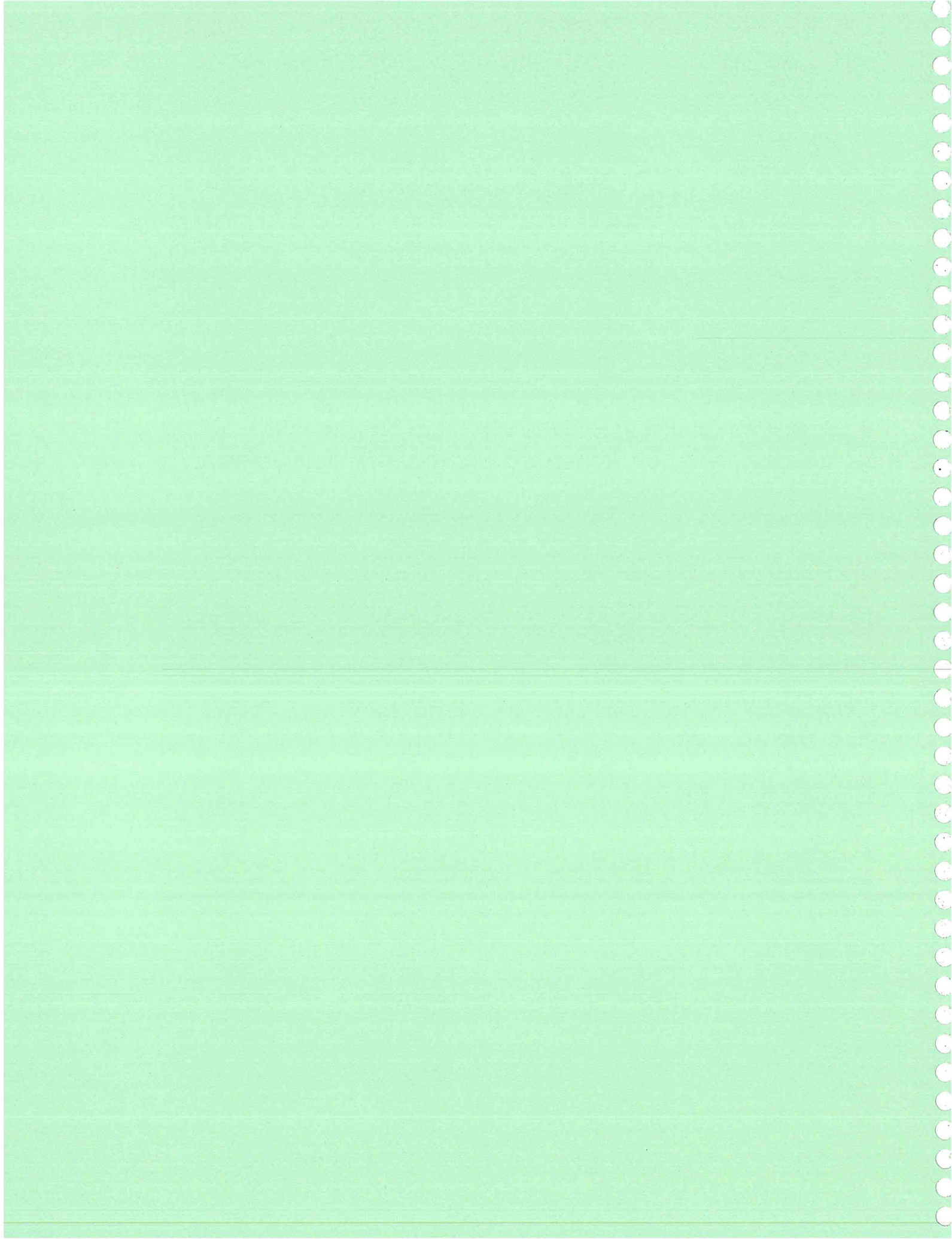


RODGERS

Newport 830
and
Newport 830 Pipe Augmented
Owner's Manual



OWNER'S MANUAL
FOR
RODGERS
NEWPORT 830
AND
NEWPORT 830 PIPE AUGMENTED

MARCH, 1986

RODGERS INSTRUMENT CORPORATION

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THE RODGERS NEWPORT 830

The RODGERS NEWPORT 830 combines the finest organ traditions and classical tonal schemes with current electronic technology to give the organist and the listener truly fine organ sound. This instrument's design began with the development of a comprehensive specification that allows music from all periods and performance schools to be played in an accurate and authentic manner.

ALL RODGERS ORGANS are manufactured to console specifications set forth by the American Guild of Organists. These specifications create a uniformity as to compass of keyboards (61 notes) and pedalboard (32 pedals), and the placement of keyboards in relation to the pedalboard. The latter requirement allows people of various sizes to play an organ comfortably. There are also specifications for the placement of stop tablets and couplers. Rodgers has always adhered to these specifications in its classic organs to provide comfortable organs for all who play.

Your organ contains the following divisions: The Great Organ; the Swell Organ; and the Pedal Organ. The 830 Pipe Augmented also includes a Positiv Organ. Each division derives its name from its function in the tonal scheme of the organ.

The GREAT ORGAN has the boldest Principal (Diapason) ensemble and a solid Flute ensemble to support the Principals. An appropriate word for ensemble is "chorus," which generally means that two or more pitch levels (8', 4', 2', etc.) of a tonal family are sounding simultaneously. There are softer accompanimental stops of Flute and Principal tone which provide a subtle texture to support the solo stops of the Swell Organ.

The optional POSITIV ORGAN functions as a secondary division to the Great Organ when a Rodgers Pipe Augmented Pipe Set is added to your instrument. Normally the Positiv Organ plays from the Swell keyboard giving the player the flexibility of a secondary pipe division to act as a foil to the Great. It has Principal and Flute choruses that add sparkle to the Swell Organ and are very useful in hymn playing. The Positiv pipes are affected by the Swell couplers.

The name for the SWELL ORGAN originated when pipes were placed inside a special chamber called a swellbox. One side of the swellbox has Venetian shutters which are controlled by a pedal called the Swell Pedal. This pedal enables the organist to control the dynamic level (loudness and softness) of this division by gradually opening and closing the shutters, thereby creating crescendos and decrescendos. This was not possible in earlier organs, as the dynamics were determined solely by the number of stops drawn. The modern Swell Organ has a secondary Principal Chorus, complete Flute Chorus, Celeste and Reed voices, and couplers at the 16' and 4' pitches, which give this division large tonal flexibility.

The PEDAL ORGAN was so named because its keys are played by the feet. All Rodgers Organs have a complete pedal organ which will provide a suitable foundation for any manual registration, and provide appropriate independence for all literature.

THE MUSICAL RESOURCES OF THE NEWPORT 830

There are two major categories of organ tone—Flue and Reed:

FLUE: This category includes Principals (Diapasons), Flutes, and Strings. These voices are produced by similarly constructed pipes called flue pipes. These pipes make a sound when air enters and is channeled through a thin opening, directing the air column upward against the lip of the pipe. This vibrating air sheet sets up vibrations in the column of air inside the pipe which creates the musical tone. Its principle is that of the common whistle.

REED: In this pipework, sound is generated by a metal tongue (reed) vibrating against a metal shallot, with flat, open portion of the shallot facing the tongue. These parts are contained in the “boot” of the pipe. The resonator (uppermost tubular section) affects the timbre (color) and pitch of the particular pipe. Such voices as the TROMPETTE, OBOE, KRUMMHORN, and VOX HUMANA are members of the Reed Family. They are easily recognizable because their drawknob engravings are in red.

THE PRINCIPAL (DIAPASON) FAMILY

The Principals are the tonal family unique to the organ. There is no orchestral counterpart to the Principal nor can it be duplicated by any orchestral instrument. When played in chorus, such as 8' PRINCIPAL, 4' OCTAVE, and 2' SUPER-OCTAVE on the Great manual, the resulting sound provides body, clarity, and the base to which the other tone families of the organ must relate and blend.

The Mixture stops are made up of several pitches of high-pitched Principal pipes. The pitches selected augment the natural harmonic overtone series. A mixture's prime function is to add sparkle to the Foundation tone of the organ. The Roman numeral on the drawknob indicates the number of pitches sounding when a single note is depressed, *e.g.*, SCHARF III—IV (three to four pitches), MIXTURE V (five pitches).

When used sensitively with suitable Foundation stops and/or Reeds, a Mixture provides the crown of the tonal spectrum. When used in combinations for hymn playing, Mixtures provide pitch clarity for the ear, resulting in better congregational singing.

THE FLUTE FAMILY

The Flute family has a dual role in good organ design. The Flutes must support the Principals and, in addition, provide another fund of tone color for solo and accompaniment voices. The most developed Flute Chorus is in the Swell Organ where Flutes are available from 16' through 1' pitches. In the Great Organ the Flutes give added body when used with the Principals.

By combining unison and non-unison (mutation) Flute stops, the organist can create synthesized solo voices. The 2²/₃' NASARD and the 1³/₅' TIERCE on the Swell manual can be used in combination with Flutes of 8' and/or 4' pitches to produce the classic solo stop called SESQUIALTERA. The combination and proper balance of unison and non-unison pitches which comprise these combinations are a standard practice of organ design dating back hundreds of years.

The 1¹/₃' QUINT on the Positiv manual is useful for adding a subtle sparkle to any combination. It is most commonly used with the 8' and 4' Flutes to give a very colorful, quaint sound useful for contrapuntal literature.

The combination of the Great 8' BOURDON and the 2²/₃' NASAT is a cool, elegant solo voice.

Flutes are found in the Pedal Organ as well—playing at 32' and 16' pitches, as well as supplying Flute tone at 8', 4', and 2'.

THE STRING FAMILY

Strings are small scaled (reduced diameter) Principals that are decreased in volume and have a brighter timbre. Strings are most useful as accompanimental stops since they are subtle, and with their abundance of harmonics (natural overtones) each note of the most complex chord can be heard with distinction.

The String family stops on the NEWPORT 830 are the 8' GEMSHORN, the 8' VIOLA POMPOSA, the 8' GAMBA, and the 8' ECHO GAMBA.

CELESTES

A celeste is a special musical effect designed to create the "orchestral sound" of multiple identical instruments playing at the same time, e.g., a section of violins. Celeste sound is useful for enriching Flute and String tones, but is never used with Reeds.

The NEWPORT 830 has two Celeste stops which engage separate and individually tunable pitch sources to produce authentic organ Celestes. The Swell VIOLA CELESTE II and the Great FLUTE CELESTE II provide a tonal kaleidoscope of warm, romantic organ tone.

THE REED FAMILY

The Reed family is the most colorful of all the organ families and is subdivided into three sections: Chorus Reeds, Semi-Chorus Reeds, and Solo Reeds. Chorus Reeds are generally of Trumpet quality and usually located in the Swell Division. Semi-chorus Reeds and Solo Reeds may be found on any manual. The Rodgers NEWPORT 830 Organ has *Chorus Reeds* on the Swell (16' CONTRE TROMPETTE, 8' TROMPETTE and 4' CLAIRON), the Great (16' TROMPETTE) and the Pedal (32' and 16' BOMBARDES and 8' TROMPETTE, and 4' CLAIRON). The organ contains *Semi-Chorus Reeds* (KRUMMHORN, VOX HUMANA, and OBOE) which can be used both as Chorus Reeds and as Solo Reeds. Also, your organ has *Solo Reeds*, the 8' MAJOR TUBA and the 8' FESTIVAL TRUMPET. The Festival Trumpet is best used sensitively for festive occasions, or for heroic solo melodies. It has its own FF control on a piston under the Swell manual.

PERCUSSIONS

The Percussions found on your Rodgers Organ are the CARILLON (with alternate tunings) and HARP. A HARPSICHORD voice is available as an option. These voices are independent of all other voices, and they have volume and sustain length controls.

The knob labeled "Option" has three positions which correspond to three tunings for your CARILLON: 1) Major-tuned bells, 2) Minor-tuned bells, and 3) Flemish-tuned bells. The Great CARILLON is best used one note at a time, since its complex harmonic content will clash if more than one note at a time is played. The Swell 8' VIOLA POMPOSA and 8' VIOLA CELESTE are good stops to use if you wish to accompany the Carillon.

The Great HARP is very effective when used in combination with soft voices as an accompaniment texture.

The charts on the following pages show the stop list for the NEWPORT 830.

STOP AND COUPLER LIST

NEWPORT 830

AND NEWPORT 830 PIPE AUGMENTED

GREAT

SWELL

POSITIV

PEDAL

PRINCIPALS

8' PRINCIPAL
4' OCTAVE
2' SUPEROCTAVE
SCHARF III-IV
(ALTERNATE MIXTURE)
MIXTURE IV-V
(ALTERNATE MIXTURE)

8' VIOLA POMPOSA
4' PRINCIPAL
PLEIN JEU IV-V
(ALTERNATE MIXTURE)

4' PRINCIPAL
2' OCTAVE

32' CONTRA PRINCIPAL
16' PRINCIPAL
8' OCTAVE
4' CHORALBASS
MIXTURE IV

FLUTES

8' BOURDON
8' FLUTE CELESTE II
4' FLUTE
2²/₃' NASAT
2' WALDFLOTE
1¹/₃' LARIGOT
SESQUIALTERA II

16' BOURDON DOUX
8' GEDACKT
4' NACHTHORN
2²/₃' NASARD
2' BLOCKFLOTE
1³/₅' TIERCE
1' SIFFLOTE

8' BOURDON
4' FLUTE
2²/₃' NASARD
1¹/₃' QUINT
1' SIFFLOTE

32' CONTRE BOURDON
16' SUBBASS
16' VIOLONE
16' BOURDON DOUX (SW)
8' FLUTE
4' NACHTHORN
2' FLUTE

STRINGS

8' GEMSHORN

8' VIOLA POMPOSA
8' VIOLA CELESTE II
8' GAMBA
8' ECHO GAMBA

REEDS

16' TROMPETTE
8' MAJOR TUBA
8' KRUMMHORN

16' CONTRE TROMPETTE
8' FESTIVAL TRUMPET
8' TROMPETTE
8' OBOE
8' VOX HUMANA
4' CLAIRON

16' DULZIAN (GT)
8' KRUMMHORN (GT)

32' CONTRE BOMBARDE
16' BOMBARDE
8' TROMPETTE
4' CLAIRON

TREMULANT

TREMULANT

TREMULANT

PERCUSSIONS

CARILLON (3 alternates)
HARP
HARPSICHORD (OPTIONAL)

COUPLERS

4' GREAT TO GREAT
16' SWELL TO GREAT
8' SWELL TO GREAT
4' SWELL TO GREAT
16' POSITIV TO GREAT
8' POSITIV TO GREAT

16' SWELL TO SWELL
SWELL UNISON OFF
4' SWELL TO SWELL

POSITIV UNISON OFF

8' GREAT TO PEDAL
4' GREAT TO PEDAL
8' SWELL TO PEDAL
4' SWELL TO PEDAL
8' POSITIV TO PEDAL

GENERALS (ELECTRONIC VERSION)

SWELL MAIN OFF
SWELL ANTIPHONAL ON
GREAT/PEDAL MAIN OFF
GREAT/PEDAL ANTIPHONAL ON
MAIN CHORUS OFF
FLUTE TREMULANTS FULL
FESTIVAL TRUMPET FF
ORCHESTRAL CRESCENDO

GENERALS (PIPE VERSION)

GREAT/PEDAL PIPES OFF
GREAT/PEDAL ANCILLARY ON
MAIN OFF
ANTIPHONAL ON
FLUTE TREMULANTS FULL
MAIN CHORUS OFF
FESTIVAL TRUMPET FF
ORCHESTRAL CRESCENDO

RODGERS PIPES

Your Rodgers organ's microprocessor has been programmed to accept the addition of 2, 4, 6, 8, or seventeen ranks of Rodgers pipes. Stops that are programmed to play pipes are marked with an asterisk in the specification page at the end of this book. By using Pipes Off and Ancillary On stop tablets those voices can be set to play pipes, electronic voices, or both.

At the Heart of Rodgers tradition of organ building are the pipes, exquisitely built from the finest materials. Our techniques originate with old world organ builders, whose pipe making methods go back centuries. Their experience led to Rodgers' integrated pipe augmented designs, which combine time-honored pipe practices with electronic technology. To preserve the classical pipe making practices, we keep cut-ups as low as possible and use low wind pressures. This allows the whole pipe to resonate with greater richness of tone, and provides a rich pallet of harmonics.

Perhaps the most crucial step in pipe making is the scaling. Pipes are variable scaled, or sized, according to the specific requirements for their role in the tonal scheme. Variable mouths, cut-ups and tapering are used in the scaling, tailoring each rank to its most useful musicality. The resulting effect is a sound much more full-bodied and emphatic than the size or number of ranks would suggest.

Finally, when all the ranks of pipes have been completed and passed numerous inspections, they are ready for installation. Under the strict supervision of Rodgers experts, pipes are voiced according to the specific characteristics of their surroundings. It is this classic blend that makes the Rodgers Pipe Augmented organ a stunning masterpiece of visual and accoustical art.

SPECIAL FEATURES

TURN-ON/TURN-OFF

To turn the organ on, press the POWER switch firmly and release it. During the short delay in turning on, your organ's microprocessor tests your instrument to insure proper operation in accordance with its specifications, then the power switch lights up and the organ is ready to play. Should the microprocessor test uncover problems in the instrument's operation, it will not turn on. If repeated attempts fail to light up your instrument's power switch, contact an authorized Rodgers dealer or serviceman.

To turn off the organ, press and release the POWER switch again.

The organ automatically turns itself off if left idle for more than two hours. Just before turning off, the computer flashes the POWER lamp as a warning to the organist. Pressing any piston or key will prevent the organ from turning off for another two hours. This feature prevents the organ from being left on by mistake.

COUPLERS

There are two kinds of couplers on your Rodgers organ: intermanual and intramanual couplers.

The function of an Intermanual Coupler is to enable the stops of one division or keyboard to be played on another keyboard or the pedalboard. Examples of Intermanual Couplers are SWELL TO GREAT 8' and SWELL TO GREAT 4'. Intramanual couplers allow voices to be played at a different pitch level or levels on those voices' home manual. Examples of Intramanual Couplers are SWELL TO SWELL 16' and SWELL TO SWELL 4'. Couplers greatly increase the flexibility of the NEWPORT 830.

DUAL MEMORY COMBINATION ACTION

One of the exciting features of your Rodgers organ is its combination action which is adjustable by the organist from the console. The organist can select favorite registrations and make rapid changes in tone color using this advanced system.

Rodgers Microprocessor Combination Action is a specially refined dual memory system. This gives the organist a total of 20 General pistons and ten independent Divisional pistons each for the Swell, Great, and Pedal.

The pistons can only be set if the organist possesses the proper code for unlocking the combination action's memories. For further information see the section below.

Both memories can be used at any time, but they can only be changed *if the proper code is used.*

TO SET THE MEMORY ACCESS CODES:

1. Write down the code(s) you want to enter. (The code can be any numeric sequence of up to eight digits where no digit is used consecutively.)
2. Place the "Combination Access Key" magnet just in front of the headphone jack under the keydesk. The power lamp should now start flashing.
3. Press the M1 memory piston.
4. Enter your personal code for Memory 1 on the General pistons. (All of the organs are set with the code "1" at the factory. You may change the code as you wish.)
5. Press the SET piston.
6. To access Memory 2, repeat steps 3, 4, & 5, but use the M2 piston. (All of the organs are set with the code "2" for this memory. You may change the code as you wish.)
7. Now press the General Cancel Piston (0 piston).

TO UNLOCK A MEMORY:

1. While holding the SET piston in, press M1 or M2. The selected memory piston will start flashing.
2. Enter the "Access Code" on the General pistons. The Selected memory lamp will stop flashing.
NOTE: If a mistake is made, press General Cancel "0" which will stop the lamp flashing, leaving the memory locked.

HOW TO SET THE PISTONS:

1. Select the Memory (1 or 2) to receive the registrations by pushing M1 or M2.
2. Select your registration.
3. Push the Set piston and hold.
4. While pushing the Set piston, push the desired piston and then release both pistons simultaneously.

In addition to use as a Capture system, your Combination Action can also function as a "Hold and Set" system. To use it this way, simply press and hold the numbered piston you wish to set all the way in and turn on the drawknob you wish to set. The desired memory must, of course, be unlocked.

The memories relock when the organ is turned off.

CHORUS CONTROL

The Chorus effect is patterned after the natural interaction of pipes in a pipe organ. Rodgers organs utilize digital techniques to produce this effect. The Main Chorus control is located on the coupler rail. This control affects the entire organ. To experience the enriched sound, turn on the 8' VIOLA POMPOSA, 8' GEDACKT, 4' PRINCIPAL, and 2' BLOCK-FLOTE on the Swell manual.

While holding down a chord on the Swell manual, turn the Main Chorus on and off and listen to the difference.

On the NEWPORT 830, the MAIN CHORUS turns on with the organ and must be turned off, should you wish to play without it.

CHIFF AND AIR PUFF

Chiff and Air Puff are natural speech characteristics of classically voiced pipes. These characteristics give additional clarity to both pitch and attack. There are several chiff circuits on your Rodgers organ affecting the Principal and Flute voices, and they are always on. Their levels are adjustable to the requirements of the room in which your organ is located.

TREMULANTS

Tremulants can be most useful when judiciously used. Each manual division has an independent Tremulant.

When turned on, Tremulants affect only the stops in the division where that drawknob is located. Each independent Tremulant is adjustable for both speed and depth. It is recommended that these adjustments be made by **AUTHORIZED PERSONNEL ONLY**.

The Flute Tremulant Full tablet affects all the Flute voices on the manual divisions of the organ. It is a deeper and faster tremulant than those mentioned above and is useful where Evangelistic music is used. It also has independent speed and depth controls.

THE CONTINUO PISTON

The name of this accessory device has been borrowed from the ancient term "Basso Continuo" meaning thoroughbass. When this lighted piston (located under the Great manual) is pressed, any stops or couplers on the Pedal Organ will sound from the lowest key being played in the bass of the Great manual, providing a Pedal Bass without having to actually use the feet. Rodgers microprocessor circuitry prevents its "jumping" allowing repeated bass notes to be played with proper effect.

In its normal setting, the CONTINUO affects keys 1-24 of the Great manual, but its compass is programmable. As few notes as 1-13, or as many notes as 1-32 may be programmed. The procedure for programming the compass is as follows:

1. Hold in SET and press CONTINUO. The CONTINUO piston will start flashing.
2. Release both pistons.
3. While CONTINUO is flashing, press any key which corresponds to the highest note to which you wish the compass to extend. You may select any note from key 13 to key 32. After you have pressed the key, the CONTINUO piston will shut off.

NOTE: When you press the key to set the compass, no sound will be heard, so that you will not make a disturbance if you program the compass during a performance.

4. To use the new compass, press the CONTINUO piston.

NOTE: When the organ is turned off, the compass of the CONTINUO will revert to 24 notes.

SOLO PISTON

When this lighted piston (located under the Great manual) is pressed, it allows any stop or coupler of the Swell Organ (including the Positiv voices on a Pipe Augmented instrument) to sound from the highest key being played on the Great manual. Thus, a solo melody and an accompaniment can be played from the same manual. The unique control allows the player to repeat notes without the SOLO "jumping" so use of this device does not require a special technique.

In its normal setting, the SOLO affects keys 25-61 of the Great manual, but its compass is programmable, and may be extended downward to key 13, or stopped at key 49. The procedure for programming the compass is as follows:

1. Hold in SET and press SOLO. The SOLO piston will start flashing.
2. Release both pistons.
3. While SOLO is flashing, press the key which corresponds to the lowest note to which you wish the compass to extend. You may select any note from key 13 to key 49. After you have pressed the key, the SOLO piston will shut off.

NOTE: When you press the key to set the compass, no sound will be heard, so that you will not make a disturbance if you program the compass during a performance.

4. To use the new compass, press the SOLO piston.

NOTE: When the organ is turned off, the compass of the SOLO will revert to keys 25-61.

USING THE CONTINUO AND SOLO:

Some very interesting effects are made possible with these two accessory devices.

- A. Suppose you wish to play a solo on the Swell OBOE, with accompaniment on the Great FLUTE CELESTE II and GEMSHORN, with an appropriate Pedal.
1. Draw the Swell OBOE and TREMULANT. Draw the Great FLUTE CELESTE II and the GEMSHORN. Draw the Pedal BOURDON DOUX 16' and the GREAT TO PEDAL 8'. Press CONTINUO and SOLO pistons.
 2. Play on the Great manual. The lowest note being played will sound the Pedal combination, the highest note will sound the OBOE, and the notes between will play the accompaniment from the Great.
- B. Suppose you wish to "solo out" the tune of a hymn on the Festival Trumpet, but wish to have both hands on the Great.
1. Select the Swell FESTIVAL TRUMPET. Use Memory I, General 10 of the factory settings for Great and Pedal voices. Press the SOLO piston.
 2. Play the hymn on the Great Manual. The top-note melody will be played on the FESTIVAL TRUMPET while the remainder of the notes will sound the selected Great stops. The Pedal will play normally.
 3. Press CONTINUO. Now the Pedal combination will play from the lowest Great key. The entire piece can now be played on the Great Manual keys alone.

Experimentation will reveal many special effects and useful improvisational techniques impossible on less advanced organ systems.

SOSTENUTO

The Sostenuto allows a chord to be sustained without holding the keys down. There are times when a sustained chord is necessary overlaid by arpeggios or other moving melodic or harmonic activity. This is quite frequently found in piano transcriptions of orchestral accompaniments for choral works. To engage the Sostenuto, press the SOSTENUTO piston. While holding a chord on the Great Manual, slide your right foot (placed on the Great expression pedal) towards the left. You will feel a small toe switch. Pressing and holding the switch will engage the Sostenuto on the Great Manual. Now remove your hand from the Great keyboard and you will notice that the chord continues to sound. To disengage the sound, release the toe switch. Any number of notes can be held.

You will also find the Sostenuto useful to sustain a chord when making a registration change that requires two hands to complete or when changing pages of music. The Sostenuto will effect all stops and couplers on the Great Manual.

ALTERNATE MIXTURE PISTONS

Very often, in modern organs, Mixture stops which are appropriate for the playing of great organ literature are too high pitched, or of the wrong harmonic emphasis to be useful in an accompanimental role. For example, the Swell PLEIN JEU—which is used in choral accompaniments as well as for a complementary harmonic crown to the Reeds. The choral accompaniment would require lower pitches to blend with the voices, whereas the Reed Chorus needs high, sharper mixture tone to add the essential eclat to this exciting sound. *ALTERNATE MIXTURE* pistons solve this problem.

For each manual Mixture stop on the NEWPORT 830, there is a lighted *ALT MIX* piston. When operated, it directs the microprocessor to assign a completely different Mixture—different in pitch and structure—to the Mixture draw knob with which it is associated. In the unaltered state, the Mixtures are in the lower, more "accompanimental" form. When the *ALT MIX* is pressed, it lights and indicates that the altered state—higher pitched and brighter composition—is in effect. The *ALTERNATE MIXTURE* pistons may be set on their respective divisional pistons or on the Generals.

MAIN OFF/ANTIPHONAL ON CONTROLS

These tablets operate when an antiphonal speaker system is connected to your Rodgers organ.

The basic concept of an antiphonal division is to place antiphonal speakers at the opposite end of the room from the main sound source. This placement allows greater musical flexibility because the sound originates from either end of the listening area, or from both ends simultaneously.

The MAIN OFF tab shuts off the sound of the main body of speakers, and the ANTIPHONAL ON tab turns on the auxiliary, or antiphonal speakers.

NOTE: If the MAIN OFF tab is depressed, the ANTIPHONAL ON must also be depressed, or the organ will not sound through either system.

TRANSPOSER

The Transposer will raise or lower the pitch of the organ four semitones (half-steps) in either direction. It is controlled by a knob at the right hand side jamb. The Transposer is especially useful for accompanying, eliminating the need to mentally transpose music on the printed sheet into a different key. Many singers need a key change to accommodate their voice range, sometimes as far as a major third in either direction. The Transposer accomplishes these key changes simply by twisting a knob. A Transposer indicator lights when the transposer is engaged.

Another important feature of the Transposer is that it returns to normal pitch automatically when the organ is shut off, or when the combination action Cancel piston is pushed. This avoids the problem of the organ being in the wrong key the next time it is played.

CRESCENDO AND EXPRESSION PEDALS

The NEWPORT 830 has a Crescendo pedal and two Expression pedals. The pedal on the right (which is slightly raised) is the Crescendo pedal which gradually adds a pre-determined selection of stops as it is pressed forward. The Crescendo pedal does not affect the stops already set up on the organ but merely adds to them.

The Crescendo pedal also has another function. Your Rodgers organ is equipped with a programmable ORCHESTRAL CRESCENDO, giving the organist a romantic crescendo sequence that includes tremulants and celestes.

By pushing the Orchestral Crescendo (ORCH CRESC) thumb piston, located under the Swell manual, you will disengage the standard Crescendo and engage the Orchestral Crescendo. Instructions for *setting the Orchestral Crescendo* follow:

1. Both memories must be unlocked to allow the Crescendo sequence to be changed.
2. Hold SET and press the ORCH CRESC piston. It will start flashing.
3. The combinations on the first position of the Crescendo shoe will be displayed. Make any changes you desire and press SET.
4. Repeat step 3 for the remaining 60 positions.
5. After the last position has been set, the ORCH CRESC piston stops flashing.

The pedal in the middle is the *Swell Expression Pedal* which controls the overall volume or loudness of the Swell Organ. The pedal on the left is the *Great/Pedal Expression Pedal* which controls the overall volume or loudness of the Great, and Pedal divisions. These pedals are used to give variety of expression to the music played. Pressing the pedal forward increases the volume. Drawing back decreases the volume. (Note: The Great and Positiv pipes are not expressed.)

TUTTI PISTON AND TOE STUD

Sometimes it is desirable to have a full organ registration suddenly and quickly. To do so on the NEWPORT 830 simply push the TUTTI Piston or TUTTI Toe Stud. To cancel the full organ (TUTTI), push the TUTTI Piston or the TUTTI Toe Stud again.

On your Rodgers Organ you can actually set your own Tutti. To do so, follow the instructions below.

TO READ WHAT IS SET ON TUTTI:

While holding TUTTI in, press the SET piston.

TO SET TUTTI:

Unlock either Memory 1 or Memory 2.

Set up your desired combination, then while holding SET in, press TUTTI.

Turn off the organ to relock the memory.

PIPES OFF/ANCILLARY ON

On Pipe Augmented instruments, those voices marked with an asterisk (*) on the specifications at the end of this booklet will normally be derived from real pipes. Turning both Pipes Off and Ancillary On Stop Tablets on turns off the pipes and tells the microprocessor to use the organ's electronic circuitry to create these voices. Turning the Ancillary On Stop Tablet on without the Pipes Off Stop Tablet allows both pipes and electronics to both play at once on any of the appropriate voices.

TUNING KNOB

Your Rodgers organ is equipped with a tuning compensation knob which allows you to tune the entire organ easily and quickly to a piano or other instrument which may not be at "Concert Pitch" when played with the organ. When the control knob is pushed in, the organ returns to "Concert Pitch" (A440).

If your organ is Pipe Augmented, the Tuning Knob will bring the pipes and electronics into tune with each other.

HEADPHONE JACK

Your Rodgers Organ has a Headphone Jack located under the keydesk near your right knee. When you plug in a set of headphones, the speaker system shuts off, allowing you to play in privacy. If your organ has pipes, they will also shut off. It is recommended that you use a standard eight (8) ohm headphone set. Your Headphone Jack is designed to run only *ONE* set of headphones at a time.

ZIMBELSTERN

Your organ is prepared for the optional ZIMBELSTERN. The ZIMBELSTERN toe stud is reversible, that is, you push to turn on the ZIMBELSTERN and push it again to turn it off.

CARE AND MAINTENANCE OF YOUR RODGERS ORGAN

As with any fine musical instrument, reasonable care is necessary to protect your investment in your Rodgers Organ. Normally, you should experience no difficulties because it has been carefully designed, and only the finest component parts are used in its manufacture. Even the finest equipment, however, is subject to occasional service. Your Rodgers Service Representative is fully equipped and qualified to handle any service problems which may arise.

Your new Rodgers organ is not only a fine musical instrument, but 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. Each finish coat is thoroughly dried before the next coat is applied. This results in a finish that is lasting and easy to keep looking beautiful. Following are a few tips on caring for your Rodgers organ.

CONSOLE AND PEDALBOARD

A frequent dusting with a soft, clean cloth is usually all that is required. For a lacquered finish, a small amount of commercial polish on the cloth will keep the organ smudge-free and help remove fingerprints. Waxes, oils, or silicone base polishes should not be used. For an oiled finish, a fine quality furniture oil will enhance the beauty of the wood. Always wipe the surfaces *with the grain*, using straight, even strokes.

Since extreme cold, heat, or exposure to sunlight may injure the finish of any fine piece of furniture, neither the console nor finished speaker cabinets should be placed over a heat register or near an open window.

KEYBOARDS, COUPLER TABS AND DRAWKNOBS

Keyboards, Coupler Tabs and Drawknobs should be cleaned with a soft cloth slightly dampened with water and a mild soap. Avoid dripping water between the keys. **DO NOT USE SOLVENTS** (alcohol, gasoline, carbon tetrachloride, etc.).

CLEAR ACRYLIC MUSIC RACK

To clean your music rack use a soft cloth with a mild solution of soap and warm water. Wipe dry.

PIPES, ON PIPE AUGMENTED INSTRUMENTS

To keep the pipes of your Rodgers organ beautiful, refrain from touching them with ungloved hands. You should not attempt to clean or polish them.

Because handling in any way by non-trained persons can spoil tuning or even cause damage, it is strongly suggested that the pipes never be handled or touched by any but organ service persons.

LEVELING GLIDES

To assure optimum performance and life of the moving parts of the console it should always be level. Uneven floors tend to distort the case over a period of time, and extreme stresses will damage the case work and equipment. The Leveling Glides are under each corner of the console and bench and are mounted on heavily-threaded pins. These may be adjusted as much as 1 1/2 inches to compensate for irregularities in the floor. A carpenter's spirit level can assure the most accurate settings.

RODGERS FIVE-YEAR LIMITED WARRANTY

The Rodgers Organ Company warrants every part of your Rodgers console against defective materials or workmanship for a period of five years beginning on the date of purchase (for original retail purchasers from an authorized Rodgers dealer only).

IT IS IMPORTANT THAT YOU COMPLETE THE WARRANTY REGISTRATION CARD INCLUDED WITH THIS MANUAL AND RETURN IT TO US TO VALIDATE YOUR WARRANTY!

Rodgers Limited Warranty provides any needed replacement parts during its five-year term. Labor, in connection with the replacement of parts, is not covered by the factory warranty. Contact your authorized Rodgers dealer for details on his labor warranty.

Complete factory warranty terms are spelled out in the Rodgers Limited Warranty certificate available at your Rodgers dealer or mailed to you upon receipt of your Warranty Registration Card.

REGISTRATION SUGGESTIONS

The following pages of registrations are guidelines for selecting appropriate stops to match broad suggestions given in most printed organ literature. There will be variances of registration, depending upon the music, acoustics of the room, and the spirit of the performance.

One of the great joys of the Rodgers organ is the incredible tone color possibilities. Your experiments with varying combinations of stops will prove a never-ending source of imaginative realizations of musical potential.

GREAT ORGAN REGISTRATION SUGGESTIONS

Given Suggestions	Appropriate Registration	Given Suggestions	Appropriate Registration
Flute*	8' BOURDON	Foundations ff	8' PRINCIPAL
String*	8' GEMSHORN		8' BOURDON
Foundations p	8' BOURDON		4' OCTAVE
	8' GEMSHORN		4' FLUTE
			2' SUPEROCTAVE
Foundations mf	8' BOURDON	Full Great	8' PRINCIPAL
	8' GEMSHORN		8' BOURDON
	4' FLUTE		4' OCTAVE
Foundations f	8' PRINCIPAL		4' FLUTE
	8' BOURDON		2' SUPEROCTAVE
	4' OCTAVE		2' WALDFLOTE
	4' FLUTE		MIXTURE IV-V
			16' TROMPETTE

**Tremulant may be added*

SWELL ORGAN REGISTRATION SUGGESTIONS

Given Suggestions	Appropriate Registration	Given Suggestions	Appropriate Registration
Flutes*	8' GEDACKT	Foundations mf	8' VIOLA POMPOSA 8' GEDACKT 4' NACHTHORN
Strings*	8' VIOLA POMPOSA 8' VIOLA CELESTE II	Foundations f	8' VIOLA POMPOSA 8' GEDACKT 4' PRINCIPAL 4' NACHTHORN 2' BLOCKFLOTE
Reed (Solo)*	8' TROMPETTE OR 8' OBOE OR 8' VOX HUMANA	Full Swell	16' BOURDON DOUX 8' VIOLA POMPOSA 8' GEDACKT 4' PRINCIPAL 4' NACHTHORN 2' BLOCKFLOTE PLEIN JEU IV-V 16' CONTRE TROMPETTE 8' TROMPETTE
Reed (Big Solo)	8' FESTIVAL TRUMPET 8' TROMPETTE FESTIVAL TRUMPET FF		
Reed (Chorus)	16' CONTRE TROMPETTE 8' TROMPETTE 4' CLAIRON		
Foundations p	8' VIOLA POMPOSA 8' GEDACKT		

**Tremulant may be added*

PEDAL ORGAN REGISTRATION SUGGESTIONS

Given Suggestions	Appropriate Registration	Given Suggestions	Appropriate Registration
Flutes	16' SUBBASS 8' FLUTE	Full Pedal	32' CONTRA PRINCIPAL 32' CONTRE BOURDON 16' PRINCIPAL 16' SUBBASS 8' OCTAVE 8' FLUTE 4' CHORALBASS 2' FLUTE MIXTURE IV 16' CONTRE TROMPETTE 4' CLAIRON
Pedal Principals	16' PRINCIPAL 8' OCTAVE		
Foundations p	16' BOURDON DOUX		
Foundations mf	16' SUBBASS 8' FLUTE		
Foundations f	16' PRINCIPAL 16' SUBBASS 8' OCTAVE 8' FLUTE 4' CHORALBASS	Pedal Solo	4' CLAIRON or 4' CHORALBASS or 4' NACHTHORN 2' FLUTE

LISTING OF RODGERS FACTORY PROGRAMMED MEMORY PISTONS

Your NEWPORT 830 was shipped from the Rodgers factory with the following combinations pre-set on its memory pistons. See the earlier section on the memory system to set your own registrations on the pistons.

NEWPORT 830 MEMORY I EXPLANATION OF FACTORY PREPROGRAMMED REGISTRATIONS

GENERALS

1. Soft Celestes useful for accompaniment.
2. Oboe solo with Harp accompaniment.
3. String Celeste Chorus with Flute Celeste and Harp accompaniment useful for "Romantic" music.
4. Celeste with Great Flute ensemble both hands on either keyboard.
5. Solo Flute combination (a partial Cornet) used for Chorale Preludes.
6. Mezzo Forte hymn combination. Both hands on Great keyboard.
7. Forte hymn combination. Both hands on Great keyboard.
8. Double Forte hymn combination. Both hands on Great keyboard.
9. Solo Trumpets on Swell with accompaniment on Great. Solo piston can be used to have accentuated top line.
10. A Full Organ ensemble (less than Tutti).

DIVISIONALS

GREAT

1. Soft Celeste
2. Foundations Piano
3. Foundations Mezzo Forte
4. Foundations Forte
5. Full Great

SWELL

1. String Celeste
2. Flute
3. Foundations Mezzo Forte
4. Foundations Forte
5. Full Swell

NEWPORT 830 COMBINATION ACTION FACTORY PRESETS

Memory 1

Stop Name	Piston Number										Divisionals				
	Generals										1	2	3	4	5
SWELL	T	1	2	3	4	5	6	7	8	9	10				
Gedackt 8'	.			.	.	.	.	.	.		.		.	.	.
Nasard 2 ² / ₃ '	.					.									
Tierce 1 ³ / ₅ '															
Vox Humana 8'				.											
Oboe 8'	.		.												
Swell to Swell 4'	.			.	.										
Bourdon Doux 16'															
Nachthorn 4'	.		.	.	.	.	.	.	.		.		.	.	.
Blockflöte 2'	.								.		.			.	.
Contre Trompette 16'	.										.				
Clairon 4'	.										.				
Tremulant		.	.	.		.				
Swell Unison Off															
Echo Gamba 8'		.		.	.			.
Viola Celeste II		.		.	.							.
Sifflöte 1'	.										.				
Trompette 8'	.									.	.				
Festival Trumpet 8'										.					
Swell to Swell 16'															
Gamba 8'	.			.	.				.		.
Viola Pomposa 8'	.			.			.	.	.		.		.	.	.
Principal 4'	.							.	.		.		.	.	.
Plein Jeu IV-V	.								.		.			.	.
PEDAL	T	1	2	3	4	5	6	7	8	9	10	1	2	3	4
Nachthorn 4'											.				.
Contre Bombarde 32'	.														.
Clairon 4'	.										.				.
Contre Bourdon 32'	.			.						.	.				.
Subbass 16'	.			.	.		.	.	.	.	.		.	.	.
Bourdon Doux (sw) 16'	.	.	.	.	.		.	.	.	.	.	.	.	.	.
Flute 8'	.			.			.	.	.	.	.		.		.
Flute 2'	.							.		.	.				.
Bombarde 16'	.									.	.				.
Contra Principal 32'	.														.
Principal 16'	.			.				.	.		.			.	.
Violone 16'						.	.		.		.			.	.
Octave 8'	.							.	.		.		.	.	.
Choralbass 4'	.										.		.	.	.
Mixture IV	.										.			.	.
Trompette 8'	.										.			.	.

NEWPORT 830 COMBINATION ACTION FACTORY PRESETS

Memory 1

Stop Name	Piston Number										Divisionals					
	Generals										Divisionals					
GENERALS	T	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5
Great to Pedal 8'	•		•	•	•	•		•	•	•	•					
Great to Pedal 4'																
Swell to Pedal 8'	•				•		•	•	•		•					
Swell to Pedal 4'	•															
Positiv to Pedal 8'	•								•	•	•					
Swell to Great 16'																
Swell to Great 8'	•				•		•	•	•		•					
Swell to Great 4'	•				•											
Positiv to Great 16'																
Positiv to Great 8'	•										•					
Main Chorus Off																
Flute Trems Off																
Great/Pedal Pipes Off																
Great/Pedal Ancillary On																
Main Off																
Antiphonal On																
POSITIV	T	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5
Bourdon 8'	•						•	•	•		•					
Principal 4'	•								•		•					
Octave 2'	•										•					
Sifflote 1'	•										•					
Krummhorn (gt) 8'											•					
Positiv to Swell Unison Off									•	•						
Flute 4'	•							•	•		•					
Nasard 2 ² / ₃ '																
Quint 1 ¹ / ₃ '	•															
Dulzian (gt) 16'	•								•	•	•					
Pipe Tremulant																

NEWPORT 830 COMBINATION ACTION FACTORY PRESETS

Memory 1

Stop Name	Piston Number															
	Generals										Divisionals					
GREAT	T	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5
Principal 8'	•						•	•	•	•	•			•	•	•
Gemshorn 8'									•	•	•			•	•	•
Octave 4'	•							•	•	•	•				•	•
Superoctave 2'	•								•		•				•	•
Mixture IV-V	•								•		•					•
Scharf III-IV	•										•					•
Great to Great 4'	•			•												
Bourdon 8'	•				•	•	•	•	•	•	•		•	•	•	•
Nasat 2 ² / ₃ '																
Larigot 1 ¹ / ₃ '	•								•		•					
Trompette 16'	•															
Krummhorn 8'																
Tremulant		•	•	•		•										
Flute Celeste II 8'		•	•	•								•				
Flute 4'	•				•				•	•	•		•	•	•	•
Waldflöte 2'	•								•	•	•			•	•	•
Sesquialtera II																
Tuba Major 8'																•
Harp			•	•												
Carillon																
	T	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5
Gt Alt Mix A (gt mix IV-V)																
Gt Alt Mix B (gt scharf)																
Sw Alt Mix																
Festival Trumpet ff																
Zimblestern																
Glockenspiel																

NEWPORT 830 MEMORY II

EXPLANATION OF FACTORY PREPROGRAMMED REGISTRATIONS

GENERALS

1. Carillon with Celeste accompaniment.
2. Krummhorn solo (played from Swell keyboard).
3. Mezzo Forte Evangelical hymn combination. Both hands on Great.
4. Forte Evangelical hymn combination. Both hands on Great.
5. Baroque Flutes for 2 or 3 part light contrapuntal literature.
6. A common combination frequently used for Baroque era French literature. The right hand plays on the Great manual using the Cornet ("Kor-nay") combination and the left hand plays on the Swell.
7. Contrasting ensembles used for contrapuntal literature. Please note the 16' Dulzian and Krummhorn coupled to the Pedal and not sounding from any manual keyboard.
8. A solid Mezzo Forte Principal Chorus (useful for all literature).
9. Tuba Solo on Great.
10. Reed dominated ensemble. Both hands frequently on Great.

DIVISIONALS

GREAT

1. Accompaniment
2. P Foundations
3. F Foundations
4. Solo Reed (mf)
5. Solo Tuba

SWELL

1. Soft String
2. Celeste Ensemble
3. Oboe Solo
4. Solo Trumpets
5. Full Swell

NEWPORT 830 COMBINATION ACTION FACTORY PRESETS

Memory 2

Stop Name	Piston Number															
	Generals										Divisionals					
SWELL	T	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5
Gedackt 8'				•	•	•		•	•	•						
Nasard 2 ² / ₃ '								•								
Tierce 1 ³ / ₅ '																
Vox Humana 8'			•		•											
Oboe 8'															•	
Swell to Swell 4'											•	•				
Bourdon Doux 16'																•
Nachthorn 4'				•	•	•	•		•	•			•	•		
Blockflöte 2'									•	•						
Contre Trompette 16'											•					•
Clairon 4'											•	•				•
Tremulant			•	•	•							•	•	•		
Swell Unison Off			•													
Echo Gamba 8'				•	•							•	•			
Viola Celeste II		•		•	•								•			
Sifflöte 1'						•		•	•							•
Trompette 8'											•				•	•
Festival Trumpet 8'															•	
Swell to Swell 16'																
Gamba 8'				•									•			•
Viola Pomposa 8'				•					•	•						
Principal 4'									•	•	•					•
Plein Jeu IV-V								•	•		•					•
PEDAL	T	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5
Nachthorn 4'															•	•
Contre Bombarde 32'											•					
Clairon 4'																
Contre Bourdon 32'										•				•	•	•
Subbass 16'				•	•		•		•	•	•		•	•	•	•
Bourdon Doux (sw) 16'		•	•	•	•	•	•		•			•	•		•	•
Flute 8'				•	•	•	•	•	•				•	•	•	•
Flute 2'								•	•							
Bombarde 16'																
Contra Principal 32'																•
Principal 16'				•	•				•							•
Violone 16'				•	•			•	•	•	•			•		
Octave 8'				•	•			•	•							•
Choralbass 4'								•								•
Mixture IV																
Trompette 8'																

NEWPORT 830 COMBINATION ACTION FACTORY PRESETS

Memory 2

Stop Name	Piston Number															
	Generals										Divisionals					
GENERALS	T	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5
Great to Pedal 8'			•								•					
Great to Pedal 4'																
Swell to Pedal 8'		•		•	•			•	•	•	•					
Swell to Pedal 4'																
Positiv to Pedal 8'								•	•		•					
Swell to Great 16'																
Swell to Great 8'			•	•	•				•		•					
Swell to Great 4'					•						•					
Positiv to Great 16'																
Positiv to Great 8'											•					
Main Chorus Off																
Flute Trems Full																
Great/Pedal Pipes Off																
Great/Pedal Ancillary On																
Main Off																
Antiphonal On																
POSITIV	T	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5
Bourdon 8'																
Principal 4'																
Octave 2'																
Sifflote 1'																
Krummhorn (gt) 8'			•				•	•	•		•					
Positiv to Swell Unison Off								•	•		•					
Flute 4'			•													
Nasard 2 ² / ₃ '																
Quint 1 ¹ / ₃ '																
Dulzian (gt) 16'								•	•		•					
Pipe Tremulant			•	•	•											

NEWPORT 830 COMBINATION ACTION FACTORY PRESETS

Memory 2

Stop Name	Piston Number										Divisionals					
	Generals										Divisionals					
GREAT	T	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5
Principal 8'				•	•			•	•		•			•		
Gemshorn 8'				•	•											
Octave 4'					•		•	•	•		•			•		
Superoctave 2'																
Mixture IV-V								•			•					
Scharf III-IV																
Great to Great 4'																
Bourdon 8'				•	•	•	•	•					•	•		
Nasat 2 ² / ₃ '						•										
Larigot 1 ¹ / ₃ '																
Trompette 16'											•					
Krummhorn 8'															•	
Tremulant			•	•												
Flute Celeste II 8'			•	•	•							•				
Flute 4'				•	•			•					•	•	•	
Waldflöte 2'					•			•						•		
Sesquialtera II							•									
Tuba Major 8'										•						•
Harp												•				
Carillon		•														
	T	1	2	3	4	5	6	7	8	9	10	1	2	3	4	5
Gt Alt Mix A (gt mix IV-V)																
Gt Alt Mix B (gt scharf)																
Sw Alt Mix								•								
Festival Trumpet ff																
Zimblestern																
Glockenspiel																

NEWPORT 830 AND 830 PIPE AUGMENTED

SPECIFICATIONS

GREAT ORGAN (Enclosed):

- * 8' PRINCIPAL
- * 8' BOURDON
- 8' FLUTE CELESTE II
- * 8' GEMSHORN
- * 4' OCTAVE
- * 4' FLUTE
- * 2²/₃' NASARD
- * 2' SUPER OCTAVE
- * 2' WALDFLOTE
- * 1¹/₃' LARIGOT
- SESQUILATERA II
- MIXTURE IV-V
- SCHARF III-IV
- 16' TROMPETTE
- 8' MAJOR TUBA
- 8' KRUMMHORN
- HARP
- CARILLON
- TREMULANT
- 4' GREAT TO GREAT
- 16' SWELL TO GREAT
- 8' SWELL TO GREAT
- 4' SWELL TO GREAT
- 16' POSITIV TO GREAT
- 8' POSITIV TO GREAT

SWELL ORGAN (Enclosed):

- 16' BOURDON DOUX
- 8' VIOLA POMPOSA
- 8' VIOLA CELESTE II
- 8' GEDACKT
- 8' GAMBA
- 8' ECHO GAMBA
- 4' PRINCIPAL
- 4' NACHTHORN
- 2²/₃' NASARD
- 2' BLOCKFLOTE
- 1³/₅' TIERCE
- 1' SIFFLOTE
- PLEIN JEU IV-V
- 16' CONTRE TROMPETTE
- 8' FESTIVAL TRUMPET
- 8' TROMPETTE
- 8' VOX HUMANA
- 8' OBOE
- 4' CLAIRON
- TREMULANT
- 16' SWELL TO SWELL
- SWELL UNISON OFF
- 4' SWELL TO SWELL

POSITIV ORGAN: (Provision/Pipes)

- * 8' BOURDON
- * 4' PRINCIPAL
- * 4' FLUTE
- * 2²/₃' NASARD
- * 2' OCTAVE
- * 1¹/₃' QUINT
- * 1' SIFFLOTE
- PIPE TREMULANT
- POSITIV UNISON OFF
- 16' DULZIAN (GT)
- 8' KRUMMHORN (GT)

PEDAL ORGAN: (Enclosed with Great)

- 32' CONTRE PRINCIPAL
- 32' CONTRE BOURDON
- 16' PRINCIPAL
- 16' SUBBASS
- 16' VIOLONE
- 16' BOURDON DOUX (SW)
- 8' OCTAVE
- * 8' FLUTE
- * 4' NACHTHORN
- * 4' CHORALBASS
- * 2' FLUTE
- MIXTURE IV
- 32' CONTRE BOMBARDE
- 16' BOMBARDE
- 8' TROMPETTE
- 4' CLAIRON
- 8' GREAT TO PEDAL
- 4' GREAT TO PEDAL
- 8' SWELL TO PEDAL
- 4' SWELL TO PEDAL
- 8' POSITIV TO PEDAL

GENERALS:

(Electronic Version)

- SWELL MAIN OFF
- SWELL ANTIPHONAL ON
- GREAT/PEDAL MAIN OFF
- GREAT/PEDAL ANTIPHONAL ON
- MAIN CHORUS OFF
- FLUTE TREMULANT FULL
- FESTIVAL TRUMPET FF

(Pipe Version)

- GREAT/PEDAL PIPES OFF
- GREAT/PEDAL ANCILLARY ON
- MAIN OFF
- ANTIPHONAL ON
- MAIN CHORUS OFF
- FLUTE TREMULANT FULL
- FESTIVAL TRUMPET FF

OPTIONS:

- TRACKER TOUCH KEYBOARDS
- 11 BELL ZIMBELSTERN
- GLOCKENSPIEL
- HARPSICHORD
- CUSTOM FINISHES

DIMENSIONS:

- Height 50" 127 cm
- Width: 64 1/2" 163.9 cm
- Depth Without Pedalboard: 35" 88.9 cm
- Depth With Pedalboard: 53 1/4" 135.3 cm
- Console Weight: 700 LBS., 318 kg

*Indicates pipes or pipe/electronic doubling on Pipe Augmented instruments.
Specification subject to change without notice.

FCC NOTICE

This instrument uses and generates small amounts of radio frequency energy. It has been type tested and found to comply with the most stringent limits for a class A or B computing device in accordance with the specifications in Subpart J of Part 15 of the FCC Rules, which are designed to provide reasonable protection against radio and television interference in a residential installation.

If not installed and used in accordance with the technical manual, this instrument might cause interference to some radio and television reception. In the unlikely event this occurs, the user is encouraged to try to correct the interference. The measures listed below are in order of simplicity.

- A. Turn the organ off and on to see if it is really the cause of the interference.
- B. Move the line cord around (coil and uncoil it a different way), or route it differently to the power outlet, or try another outlet on a different circuit.
- C. Move the organ farther away from the radio or television receiver, or orient one or both in a different direction.
- D. Re-orient the receiver antenna, or move the antenna farther away from the organ.
- E. Your dealer or serviceman will have other remedies, depending on your specific situation.

General Terminology

These definitions apply to Rodgers electronic organs, pipe augmented organs and full pipe organs. Most definitions apply to the products of other builders, as well.

ACCESS CODE—A numeric sequence of up to eight digits that is chosen by the organist to be used as the combination to unlock one of the combination action memories for programming registrations.

ACTIVITY—An effect which in pipe organs, causes a slight random change, or a fluttering of the pure tone. In Rodgers electronic organs, unique digital circuitry causes random variation of the voices, imparting this pipe organ characteristic. The Chorus control activates this simulation of the natural interaction of pipes in a pipe organ.

AEOLIAN-SKINNER ORGAN COMPANY—The famous Boston-based organ builder, directed by G. Donald Harrison, that was responsible for many notable pipe organ installations and for the development of the "AMERICAN CLASSIC" school of organ building. In 1974, Rodgers purchased the complete scalings, records, drawings and files of this celebrated organ builder.

A.G.O.—The organization of organists, the American Guild of Organists. The A.G.O. grants proficiency degrees on the basis of annual examinations: Associate (A.A.G.O.) and Fellow (F.A.G.O.). It publishes a monthly magazine, *The American Organist*. This organization has set specifications for the standardization of organ consoles, placement and order of organ stop controls, inclusion of proper couplers, etc.

AIR PUFF—A natural speech characteristic of classically voiced pipes. It is a transitory effect that gives the initial breathiness heard from windblown pipes.

ALTERABLE CARILLON—A special programming of the Carillon stop on most Rodgers instruments that allows the organist access to three separate tunings: (1) Major-tuned bells, (2) Minor-tuned bells, and (3) Flemish-tuned bells.

ALTERNATE MIXTURE—An altered state for a mixture voice, where the microprocessor assigns a completely different mixture—higher in pitch and brighter in composition—to the mixture stop control. The alternate mixture provides the harmonic crown to the Reeds, while the normal mixture is designed for choral accompaniments.

ANCILLARY—On Rodgers Pipe Augmented Organs an electronic division that supplements stops that normally play pipes. The organist may choose to play only pipes, only electronics or both on these voices by using the Ancillary On and Pipes Off stop controls.

ANTIPHONAL—This organ division is usually placed at the opposite end of a room from the main organ. It is used for echo effects, alternating choruses, or for augmenting the main organ in congregational singing. In pipe organs the Antiphonal is a separate division. In electronic instruments it would normally include most divisions speaking through a separate amplification and speaker system.

AUDIO CHANNELS—Separate electronic networks with amplification that carry the electronic organ's voices to the speaker system. Normally three (two manual channels and a separate pedal channel) is the least separation acceptable in a classical electronic organ.

AUTOMATIC TURN-OFF—Rodgers instruments are programmed to automatically turn themselves off if left idle for more than two hours. A warning is flashed to the organist before turning off, in case the organist wishes to reset the instrument. This feature prevents the organ from being left on by mistake.

BLOWER—Electric motor-driven units that produce the air supply necessary in a pipe organ.

CELESTE—A celeste is a special musical effect designed to create the "orchestral sound" of multiple identical instruments playing at the same time, e.g., as section of violins. On pipe organs and many Rodgers organs a double set of separate and individually tunable pitch sources are used to create celeste voices. Celeste effects and celeste tunings are methods of creating celeste sound when a separate set of pitch sources are not available.

CELESTE TRANSFER—A special microprocessor controlled coupler that allows celeste voices to transfer from the Swell Organ to the Great Organ creating celeste accompaniment on the Great for solo voices on the Swell Organ.

CHEST—A Honduras Mahogany airtight box that contains electric actions to release air streams into each pipe according to the keys operated causing the pipes to sound.

CHAMBER—A room, open on one side, in which the pipes are placed. The open side is often finished with grille cloth or opens directly into the church or auditorium. Tone chambers should ideally have an interior finish of hard plaster or Masonite for proper tone dispersion.

CHIFF—The transient harmonic component that precedes the tone in a pipe voiced in the classical manner. On electronic organs, this is created by the momentary keying of a higher pitch than the pitch being played. This type of articulation is useful in playing contrapuntal music.

CHOIR ORGAN—Generally denotes the bottom keyboard of a three-manual organ. This division operates as an accompanimental division, and also provides the stops for the traditional Positiv division. It contains both Principal and Flute ensembles with full couplers available to increase its flexibility.

COAXIAL CABLE—This single wire supply line that carries the data stream from the organ console to pipe chests or Glockenspiel.

COMBINATION ACTION—Any device on an organ by which previously selected groups of stops can be brought on at will by the depressing of a button (piston) or toe stud. The means by which these combinations are retained are:

- **Pre-Set:** Combinations that do not visibly affect the stops already set up on the stop rail. These combinations are selected and wired in at the factory. This system is used on very small pipe organs and on some inexpensive electronic organs, generally not of the type suitable for church use.
- **Hold-and-Set:** The combinations are retained by depressing the desired piston and physically moving the tabs to the desired positions while holding the piston in.
- **Capture:** The combinations are set by depressing a Setter Piston (marked SET) and then depressing the piston on which the combination is to be set. Releasing both pistons then *captures* the new combination.

Rodgers Dual Memory Combination Action operates in both the Hold-and-Set and Capture modes. No preset systems are used with Rodgers organs.

CONCERT PITCH—All Rodgers organs are set at the factory at "concert pitch" (A440) where middle A is tuned to a frequency of 440 Hertz (cycles) per second. Rodgers Tuning Control allows variation from A440 to match another instrument or pipes, then instantly retunes to A440 when the selector is pushed in.

CONTINUO—A special microprocessor device that allows stops or couplers of the Pedal Organ to sound from the lowest key being played in the bass of the Great Organ. This provides pedal bass without having to use the pedal keys. It is an extremely important feature for pianists substituting on the organ while learning pedal technique.

COUPLERS—There are two basic types:

- **Inter-Manual:** Enables an entire division to be played on another keyboard, usually at three different pitch levels (e.g., 16' Swell to Great, 8' Swell to Great, 4' Swell to Great).
- **Intra-Manual:** Enables an entire division to be played against itself an octave higher or lower (e.g., 16' Great to Great, 4' Swell to Swell), or silenced altogether (e.g., Great Unison Off).

Sub couplers are at the 16' pitch level, Unison couplers at the 8' pitch and Super couplers at the 4' pitch level. A.G.O. console specifications include all of these various types of couplers. Couplers greatly increase an organ's flexibility and are particularly important in increasing their resources available on moderate size instruments.

C.P.U.—Central Processing Unit. This is the microprocessor unit that controls a Rodgers organ. Many of the unique features of a Rodgers organ and much of Rodgers' high reliability level starts with this special organ computer.

CRESCENDO—In organ terminology, a Crescendo Pedal gradually adds a pre-selected succession of stops as it is depressed. When fully depressed, the Crescendo Pedal results in a Forte organ sound. Normal crescendo sequences cut out all percussion, celeste and tremulants when they are about one-third open. Rodgers Programmable Orchestral Crescendos give organists the chance to create their own crescendo sequences which may include celestes and tremulants for Romantic uses.

DIVIDED EXPRESSION—Denotes more than one expression pedal on an organ, so that voices on one division may be brought up in volume, while voices in another division may be kept soft.

DRAWKNOB—The oldest and most traditional manner of operating the stops of the organ. A knob, with the name of the stop on it, is drawn out to turn on the stop, pushed in to turn it off. Rodgers offers a lighted drawknob system which illuminates when turned on. Lighted drawknobs provide an immediate unmistakable indication of stops currently in use and do not tend to stick or have high current draw of mechanical systems. Because there is no physical movement when lighted drawknobs are activated by the combination action, the system is not only extremely reliable, but totally silent.

ECHO ORGAN—An antiphonal organ of refined and soft tone, often used for effects of a very ethereal nature.

EN CHAMADE—On pipe organs, a loud, horizontal solo reed stop. On Rodgers electronic organs, a special exponential horn and driver system with its own amplification, which carries only the loudest reed voice.

EXPRESSION SHOE—A foot-operated pedal which, on a pipe organ, opens and closes the venetian shutters of a swellbox, controlling the volume of an organ division. On Rodgers electronic organs, the expression shoe controls not only the volume, but also the treble, giving a "caged" sound when closed. This more closely resembles a pipe organ sound that a volume-only control can.

FACADE—The front display pipes that are exposed and visible on a pipe organ.

FINISHING—The judgmental process whereby the various tonal elements of an organ are adjusted, controlled, modified, and harnessed to provide the musical personality of the instrument. Finishing must be done on-site by a person with a fine ear and a sure knowledge of music. To be finished, an instrument must be voiceable. This custom fitting of an organ to its playing environment is vital to fine organ installations. Digital tone electronic organs cannot properly provide for on-site finishing since they cannot really be voiced in any manner analogous to voicing in a pipe organ.

FLEMISH-TUNING—The cluster of partials of Flemish Carillon where the tertian is flattened instead of natural as in the English Carillon. Flemish tuning is an alternate on most Rodgers carillons.

FLUE STOPS—Non-reed stops, namely the Foundation, Flute, and String families. Flues generate their tones by the action of a sheet of wind against a sharp lip. This sets a column of air in motion within the walls of the pipe, in the manner of a toy whistle.

FLUTES—The tonal family that supports the Principals and also provides another set of tonal colors for solo and accompaniment voices. Flutes may be open or stopped. Open flutes are full length flue stops such as the Hohlfloete. Tapered flutes such as the Spitzfloete are nar-

rower at their open tops. Stopped flutes speak an octave lower than their length would suggest because of the cap or stopper which closes the top of the pipe. The Holzgedackt and Bourdon are stopped flutes.

FOOT (PITCH)—The general term used to indicate the manner in which pitch is designated in an organ. A rank of pipes, the longest of which is 8 feet, will produce the standard concert pitch on an organ keyboard; consequently, such a stop is called an 8' stop. A 16' stop speaks the octave below; a 4' stop speaks the octave above, etc.

FRACTIONAL PITCHES—Organ stops that speak other than unison or octave pitches (e.g., 5 1/3', 2 2/3', 1 3/5', 1 1/3'). These are also called Mutations, and are useful in building up synthetic solo combinations or adding color to ensembles.

FUNDAMENTAL—The portion of the musical tone that defines the pitch of the tone to the ear, usually the lowest pitched harmonic of the tone.

GENERATOR (PITCH)—An electronic oscillator which generates a fixed pitch which, in Rodgers designs, is used as the pitch reference for a single note on the instrument. Divider oscillators are a shared or unified pitch generation system that, while less expensive to build, create problems in tonal versatility and sound. The single master clock (oscillator) system is the least expensive pitch generation system, but this shortcut results in poor organ ensemble and unauthentic celestes. In Rodgers organs, single master clock units are used only for piano/harpsichord voices. All actual organ voices use individual oscillators for pitch generation.

GENERATOR (TONE)—The distinct voicing network that shapes one of the waveforms generated by the pitch generator. Thus, a single pitch generator may generate different waveforms which are used to make many different voices in the organ. On Rodgers organs, the output of the pitch generator is fed into individual note voicing circuits. Each pitch has its own individual waveform with the volume of each note individually set for perfect scaling. Divider oscillator and master clock (oscillator) systems typically use only one waveshape per voice and all pitches of a voice are created from the exact same waveform. This results in the unauthentic bass and treble found on these instruments.

GLOCKENSPIEL—An authentic struck metal bar percussion voice that can provide an effective tonal accent. It is a separate device designed to be located remotely from the console.

GREAT ORGAN—The most important division of the organ. Other manual divisions usually couple to it with sub, unison, and super couplers. It is characterized by complete development of the Principal Chorus, the sound which is unique to the organ. It is the lower manual on two-manual organs, the middle manual on three-manual instruments.

HARMONIC—Any one of the many pitch partials that give a musical tone its primary quality is called a harmonic. The relative intensity of these harmonics, conversely, determines the tone quality of a given sound.

HEADPHONE JACK—A special jack for use with stereo headphones that, when actuated, shuts off organ speakers and pipes to allow silent practice without disturbing others.

KEYING—The process by which a pipe or tone generator is made to speak and cut off. On Rodgers electronic organs, individual voice keyers include separate attack and release controls by note. Digital recall systems and overall filter systems are unified in their attack and decay, typically using one overall system for all voices rather than the individual attack and decay by note of each voice found on the Rodgers.

KEYER—The circuitry which blocks or transmits an audio signal corresponding to one note of a scale. A keyer circuit may modify the input waveform and impart certain attack and decay characteristics. A keyer may be identified by type of waveform it transmits, or actual voice. If a device analogous to a rank of pipes exists within the electronic organ, it is the keyer. However, state-of-the-art electronics allow use of a single keyer note at various volume and filter levels which effectively allows one keyer to give the effect of many ranks of pipes. This is not true in organs creating voices from single digital waveforms or single overall voice filters.

LED—Light Emitting Diode, used to indicate on or off for organ voices on Rodgers LED stop tablet consoles. LEDs have lower current drain and are longer lasting than incandescent lamps.

MAIN ORGAN—The body of the instrument, usually containing the Choir, Great, Swell, and Pedal divisions. Echo divisions are built elsewhere in the auditorium.

MANUALS—Keyboards played with the hands.

MIXTURE—A compound stop consisting of two or more ranks of high-pitched unison and fifth sounding principal tone. These stops are used to reinforce the natural upper harmonics of a full ensemble, and add brilliance and definition. Alternate mixtures designed for use with reed choruses in playing great organ literature are standard on most Rodgers organs.

MUTATION—See "Fractional Pitches"

NATURALS—The white keys on the manuals and maple keys on the pedalboard. On some instruments, manual keys are "reversed" in color with a dark grenadilla wood used for the naturals.

OSCILLATOR—An electronic device that produces a sustained alternating impulse of electricity at a fixed pitch. The oscillator provides the pitch references for each note of the instrument. Rodgers oscillators are unaffected by temperature and humidity, with the highest stability in the industry, virtually eliminating the need for periodic organ tunings. Oscillators may be individual and tunable as on Rodgers electronic organs or unified without any individual adjustment available as on a master clock (oscillator) systems where one or a few oscillators are shared to create all pitches in the instrument. Rodgers does not use master clock systems except in its piano/harpsichord circuitry where a double system is used.

PEDAL—The organ division played by the feet. This division provides the bass line and foundation for the manual registrations, and has its own solo stops as well.

PEDALBOARD—The Pedal keyboard (clavier). The A.G.O. specifies a concave and radiating pedalboard of 32 notes.

PERCUSSIONS—Typical percussion voices on a classical organ include the Harp, Carillon and Chimes and often, on electronic organs, the Harpsichord and Piano. The Piano is used to provide the percussive sounds often called for in contemporary organ literature, while the Harpsichord is useful for a more traditional approach to percussive organ sound.

PIPE—The metal or wood single note windblown tone producing device that is the basis for pipe organ sound. The two basic types are the flue pipe and the reed pipe. Each pipe is its own pitch generator, tone generator, and audio system.

PIPE AUGMENTATION—The combining of windblown pipes with electronic voices to create a combination instrument with the main principal and flute choruses coming from real pipes and supplementary voices being generated electronically. Most Rodgers organs are programmed for the addition of pipes on installation or at a future date.

PISTONS—Finger operated push-button switches that access the organ's memory in the combination action. They are located on the piston rails below each keyboard. These pistons are also used to access special microprocessor test and voicing programs built into each Rodgers console.

PRINCIPALS—The tonal family unique to the organ that has no orchestral counterpart. The Principal Chorus (8' 4' 2') is the base to which all other organ voices relate. Also sometimes called the Diapason. Rodgers principals are the most authentic and pipe-like of any electronic manufacturer.

PRESETS—See "Combination Action," number 1. Preset systems are no longer used on Rodgers organs.

RANK—In pipe terminology, a rank is defined as a set of pipes possessing a uniform tone quality, one pipe for each note on the keyboard. A rank, in electronic organs, is nearly impossible to define, due to the multiple sounds available from a single tone generator.

REED—One of the two classes of organ stops. A reed pipe generates its tone by the vibration of a brass tongue against a rectangular opening, the resulting tone being given security of pitch and timbre by a resonator placed on the reed assembly. Reeds are the most colorful organ family. They are used in choruses and as solo stops.

REGISTRATION—Choosing and combining stops to play a given piece of music. The art of combining the sounds of an organ in a given room to properly enhance the music being played.

REGULATION—A voicing procedure in which each note of each stop is adjusted to assure its proper relation to the other notes of the stop and that stop's relation to the rest of the organ.

REGULATOR—An air regulation device used to maintain even pressure within the pipe chest. This may be a separate device located between the blower and chest, or built into the chest itself (the Schwimmer system).

REVERBERATION—The ability of a room to sustain a sound. This quality is to be distinguished from an Echo, which is an undesirable repeated "bounce" between two parallel surfaces. Reverberation is generally measured in terms of the number of seconds required for a sound to die away completely.

REVERSIBLE ACTION—A device applied to certain critical couplers or stops on an organ that allows them to be drawn or retired through the operation of a piston or toe stud. Pressing the piston once turns on the device; pressing the piston again reverses the action. Reversibles are generally applied to the following: 8' Great to Pedal, 8' Swell to Pedal, 8' Swell to Great, 32' Stops.

SCALING—The modification of the harmonic structure throughout the compass of an individual voice. Rodgers electronic organ voices are scaled in imitation of organ pipes. Uniform harmonic structures, as in overall filter systems or digital tone systems, are less expensive to build, but are lifeless and musically uninteresting in comparison to a properly scaled voice.

SCHWIMMER—A built-in air regulator system used in many Rodgers pipe chests.

SET BUTTON—The piston that is pressed before pressing the piston on which a combination is to be set. This applies only to Capture Action.

SHARPS—The typically black keys of manuals and pedalboards. On Rodgers wooden-core keyboards, manual sharps are made of real ebony or rosewood (a nice variation to the more common black).

SOLO COUPLER—A special Rodgers microprocessor device that allows any stop or coupler of the Swell organ to sound from the highest key played on the Great manual. Thus, a solo and accompaniment can be played from the same manual. The Solo Coupler can be used with the Continuo to give the effect of two manuals and pedal all played from the Great keyboard.

SOSTENUTO—The Sostenuito allows a chord to be sustained without holding the keys down. Its use is called for frequently in piano transcriptions of orchestral accompaniments for choral works. It is also useful to sustain a chord when making registration changes or changing pages of music.

STOP—Strictly speaking, a stop is a chromatic series of tones of like tone quality, one tone for each key on the keyboard. In practice, a distinction is made between **speaking stops**

(defined above), and **non-speaking stops** (couplers, tremulants, antiphonal controls, expression couplers, etc.).

STOP TABLET—The hand engraved plastic tongue that identifies a stop (voice) and actuates that voice when turned on. Most Rodgers stop tablets use LEDs for an instantaneous indication of voices on. Totally silent when actuated by a memory piston, Rodgers LED stop tablets offer improved reliability over older, mechanical action designs. On Rodgers LED stop tablet consoles, the stop tablets are arranged in two rows with the Swell organ the first division on the top row and the Pedal organ first on the lower row, in line with A.G.O. console specifications.

STRAIGHT ORGAN—A pipe organ term for an organ that has a separate individual pipe for each note of each available voice on the instrument. Such a design can often be expanded musically by judicious unification, which increases the versatility of the instrument. No electronic organs can be properly termed "straight organs" since all involve the use of a limited number of pitch generators, tone generators and audio channels to create the effect of pipe organs with many more pitch, tone and sound sources.

STRINGS—These are smaller scaled principal stops that are decreased in volume and have brighter timbre. Strings are useful as accompanimental stops.

SUSTAIN—A device that permits a more gradual (decay) of the tone of a sound. Most commonly affecting only Flute, Harp, and Carillon stops.

SWELL ORGAN—The more romantic division of the organ, named for the fact that it is enclosed in a box with shutters on the front, giving it the ability to "swell" in volume. The Swell contains Solo and Chorus Reeds, as well as the Strings and Celeste stops and full intramanual couplers. It is normally the top manual on two or three manual organs.

SYNTHETIC REED—Using mutation pitches on the organ, one can often synthesize reed sounds that aren't found on that particular instrument. For instance, Flutes at 8', 2²/₃', and 1³/₅', drawn together and played as a solo melody will make a fairly respectable Clarinet. A 4' and 2²/₃' Flute (or an 8' String and a 2²/₃' Flute) makes a good solo Oboe.

TEST FUNCTIONS—Rodgers instruments include several microprocessor self-test programs that may be used as an aid in trouble-shooting organ problems. In addition, the organ test mode also includes special chime and level adjustment programs used in voicing the instrument.

TOE STUDS—Foot operated chrome switches that duplicate the memory pistons and are also used for the Tutti and reversibles.

TRANSPOSER—A device that raises or lowers the pitch of the organ in semitones (half-steps) allowing the organ to sound at a different pitch than it is played. Transposers should return to normal pitch when the memory cancel is used or the organ is shut off. In Rodgers Pipe Augmented organs, both the pipes and the electronics transpose.

TRACKER TOUCH—A mechanism applied to the keyboards of the modern organ, which simulates the top-resistant type of touch characteristic of the tracker-action pipe organ. This touch, available as an option on the Rodgers, promotes clean, articulate playing.

TREMULANT—A rhythmic undulation in pitch and/or volume that is used as a special effect. Individual divisions usually have their own tremulants with a Flute Tremulant Full used to create a Gospel sound from the flute stops.

TUNING CONTROL—A special control that allows Rodgers organs to be quickly tuned to a piano or other instrument not at "concert pitch." Pushing the control knob in quickly retunes the organ to A440. The tuning control does not affect the pipes on Rodgers Pipe Augmented instruments.

TUTTI—A Reversible Action which, when operated, instantly brings on Full Organ. When engaged again, the organ reverts back to its original registration, since this action does not affect the stop tabs. Rodgers' Tutti are programmable by one organist.

TWEETER—The high-frequency reproducing unit of a High-Fidelity speaker; essential for clarity and brilliance in organ sound.

UNIFICATION—The switching process whereby a set of pipes or tone generators can be played at another pitch level (16', 8', 4', 2²/₃', etc.) and/or another division of the organ to increase the instrument's versatility. Unification in an electronic organ is often combined with individual level controls, filters, etc., eliminating the missing notes and lack of tonal variation that are negatives to pipe organ unification. All electronic organs are unified. Pitch generators and tone generators are widely shared in all electronic organ designs with master clocks and a limited number of wave shapes unified to create electronic organs often claiming equivalency to relatively large pipe organs.

VAN ZOEREN, INC.—A pipe organ firm headed by Allan Van Zoeren, a noted pipe organ finisher and tonal expert. In 1984, CBS purchased Van Zoeren, Inc. as part of an expansion of Rodgers pipe organ building capabilities.

VOICING—The complex process following the testing of an organ, in which every stop in the instrument is carefully scaled and graded for correct tone quality. This also involves making sure that each stop adds into the ensemble, without asserting itself unduly. A good deal of this is done at the factory, but it culminates in the finishing process at the installation site. Digital tone organ systems are incapable of on-site voicing by individual notes or voices. Overall filter per voice organ systems may or may not include voicing by voice, but do not allow for adjustment of individual notes.

WOOFER—The large cone-type loudspeakers responsible for the production of the powerful low-frequency tones of an organ. For the profound 32' tones, Rodgers uses specially designed twin 15" woofers in a ported cabinet or the 30" super woofer.

ZIMBELSTERN—A mechanical struck-bell device often located high up in the facade of European organs. Rodgers Zimbelstern uses eleven high-pitched bells struck by strategically placed clappers to produce a continuous series of high-pitched bell sounds, which augment the tonal color of the organ.

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