' Nazard and 1-3/5' Tierce are useful for light Baroque combinations and provide the imaginative organist with additional color to solo combinations when used in good taste.

The Pedal Flutes give a soft to medium loud foundation ascending from 16' to 2' providing clarity to the pedal line.

THE STRING FAMILY

The warm and delicate sound of organ strings has provided a sound specified by many organ composers to be used in a particular portion of their compositions to bring out the maximum beauty of that section. Strings, as they are known in the organ, trace their best merits of design to the French Romantic school of organ building. The String is a close relative to the Principal, containing more harmonic development and less fundamental than the Principal, resulting in a soft, lush, delicate sound.

The Swell division contains two strings, the 8' Salicional and the 8' Voix Celeste II. The Salicional is useful as an accompanying voice and an ensemble stop when used with the Flutes. The Voix Celeste II is constructed of two string voices, one tuned slightly sharper than the unison pitch, creating an undulation (slow beating) sound. (The sound was said to resemble heavenly voices -- hence it received the name Voix Céleste.) The Celeste is the frosting on the cake, and is best suited for soft passages or wherever called for. The Celeste is not recommended for full combinations because of the pitch difference.

The Gemshorn is placed tonally between the Principals and the Strings, thus classifying it as a Hybrid Stop. It has more fundamental than the Strings, resulting in a fine voice for building soft foundation combinations. It is located at 8' in the Great division and in the Pedal division.

In the pipe organ, all of the above tone qualities (Principals, Flutes, and Strings) are derived from a pipe sound, caused by a vibrating column of air set in motion by the action of wind impinging on a knife-like edge at the upper part of the pipe mouth (a common toy whistle operates this way). These pipes and their resulting sounds are classed collectively under the name of Flue Stops.

THE REED STOPS

Pipe organ Reed Stops make use of the vibrations of a brass reed tongue against a slotted brass tube, called a shallot. The resulting impulses of wind are qualified in pitch and given tonal shape by a resonator (of varying size and shape) placed above the reed assembly.

Reeds are of two basic types: Solo and Chorus Reeds. Solo reeds are best used in a single melodic line, and are generally of an imitative orchestral nature. Chorus reeds blend in with the Foundation Chorus, completing the total full ensemble.

The 8' Trompette in the Swell division and the 16' Fagotto in the Pedal division are the chorus reeds of the Scarborough 110. They add the fire to the total ensemble that the brass section adds to the orchestra.

The Swell 8' Trompette is most useful as a solo stop for processions.

The 8' Oboe is a solo stop of a definite orchestral nature, voiced softer than the Trompette for use in delicate passages.

The Pedal 16' Fagotto is used for the Full Pedal, adding the necessary power to complement the Full Organ of the Swell and Great divisions.

MIXTURES

Mixtures are composed of sets of fractional pitches, and are used to clarify and extend the upper harmonic structure of the organ ensemble. They are used principally in fuller registrations to put a brilliant and pitch-defining top on the mass of lower pitched sound.

The Scarborough 110 has three mixtures, each consisting of two ranks voiced to complement their specific division. Each mixture has its own separate level control, allowing adjustments to be made according to the requirements of the room in which the organ is placed.

MUTATIONS

Mutations are non-unison pitched stops whose purpose is to add color to solo combinations. These stops are the salt and pepper of registration and should be freely experimented with and used to their best advantage.

The 2-2/3' Twelfth (GREAT) is a Principal stop pitched one octave and a major fifth above the unison (8') pitch, where it accentuates that particular harmonic of the 8' tone. It is normally used with the Principals at 8', 4', and 2'.

The 2-2/3' Nazard (SWELL) is the same pitch as the Twelfth, but is a Flute voice. When added to the 8' Rohr Flute (SWELL) the hollow quality of the "stopped flute" becomes more apparent because of the reinforcement of that particular harmonic of the 8' pitch.

The 1-3/5' Tierce is a Flute pitched two octaves and a major third above the unison (8'). It should be used very sparingly for maximum effect.

TREMULANTS

There are three tremulant controls on the Scarborough 110. The MAIN TREMULANT places a light tremulant on the entire organ. This is adjustable both as to speed and depth. The two other controls affect the Leslie unit.

When the DIAPASON/FLUTE CHORUS tab is placed "on", the Diapason (Principal) channel is mixed with the Flute channel. The Flute channel is then affected by the Leslie which is then rotating at the slow speed.

When the Flute TREMULANT FULL is placed "on", the tremulant turns on to fast speed. The Diapason (Principal) channel is dropped from the Flutes and the Flutes are raised in level to give the proper effect and balance sought when the Leslie fast tremulant is on.

CHIFF

The "Chiff" tab affects only the manual Flutes and Pedal Flutes 8' and above. The Chiff is the characteristic attack that a flue pipe has when the air strikes the lip. This percussiveness gives much definition to the pitches and enhances the tonal flexibility of the organ.

SPEAKING STOPS ON THE SCARBOROUGH 110

TONE FAMILY

	<u>GREAT MANUAL</u>	<u>SWELL MANUAL</u>	<u>PEDAL CLAVIER</u>
PRINCIPALS	8' Principal 4' Octave 2' Fifteenth	8' Giegen Principal 4' Octave	16' Principal 8' Octave 4' Choralbass
FLUTES	8' Bourdon 4' Flute 2' Piccolo	16' Lieblich Gedeckt (Tenor C) 8' Rohr Flute 4' Flute 2' Piccolo	16' Bourdon 16' Lieblich Gedeckt 8' Flute 4' Flute 2' Flute
STRINGS	8' Gemshorn	8' Salicional	8' Gemshorn
REEDS		8' Trompette Oboe	16' Fagotto
MIXTURES	Mixture II	Mixture I I	Mixture I I
CELESTES	8' Flute Celeste II	8' Voix Celeste II	
PERCUSSIONS	Harp Carillon		

PRESET COMBINATIONS

	SWELL	GREAT	PEDAL
Preset 1	8' Rohrflute 8' Salicional 4' Flute	8' Principal 4' Flute	16' Lieblich Gedeckt 8' Flute
Preset 2	8' Geigen Principal 8' Salicional 4' Flute 2' Piccolo	8' Bourdon 8' Gemshorn 4' Octave 2' Piccolo	16' Bourdon 8' Flute 8' Gemshorn 4' Flute
Preset 3	8' Geigen Principal 8' Salicional 4' Octave 2' Piccolo Mixture II	8' Principal 8' Bourdon 4' Octave 4' Flute 2' Fifteenth Mixture II	16' Principal 8' Octave 4' Choralbass 2' Piccolo

SOME REGISTRATION HINTS FOR THE SCARBOROUGH 110

The following guides to stop selection are for the Scarborough 110 as a basically classic instrument used in the church service. They include division-by-division suggestions for basic combinations of stop voices. These guides are also useful for interpreting the stop suggestions of published organ music. The latter is especially important because most organ music is printed with only general suggestions for registration. This is because every organ is different in some way from the organ that the composer has at his disposal. Therefore, names of some stops would be meaningless on some instruments. The way to get to know your Rodgers is to experiment freely with the sounds of the instrument, and this basic guide will help you achieve good classic registration skills.

At the end of this section will be found several full organ registrations, given as the basis for certain specific styles and periods of organ composition.

GENERAL NOTE: Unless otherwise indicated, the use of the Diapason/Flute Chorus tab is optional, but will add considerable warmth to the sound. Use of the Flute Tremulant/Fast is to be avoided on most of the registrations in this section as this gives a sound that is foreign to the nature of classic organ music. Use of the Main Tremulant is indicated wherever desirable.

GREAT DIVISION

The Great is used in general church music for hymns, major anthems and solo accompaniments. Primarily intended for ensemble or homophonic textures, the Great is played "both hands" in these functions.

PUBLISHED SUGGESTIONS

RODGERS REGISTRATION

- | | | |
|-----|-------------------------------|---|
| 1. | Flutes 8' | 8' Bourdon |
| 2. | Light Foundation 8' | 8' Principal or
8' Gemshorn
4' Flute |
| 3. | Great Strings 8' | 8' Gemshorn |
| 4. | Broad Foundations 8' | 8' Principal
8' Bourdon |
| 5. | Light Foundations 8' & 4' | 8' Gemshorn
8' Bourdon
4' Octave |
| 6. | Flutes 8' & 4' | 8' Bourdon
4' Flute |
| 7. | Light Foundation 8', 4', & 2' | 8' Bourdon
4' Octave
2' Fifteenth |
| 8. | Foundation 8' with Flute 4' | 8' Principal
8' Bourdon
4' Flute |
| 9. | Basic Diapason Chorus | 8' Principal
4' Octave
2-2/3' Twelfth
2' Fifteenth |
| 10. | Full Foundation 8', 4', & 2' | 8' Principal
8' Bourdon
4' Octave
4' Flute
2-2/3' Twelfth
2' Fifteenth
2' Piccolo |
| 11. | Full Great to Mixtures | Add Mixture II to the above |

SWELL DIVISION

Some of the suggestions below are given for use as ensemble choruses, and a few useful solo combinations are also included.

<u>PUBLISHED SUGGESTION</u>	<u>RODGERS REGISTRATION</u>
1. Strings	8' Salicional
2. String Celeste	8' Voix Celeste II
3. Flute 8'	8' Rohr Flute
4. Flutes 8' & 4'	8' Rohr Flute 4' Flute
5. Foundations 8'	8' Geigen Principal 8' Rohr Flute
6. Foundations 8' & 4'	8' Geigen Principal 8' Rohr Flute 4' Octave 4' Flute
7. Swell Foundation Chorus	8' Geigen Principal 8' Rohr Flute 4' Octave 4' Flute 2' Piccolo
8. Full Swell	Above + 8' Trompette
9. Full Swell to Mixtures	Add Mixture II to above
10. Solo Reed M F	8' Oboe
11. Cornet (Classic solo stop)	8' Rohr Flute 4' Flute 2-2/3' Nazard 2' Piccolo 1-3/5' Tierce

PEDAL DIVISION

The term "Appropriate Pedal" often appears on suggested registrations. The suggestion seems obvious at first, but Pedal stop selection is as much of an art as manual selection. In most organ playing, the Pedal is simply used to provide the foundation (Bass) for manual work. The use of 16' voices provides the subharmonies necessary to under-gird the manual tonal structure.

Often, however, the Pedal is called upon to furnish an independent melodic line, as in much of the contrapuntal works of the Baroque period (Bach and others). The Pedal 8' and 4' Stops provide the necessary upperwork for these melodic purposes.

PUBLISHED SUGGESTION

RODGERS REGISTRATION

1.	Light 16' Pedal	16' Lieblich Gedeckt
2.	Soft 16' and 8'	16' Lieblich Gedeckt 8' Flute
3.	Foundations 16' and 8' P	16' Bourdon 8' Octave
4.	Foundations 16' and 8' F	16' Bourdon 8' Octave 8' Flute
5.	Foundations 16', 8', and 4'	16' Principal 16' Bourdon 8' Octave 8' Flute 4' Choralbass
6.	Full Pedal	16' Principal 16' Bourdon 8' Octave 8' Flute 4' Choralbass 2' Flute (optional) 16' Fagotto Mixture II

CHOIR REGISTRATIONS

When registrations for Choir Organ are encountered, the following suggestions may be helpful. The first is for the Choir in an accompaniment function ; the second for Baroque or Positiv registrations.

Choir Accompaniment (use with Diapason/Flute Chorus Tab depressed)

PUBLISHED SUGGESTION

RODGERS REGISTRATION

- | | |
|---------------------------------|---|
| 1. Choir Strings | Great - 8' Gemshorn |
| 2. Unda Maris 8' | Great - 8' Flute Celeste II |
| 3. Choir Strings and Flutes | Great - 8' Gemshorn
4' Flute |
| 4. Choir Accompanimental chorus | Great - 8' Bourdon
8' Gemshorn
4' Flute |

Choir Positiv

The following suggestions are for Baroque registrations. These combinations are best used in contrapuntal, as opposed to chordal, music.

PUBLISHED SUGGESTIONS

RODGERS REGISTRATION

- | | |
|--|---|
| 1. Positiv Flutes 8' | Great - 8' Bourdon
Swell - 8' Gedeckt |
| 2. Combinations of Flutes
without Mutations | Great - 8' Bourdon, 4' Flute
Swell - 8' Gedeckt, 4' Flute
8' Gedeckt, 2' Piccolo
8' Gedeckt, 4' Flute,
2' Piccolo |

Choir Positiv, continued

3. Combination of Flutes
with Mutations

Swell - 8' Gedeckt, 2-2/3' Nazard
8' Gedeckt, 2-2/3' Nazard,
2' Piccolo
8' Gedeckt, 4' Flute,
2-2/3' Nazard
8' Gedeckt, 4' Flute, 2' Piccolo
2-2/3' Nazard
8' Gedeckt, 1-3/5' Tierce
8' Gedeckt, 4' Flute,
1-3/5' Tierce
8' Gedeckt, 2-2/3' Nazard,
1-3/5' Tierce

Note: The Principals of the Great and Swell, especially at higher pitch levels, add brilliance to the above registrations. The combinations are many and varied.

FULL ORGAN REGISTRATIONS

The following are suggested full organ registrations for the Scarborough 110, reflecting specific musical styles.

Baroque Ensembles

1. Soft

Swell: 8' Rohr Flute, 4' Flute
Great: 8' Gemshorn, 2' Piccolo
Pedal: 16' Lieblich Gedeckt,
8' Flute

2. MF

Swell: 8' Gedeckt, 2' Piccolo
Great: 8' Bourdon, 4' Octave,
2-2/3' Twelfth, 2' Fifteenth
Pedal: 16' Lieblich Gedeckt,
8' Octave, 4' Choralbass

3. F

Swell: 8' Gedeckt, 4' Octave,
2-2/3' Nazard, 2' Piccolo
Great: 8' Bourdon, 4' Octave,
2' Super Octave,
Mixture II SW to GT
Pedal: 16' Bourdon, 8' Flute,
8' Octave, 4' Choralbass

Romantic Ensembles

(Use with Diapason/Flute Chorus Tab depressed)

1. Celeste ensemble

GREAT: 8' Flute Celeste II
4' Flute
Swell to Great

Play melody on Great

SWELL: 8' Voix Celeste II

PEDAL: 16' Bourdon
8' Flute

Main Tremulant optional

2. Solo Oboe with
Celestial Harp accompaniment

Swell: 8' Oboe

Great: 8' Flute Celeste II
Harp

Pedal: 16' Bourdon

HYMN REGISTRATIONS

1. MP - MF

SWELL: 8' Rohr Flute
8' Salicional
4' Flute

GREAT: 8' Bourdon
8' Gemshorn
4' Flute
Swell to Great

PEDAL: 16' Bourdon
8' Flute
Swell to Pedal

2. MF - F

SWELL: 8' Geigen Principal
8' Rohr Flute
4' Octave
4' Flute

GREAT: 8' Principal
8' Bourdon
4' Octav
4' Flute

2. (Continued)

PEDAL : 16' Principal
8' Octave
8' Flute
4' Choralbass

3. F - FF

SWELL : 8' Geigen Principal
8' Rohr Flute
4' Octave
4' Flute
2' Piccolo
Mixture II

GREAT : 8' Principal
8' Bourdon
4' Octave
4' Flute
2-2/3' Twelfth
2' Fifteenth
2' Piccolo
Swell to Great

PEDAL : 16' Principal
16' Bourdon
8' Octave
8' Flute
4' Choralbass
Swell to Pedal

The Swell in the above scheme could be played without Pedal, possibly on the next to the last verse of the hymn. During that time, the Great Mixture and the Pedal 16' Fagotto could be added for a brilliant and grand accompaniment to the last verse, which would be played back on the Great Manual with Pedal.

THE CARE AND MAINTENANCE OF THE RODGERS SCARBOROUGH 110

CARE AND MAINTENANCE

Like any fine musical instrument, the care and maintenance your Rodgers receives is part of the protection of your investment. Normally, you should experience no difficulties with the various systems of the organ. It has been carefully designed, and only the very finest of component parts have been used in its manufacture. Even the finest equipment, however, is subject to occasional malfunctions and failures. Your Rodgers Service Representative is fully equipped and qualified to handle any service problems which may arise.

Your new Rodgers is not only a fine musical instrument, it is also a fine piece of custom-made furniture, finished to hold its attractiveness through generations of use. Only the best woods are used, carefully checked for uniformity of grain and intensity of figure, and carefully hand assembled. As each finish coat is applied, it is thoroughly dried and hand rubbed before the next coat is applied. This hand rubbing results in a finish that is lasting and easy to keep looking beautiful. Here are a few tips on caring for the Rodgers.

CONSOLE AND PEDALBOARD

A frequent dusting with a soft, clean cloth is usually all that is required. A small amount of Johnson's Cream Polish on the cloth will keep the organ smudge-free and will help remove fingerprints. Waxes, oils, or silicone base polishes should not be used. Always wipe the finished surfaces with the grain, using straight, even strokes.

KEYBOARDS AND STOP TABS

Keyboards and Stop Tabs should be cleaned with a soft cloth dampened with water and a mild soap. **DO NOT USE SOLVENTS** (alcohol, gasoline, carbon tetrachloride, etc.).

Since extreme cold, heat, or exposure to sunlight may injure the finish of any piece of fine furniture, the organ console or finished speaker cabinets should not be placed over a heat register or near an open window.

ADDITIONAL DESIGN ELEMENTS OF THE SCARBOROUGH 110

CONSOLE SPECIFICATIONS

As has been previously stated, the Rodgers Scarborough 110 console adheres precisely to A. G. O. specifications. This means that the organist can move from this organ to pipe organs and other A. G. O. consoles and feel immediately at home. The order of the stops is the same, as is the placement of manuals, stop divisions, and expression pedal. Incidentally, the Pedal Clavier of a Rodgers Organ is completely removable by merely lifting on each side and pulling the Pedalboard back from the console. This makes it easy to clean under the Pedalboard--no cables, no contacts. The Scarborough 110 contains a locking roll-top, making the organ tamper-proof.

LEVELING GLIDES

To assure optimum performance and life of the moving parts of the console, it should always be kept "square." Uneven floors tend to distort the case-work over a period of time and extreme stresses will damage the casework and equipment. The leveling glides are under each corner of the console and bench, and are mounted on heavy threaded pins. These may be adjusted as much as 1-1/2" to compensate for irregularities in the floor. A simple spirit level can assure the most accurate settings. This is particularly useful in schools where the organ may have to be moved to several locations.

SPEAKER SYSTEM

The Scarborough 110 is available with either a self-contained, two-channel speaker system, or with external cabinets. The internal speaker system consists of a Main Channel (4 speakers) and a built-in Leslie rotating speaker element.

The external speaker system has four independent channels, which are capable of being mixed into two channels where necessary.

There is a Leslie output that will accommodate Rodgers Leslie cabinet RL-2 or the 147 Leslie with an adapter, obtained from the Rodgers Organ Company.

RODGERS TRANSPOSER

The transposer is an "extra" available on all Rodgers Organs. It will raise or lower the pitch of the organ a full four semitones (half steps) in either direction. The transposer is controlled by 8 pitch-changing pistons and a neutral position piston on the right Swell piston rail. There is also a corresponding light panel to inform the organist of the position of the transposer, which avoids confusion.

The transposer is especially useful to the organist who does much accompanying by saving the time necessary to mentally transpose music on the printed sheet into a different key. It is a known fact that many singers have the need of a key change to accommodate the range of their voice, sometimes as far as a major third in either direction. This is accomplished easily by merely selecting the number of half steps needed to be changed, pressing the appropriate piston, and then playing the music as written on the printed page.

Another feature of the transposer is the circuit that returns the setting to normal pitch (O piston) automatically when the organ is shut off. This avoids the problem that would be created if the organ was used again (under hurried circumstances) when there would not be sufficient time to check all of the controls on the console.