Renaissance™

by Allen

Theatre Organs

GW4 – 4 Manual
GW319EX – 3 Manual
GW319 – 3 Manual
R311 – 3 Manual
R211 – 2 Manual

AOC P/N 033-0121 8/99

ALLEN ORGAN COMPANY

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

In 1939, Allen built and marketed the world's first purely electronic oscillator organ. The tone generators for this first instrument used two hundred forty-four vacuum tubes, contained about five thousand components, and weighed nearly three hundred pounds. Even with all this equipment, the specification included relatively few stops. By 1959, Allen had replaced vacuum tubes in the oscillator organs with transistors. Thousands of transistorized instruments were built, including some of the largest, most sophisticated oscillator organs.

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

Renaissance™ organs are the product of years of refinement in digital sound and control techniques by Allen engineers. It represents the apex of computer technology applied to exacting musical tasks. The result is an instrument of remarkably advanced tone quality and performance.

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

Familiarize yourself with the instrument by reading through this booklet. We call your attention particularly to sections on Transposer, and MIDI Guide, since these elements are important to realizing the full potential of the instrument.

The sections on stop description and organ registration are intended for immediate use as well as for future reference. Because the Allen Digital Computer Organ offers limitless tonal possibilities, plus authentic tone quality, these subjects can now be more readily explored than ever before. In addition to this manual you should have also received the Renaissance Console Controller™ and MIDI Guide, (AOC P/N 033-099) as it contains further information on the operation of your console.

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Appendix

DESCRIPTION OF STOPS

PITCH FOOTAGE

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

Stops of 32’, 16’, 8’, 4’, 2’, and 1’ pitch all have octave relationships, that is, these “even numbered” stops all sound octaves of whatever key is depressed. Pitches other than octaves are also used in organ playing. Their footage number always contains a fraction, and they are referred to as mutations. Because they introduce unusual pitch relationships with respect to the fundamental tone, they are most effective when combined with other stops, and are used either in solo passages or in small ensembles.

TONAL FAMILIES

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

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

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

Your Renaissance™ Allen Theatre Organ provides authentic examples of various types of voices as listed above. Some of these are protected by copyrights owned by the Allen Organ Company. The voices stored in memory are covered by United States copyright laws, pursuant to Title 17 of the United States Code, Section 101 et seq.

UNIFICATION

In theatre organs, and occasionally in classical organs, the system of “unification” was used. This allowed the same “rank” of pipes to be used at multiple pitches and on several manuals. Unification was the system theatre organs used to have large numbers of stops on the console with relatively few ranks of pipes as compared to a classical organ. For example, a Tibia Clausa rank may be drawn at 16’, 8’, 5 1/3’, 4’, 2 2/3’, 2’, and 1 3/5’ on a given manual and then

still have some or all of those pitches duplicated on other manuals. In most classical organs, one rank would have one stop key on the console; however, in a theatre organ one rank could have many stop keys controlling it. Allen Renaissance™ Theatre Organs are unified in the authentic theatre organ style.

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

Tuba Mirabilis	Very powerful Tuba sound. 16' stop usually called Bombarde.
English Post Horn	Bright, brassy reed stop. Sometimes named "Post Horn" or "English Horn" on a theatre organ.
Brass Trumpet	Useful as a smooth solo voice or chorus reed.
Tuba Horn	A mellow solo reed that is also useful in providing ensemble development without being overpowering. Notice how the bottom octave of the 16' Ophicleide becomes more powerful as you approach bottom 'C.'
'D' Trumpet	Very imitative trumpet stop found on the style 'D' Wurlitzer theatre pipe organ.
Open Diapason	Foundation stop that adds fullness to the ensemble. The 16' stop is usually called "Diaphone" because the bottom octave of the 16' is a metal Diaphone sound. This lends power and a good pitch sense to the pedal.
Horn Diapason	Diapason sound that tends to have a slight string quality. Nice accompaniment voice.
Horn Diapason Celeste	Matching celeste rank for the Horn Diapason.
Tibia Clausa	The "foundation" rank of the theatre organ. This rank, coupled with its distinctive tremulant, is one of the main ingredients of a theatre organ.
Solo Tibia Clausa	A larger, more harmonic version of the above. In the GW4, there are two Solo Tibias. George Wright had three tibias in his Hollywood Philharmonic Recording organ: Wurlitzer Tibias in the solo and main with a Robert Morton Tibia in the center. The Robert Morton Tibia is Solo Tibia #2 and comes out of the percussion speakers (center).
Clarinet	Imitative solo reed that can also be used as an ensemble stop.

Saxophone	More developed version of the Vox Humana that works well when used in combination with Tibia stops.
Solo Violin	Imitative string in the solo chamber. These were special strings to George Wright. They were very early Wurlitzer, and very bright.
Solo Violin Celeste	Matching celeste for the Solo Violin.
Salicional	A milder string in the main chamber.
Salicional Celeste	Matching celeste for the Salicional.
Gamba	An E. M. Skinner Gamba.
Gamba Celeste	Matching Celeste.
Violins III (GW319)	Three string tones slightly detuned from each other, that create a shimmering quality in the sound. In the GW319, the two main chamber strings are the Salicionals from the Hollywood Philharmonic Organ, and the third string (Solo chamber) is his Solo Violin.
Orchestral Oboe	Solo reed with a pungent nasal timbre somewhat imitative of its orchestral counterpart.
Kinura	Bright, buzzy solo reed that can be used for comic effects.
Krumet	Another “buzzy” reed many times used as an alternative to the Orchestral Oboe.
Musette	Yet another variation of the “bee-in-the-bottle” buzzy reed sound.
Oboe Horn	Reed stop with tone quality sounding with both the oboe and horn qualities.
Quintadena	Stopped metal flute tone characterized by an extremely strong third harmonic that sounds an octave and a fifth above the note played. Very good accompaniment stop when used with the Oboe Horn, Concert Flute, and/or Dolces.
Dolce	Soft “hybrid” stop – part string and part diapason sounding. Very effective for the softest combinations. (E. M. Skinner)
Dolce Celeste	The matching celeste for the Dolce.

Vox Humana	Voice originally intended to imitate the human singing voice but really sound more like a goat! Used with the Tibia Clausa for the traditional theatre organ sound.
Solo Vox Humana	The Solo Vox Humana is a “brighter” more harmonic version.
Concert Flute	Typical wood open flute of the 1920’s.
Lieblich Flute	This particular Lieblich Flute is the redwood (Murray Harris) Lieblich Flute from the Hollywood Philharmonic Organ.
Pedal Tibia Clausa Pizz.	When a pedal is held down, this tibia “plucks” the pedal notes. Used to emphasize the 8’ pedal line in jazzy numbers.
Pedal Violone 32’-16’	Independent pedal rank of rich string tone.

Traps and Percussions are imitative of their orchestral counterparts.

COUPLERS

Couplers couple one manual to another or in the case of the GW4 and GW319 couplers may also couple within a manual at octave related pitches. This enlarges the use of the organ.

GENERAL CONTROLS

(Some controls may not pertain to your particular organ)

Acc. Traps to Pedal	Couples the Accompaniment traps to pedal (GW319-R311)
Acc. Traps 2nd Touch	Moves the Accompaniment traps from Accompaniment keying to Accompaniment 2nd Touch keying (GW4-GW319-R311).
Acc. Violins > Dolces	Changes the Accompaniment Violins to Dolces (GW319-R311)
Chrysoglott > Wood Harp	Changes the Chrysoglott into a wood harp (GW311)
Chrysoglott > Vibraharp	Changes the Chrysoglott into a metal bar harp with a stronger strike tone (GW319)
Wood Harp Re-it	Adds Reiteration to all Wood Harp stops.
Percussion Unexpressed	Takes most percussion off expression (GW319)
Solo String(s) Off	Turns off solo chamber rank(s) of the multi-rank string celeste stops (GW4-GW319).
Melody Coupler	When used with an appropriate solo stop, such as a Solo reed, this feature will automatically key the highest note played on the Great keyboard allowing accentuation of the melody.
Master Expression	Couples all expressions to Solo expression.

MIDI

MIDI couplers are available on all manuals. These couplers open a MIDI channel to the specific division.

DIVISION	MIDI Channel
Great (Solo on R211)	1
Accompaniment	2
Pedal	3
Orchestral (GW4), Solo (GW319-R311)	4
Accompaniment 2nd Touch	5
Solo (GW4 only)	6
Great 2nd Touch	7
General Pistons	8
Trem Pistons (GW4 only)	9
Traps Pistons	10

TREMULANTS

Your new Renaissance™ Theatre organ has the most advanced authentic sounding tremulant system in the world today. In addition to digitally sampling the individual ranks without tremulant, Allen also sampled individual ranks with tremulants on. When more than one rank is on the same tremulant system in a pipe organ the tremulant sound that results from the playing of the pipes is not identical from rank to rank. Each rank "reacts" to the varying supply of wind (tremulant) differently. With this in mind, Allen sampled each rank of the Renaissance™ Theatre organs with tremulant "on" to reproduce the authentic tremulant sound you hear. As a result, even stops that are "ganged" together on one tremulant stop or tremulant motor will have a different tremulant sound. This Sampled Waveform Tremulant™ technology contributes to the huge ensemble sound of these Renaissance™ Organs.

TREMULANT CONTROLS

For a listing of all tremulant stop controls and tremulant motor numbers please turn to Appendix ii starting on page 18 at the end of this booklet.

EXPRESSION PEDALS

The GW4 has separate expression pedals for Percussion, Main, and Solo. The GW319 and R311 have Main and Solo expressions while the R211 has one overall expression shoe. The audio systems in your installation should be set up with the Main on the left and Solo on the right if possible. The percussion channels (GW4) should be in the center.

CRESCENDO PEDAL

The expression shoes change the volume of what stops are engaged; however, the Crescendo pedal adds stops as you depress the pedal. The Crescendo pedal on the GW4 and the GW319 has two "settings." In its primary setting, the crescendo builds the organ to a moderately loud combination. The "B" Crescendo setting (engaged by pressing the Crescendo "B" piston) is set as a theatre organ type "stab." This is used as an accent. The strings come on first followed by the brassy reed stops. Crescendo B is a "secondary" Crescendo that can be programmed by the organist or Allen representative. Refer to the Renaissance Console Controller™ and MIDI Guide, (AOC P/N 033-099) Section B-3, Page 14, to change the settings of this second Crescendo.

SECOND TOUCH

(not available on the R211)

A division or divisions of stops and couplers that sound by depressing the keys on the Accompaniment or Great(GW319 and GW4 only) manuals all the way down. This device is useful for counter-melodies or accents and can be found only on Theatre organs.

CAPTURE COMBINATION ACTION

Your Renaissance™ organ is equipped with an Allen Multi Memory Capture Action, which offers the ultimate in registration control and convenience. The organist can set combinations on any memory and then lock the memory (except memory 1 cannot be locked). This prevents unwanted tampering with capture combinations. See the Renaissance Console Controller™ instruction booklet for information regarding the setting of pistons. A group of "default" pistons is set at the factory on the last memory. You may re-program these, but they are a convenient place to start building your own sounds and combinations.

TRAPS (TI&T2)

The GW4, GW319 and R311 are equipped with two pistons known as Traps (TI&T2) and they are used to register any non-tonal percussion stop combination such as Bass Drum, Tom-Tom, and Snare Drum. These may be reconfigured to affect other stops if desired – see the Console Controller™ guide for instructions.

THINGS TO REMEMBER

The "R Piston, when activated, will recall the last combination set prior to using any general or divisional piston. General pistons affect all stops. Solo, Accompaniment, Great, Pedal, etc. pistons affect only stops in their division.

If your organ has separate pedal pistons, they are available only on toe studs. All pistons operate independently from each other. The capture action is not fully operable until approximately six seconds after the organ is turned on. Further information on setting, changing, and reconfiguration of pistons will be found in the Console Controller™ Manual.

TRANSPOSER

Operation of the Transposer is controlled by the Transposer knob located near the Console Controller™. Neutral (no transposition) position or the knob is marked "●." To shift the music to a higher key, move the knob counter-clockwise one or more half-steps. The key can be raised a maximum of five half-steps, in half-step increments. To shift to a lower key, move the Transposer knob clockwise from "●." The key can be lowered a total of seven half-steps.

A RED INDICATOR LIGHT COMES ON WHENEVER THE TRANSPOSER KNOB IS MOVED FROM THE "●" POSITION.

SOUND EFFECT PISTONS

The following are Sound Effect Toe Pistons. In addition to playing their respective sounds, these pistons output on MIDI Channel 10 (General MIDI Drum sets) with a particular key(note).
NOTE: If individual stop voicing is done, these sound effects may not play until the organ is switched off and back on again.

C#2 Persian Cymbal
E2 Gong
A4 Triangle
B3 Birdwhistle
C4 Train Whistle

ARTISTIC REGISTRATION

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

A solo combination is one in which a melody is played on one keyboard, the accompaniment on another keyboard, and the pedal often provides a light bass line. Almost any stop or combination of stops will sound good as a solo voice. A contrasting tone quality should be chosen for the accompaniment, so that the accompaniment is softer than the solo voice. The Pedal stops must provide a foundation for the sound without covering it. Caution is advised when the solo part involves chords, since some stops do not blend well in close harmony. Avoid fractionally pitched (mutated) stops and pungent sounding reeds unless they produce the effect you are seeking.

Most 8' reed stops make interesting solo voices. The addition of a 4' Tibia or a Tibia mutation (e.g., Twelfth or Tierce) to a light reed such as the Clarinet or Orchestral Oboe colors the sound further and increases its volume slightly. Adding an 8' Tibia to a reed will add body to the sound.

In creating registrations of your own, remember these three simple rules: (1) Seek tonal contrast between solo and accompaniment; (2) Be sure the solo is louder than the accompaniment; (3) Choose a solo whose character is appropriate to the specific piece.

ENSEMBLE REGISTRATIONS

Ensemble registrations involve groups of stops that are played together, usually, but not always, with both hands on one keyboard. They are characterized by compatibility of tone, clarity, and occasionally power. Volumes have been written on the subject of ensemble registration. Following is a summary of the major points.

Ensembles are created by combining stops. Two factors are always to be considered: tone quality and pitch. Ensembles begin with a few stops at the 8' and/or 4' pitch and expand "outward" in pitch as they build up.

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

> The Tibia Clausa chorus is the most fully developed with representation in various divisions of the organ and at every pitch from 16' (Tibia) through 1' (Fife). Lighter stops can be added to the basic 8' and 4' Tibia combinations and then the Diapasons, Strings and Tubas can be added to fill out an ensemble registration.
>
> The Reed stops include those reed tones designed to be used in the ensemble buildup. Not all reed voices are ensemble tones. An Oboe, for example, is usually a solo stop. The various Trumpets, Horns, and Vox Humanas are usually ensemble voices that add brilliance, power, and incisiveness to the sound. If you have questions as to whether a specific reed is a solo or ensemble stop, refer to the stop glossary in the preceding section.

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

a coupler. Many times in more rhythmic pieces you will want to have a predominantly 8' sound in the pedal.

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

Theatre Organ Registration:

Strony, Walter. *Theatre Organ Registration* $ 35.00
P. O. Box 3532, Carefree, AZ 85377-3532

Classical/General Organ Registration:

Audsley, George Ashdown. Organ Stops and their Artistic Registration.
Hialeah, FL: C.P.P. Belwin, 1985.

Irwin, Stevens. Dictionary of Pipe Organ Stops. 2nd ed.
New York: Macmillan Books, 1983.

Beginning Organist's Video:

Cherrington, Dr. Sally. *A Church Organist's Primer. Volumes I, II, & III.*
Allen Organ Company. Video Materials, 1996/1997.
AOC P.N: 031-0047, 031-0065, 031-0112.

INSTALLATION, VOICING, and CARE

OF THE ORGAN

INSTALLATION

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

Bass frequency projection is strongly affected by tone cabinet location. Although none of the tone cabinets should ever be moved once the installation is completed, extra care should be exercised to prevent inadvertent movement of the bass tone cabinets. When chambers have been utilized to house tone cabinets, make sure they are not later used for storage closets. Placing sound absorbent materials will only damage the organ's sound quality.

VOICING

The Renaissance™ organ presents unprecedented accuracy in the scaling and voicing of each note of every stop. Should your needs be such that these parameters need to be changed, your Allen Organ representative is able to help make these changes. This musical breakthrough is an inherent part of the engineering design of the instrument. Final adjustments in scaling and voicing involve procedures that are best left to an expert. These adjustments are normally a part of installation and, once done, should not require changes. If the instrument is moved to a new location or major changes are made to the acoustical properties of room the organ resides in, the instrument may need to be tonally finished again.

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

General voicing notes on the individual models is available at the end of this booklet in Appendix i page 15.

VIRTUAL ACOUSTICS SETTINGS

Virtual Acoustics™ provides the spatial ambiance of reverberant rooms of various sizes. Although most effective in poor (non-reverberant) acoustic environments, it enhances the sound even in optimal acoustic settings.

There are 21 selectable reverb pallets. One of these, the DEFAULT setting, is not adjustable. The other 20 pallets are selectable and adjustable. They allow an organist to modify the sound of the organ to accommodate a room's changing acoustical properties. For example, a room's reverberation characteristics change as the number of people present changes. Differences in reverberation time also occur when a room's windows are opened or closed.

The rocker switch labeled VIRTUAL ACOUSTICS™ in the Console Controller™ drawer must be ON to hear the selected reverb. The amount of reverb can be changed on the 20 adjustable selections. The selected reverb level, measured in dB (decibels), is shown in the Console Controller™ window. The range of control is from Ø dB to -3Ø dB. Minus 3Ø dB is the least amount of reverb; Ø dB is the most reverb available.

When you change the Virtual Acoustics™ setting, you must turn the rocker switch OFF and ON again for the new setting to take effect.

BATTERY BACKUP SYSTEM:

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

Power Failure
REPLACE BATTERY !

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

CLEANING AND POLISHING

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

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

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

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

USA ONLY

CAUTION

Do not plug the instrument into any current source other than 110 to 120 volts, 50/60 Hertz alternating current (AC). A verified grounded outlet is essential to proper operation and protection of the instrument. Proper polarity should be checked with an AC circuit analyzer before connecting the organ.

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

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

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

INTERNATIONAL ONLY

CAUTION

Do not plug the instrument into any current source other than that stated by the selling dealer. Proper polarity should be checked with an AC circuit analyzer before connecting the organ.

Do not change the cable plug or remove the ground pin (if applicable).

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

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

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

Reorient the receiving antenna. Relocate the receiver with respect to the organ's location. Plug the organ into a different electrical outlet, so that the organ and receiver are on different AC branch circuits.

If necessary, the Allen Organ dealer or an experienced radio technician should be consulted for additional suggestions.

CE mark shows compliance with the EMC Directive

George Wright Signature Series Four Manual Audio Chart

A1	A2	A3	A4**	A5	A6	A7	A8**	B1	B2	B3	B4	B5	B6
Solo HE-1	Solo HE-1	Solo	Solo	Main	Main	Main HE-1	Main HE-1	Solo	Solo	Main	Main	Percussion	Percussion
Tuba Mirab	Post Horn	Kinura	Solo Tibia	Main Tibia	Oboe Horn	Tuba Horn	32-16 Viol	Brass Trump	Solo Vox	Clarinet	Open Diap	Found Tibia	Ped Tiba Pizz
Saxophone	Orch Oboe	Horn Diap	Krumet	Musette	Erzahler	Gamba	C. Flute	Solo Viol Cel	Hrn Diap Cel	Salicional	Main Vox	Wood Harp	Piano
			Solo Violin	Erzahler Cel	Salicional Cel		Gamba Cel	Quintadena	Lieb Flute	Chrysoglott		Glockenspiel	Metal Harp
							"D" Trumpet					Chimes	Xylophone
1 HE-1	1 HE-1	1 HC-15	1 HC-15	1 HC-15	1 HC-15	1 HE-1	1 HE-1	1 HC-15	1 HC-15	1 HC-15	1 HC-15	1 HC-15	1 HC-15

The audio channels in the George Wright Signature Series 4 Manual organ are set up in pairs; i.e., A1-A2, A3-A4, A5-A6, etc. The organ is set up with the "every other note" type of speaker configuration. Each rank speaks out of a pair (two speakers) with C1 at the 8' pitch residing in the listed channel while C#1 is in the other side of the pair. For example the Tuba Mirabilis is listed in channel A1. This means that the C1 of the 8' Tuba Mirabilis comes from the A1 speaker, but C#1 comes from the A2 speaker. Likewise, the Post Horn listed in A2 starts with C1 at 8' in channel A2 and C#1 in channel A1. Most stops follow this plan except for some percussions in channels B5-B6.

Using smaller speakers: In a home installation where less power is required there are 6 channels that may use HC-13's instead of HC-15's (do not use HC-9's). Channels A5, A6, B1, B2, B5, and B6. If you *really need some extra space, channels A4 and B3 can also be HC-13's; but, you may need to spend extra time and care with the voicing. The speaker total is then 4 HE-1's; 2 HC-15's; 8 HC-13's; and 2 HC-20's.*

DO NOT COMBINE AUDIO OUTPUT CHANNELS!! The sound of this organ, especially the tremulants, depends on separate channels. Combining channels will result in phase cancellation or "space age synth" type effects!

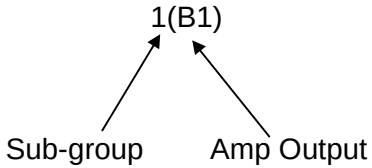
George Wright Signature Series GW319 & GW319EX Audio Chart

CAGE "A"

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Post Horn	*Post Horn*	**Orch Oboe**	*Orch Oboe*	*Tibia*	**Tibia**	Chrysoglott	Glock	**Open Diap**	*Open Diap*	**Sal Cel**	*Sal Cel*	*Krumet*	**Krumet**	**Piano**	PersianCym
Quintadena	*Quintadena*	*Oboe Hrn*	**Oboe Hrn**			Vibraharp						*ConcertFlute*	**Concert**Flute		
1(B1)	2(B2)	1(B1)	2(B2)	1(B1)	2(B2)	5(A3)	6(A4)	3(A3)	4(A4)	3(A3)	4(A4)	3(A3)	4(A4)	5(A3)	6(A4)

CAGE "B"

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Tuba Horn	**Tuba Horn**	*Salicional*	**Salicional**	**Clarinet**	*Clarinet*	Wood Harp		*BrTrump*	**BrTrump**	**Vox Hum**	*Vox Hum*	*Saxophone*	Saxophone	Xylo	SnDrum
D Trumpet	*D Trumpet*		Contra Violone					**Solo Viol**	*Solo Viol*					Bass Drum	TapCymb
		Lieb Flute	**Lieb Flute**											WoodBlock	Castanets
		Chimes	Chimes											Tambourine	Tom-Tom
3(B3)	4(B4)	3(B3)	4(B4)	3(B3)	4(B4)	5(B1)	6(B2)	1(B1)	2(B2)	1(B1)	2(B2)	1(B1)	2(B2)	5(B1)	6(B2)



The audio channels in the George Wright Signature Series 319 three manual organ are set up in pairs; i.e., A3-A4, B1-B2, and B3-B4. The organ is set up with the "every other note" type of speaker configuration for most stops. Each rank speaks out of a pair (two speakers) with C1 at the 8' pitch residing in the primary channel while C#1 is in the secondary channel (*Italics*). For example the Tuba Horn is listed as having a primary channel of B4. This means that the C1 of the 8' Tuba Horn comes from the B4 speaker, but C#1 comes from the B3 speaker. Likewise, the Post Horn starts with C1 at 8' in channel B1 and C#1 in channel B2.

To further enhance the “in theatre” effect of this organ, each sub-group has a primary channel (which is listed above as Amp Output), but each sub-group also is fed to at least two other channels delayed and at a slightly lower volume level. This gives the effect of distance between the “Main” and “Solo” chambers. This effect is most noticeable on percussion sounds such as the Tap Cymbal, Snare Drum, and Piano. This effect is in addition to Virtual Acoustics™ and is not controlled by the Virtual Acoustics™ switch.

DO NOT COMBINE AUDIO OUTPUT CHANNELS!! The sound of this organ, especially the tremulants, depends on separate channels. Combining channels will result in phase cancellation or "space age synth" type effects!

Left Side (Main): Channel A3 - HC-16; Channel A4 - HC-16; Channel B3 - HE-1; Channel B4J- HE-1
Right Side (Solo): Channel B1 - HE-1; Channel B2 - HE-1; Channel B4Y - B-20

R311 & R211 Audio Charts

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Tibia Clausa	Tibia Clausa	Post Horn	Post Horn	Tuba Horn	Tuba Horn	Glockenspiel	Wood Harp	C. Flute	C. Flute	Open Diap	Open Diap	Violin	Violin	Snare Drum	Xylophone
		Vox Humana	Vox Hum.	Chimes	Chimes		Chrysoglott	Clarinet	Clarinet	Violin Cel	Violin Cel	Dolce	Dolce	Tamb/HiHat	Cow/Wd Blk
		Orch Oboe	Orch Oboe							Dolce Cel	Dolce Cel		Violone		Bass Drum
			Diaphone (low 12 no)												Tap Cymbal
															Cast/TomTom
1	2	1	2	1	2	5	6	3	4	4	4	3	4	5	6

The R311 has spatial imaging that allows the sound of multiple sound source locations with only two main speaker cabinets. If external speakers are used, channel 4 out of the cage should be placed on the right side (Solo Chamber) and channel 3 on the left side (Main Chamber). With this configuration, the percussions should appear to come out of the center between the two speakers.

It is normal for some amount of all sounds to come from both speakers. The use of sophisticated Audio DSP technology allows the ability to locate ranks where there are no speakers and add Virtual Acoustics while remaining in the digital domain making the organ sound as if it is spread across a wide plane between the two actual speakers.

The following is a “chamber” analysis showing which expression shoe (Main or Solo):

Main (3)	Solo (4)
Open Diapason	Post Horn
Violin	Tuba Horn
Violin Celeste	Tibia Clausa
Dolce	Orchestral Oboe
Dolce Celeste	Vox Humana
Clarinet	Bottom 12 notes of 16’ Diaphone
Concert Flute	Percussions express with Solo

An optional sub-woofer channel is strongly recommended for this organ when used with external speakers.

APPENDIX II

GW4 Tremulant Motor List

1. ENGLISH HORN	6.0	ENGLISH HORN
2. [Not Used]		
3. TUBA MIRABILIS	6.0	TUBA
4. TUBA HORN	5.9	TUBA
5. MAIN TIBIA	6.1	TIBIA/VOX
6. SOLO TIBIA	6.0	TIBIA/VOX
7. SOLO STRINGS	6.3	SOLO STRINGS
Solo Violin		
Solo Violin Celeste		
8. [Not Used]		
9. SOLO I	6.2	SOLO
Kinura		
Horn Diapason		
Horn Diapson Celeste		
Orchestral Oboe		
Quintadena		
10. SOLO II	6.0	SOLO
Krumet		
Brass Trumpet		
11. CLARINET	6.2	CLARINET
12. [Not Used]		
13. MAIN STRINGS	6.1	MAIN STRINGS
Dolce		
Dolce Celeste		
Salicional		
Salicional Celeste		
Gamba		
Gamba Celeste		
14. [Not Used]		
15. MAIN	6.1	MAIN
Open Diapason		
Oboe Horn		
Concert Flute		
16. MUSETTE	6.7	MAIN
17. "D" TRUMPET	6.1	MAIN
18. [Not Used]		
19. FOUNDATION TIBIA	**6.2**	TIBIA/VOX
20. SAXOPHONE	6.2	TIBIA/VOX
21. LIEBLICH FLUTE	6.2	TIBIA/VOX
22. MAIN VOX	6.4	TIBIA/VOX
23. SOLO VOX	6.2	TIBIA/VOX
24. VIBRAPHON	5.3	VIBRAPHON
25. CHRYSOGLOTT	5.3	CHRYS. MOTOR

319 Tremulant Motor List

	Speed	**Control**

1.	Main Strings	6.1	MAIN
2.	Open Diapason	6.0	MAIN
3.	Tuba Horn, 'D' Trumpet	6.0	MAIN
4.	Clarinet	6.2	MAIN
5.	Krumet, Concert Flute	6.2	MAIN
6.	Tibia Clausa	6.1	TIBIA
7.	Vox Humana	6.4	TIBIA
8.	Saxophone	6.2	TIBIA
9.	Brass Trumpet, Quintadena	6.0	SOLO
10.	Solo Violin	6.3	SOLO
11.	Orch Oboe, Oboe Horn	6.2	SOLO
12.	Vibraharp Motor	5.3	VibeMotor Piston
13.	Lieblich Flute	6.2	TIBIA

R311/R211 Tremulant Motor List

			CONTROL R311	CONTROL R311
1.	Violin, Violin Cel, Dolce, Dolce Cel	6.1	MAIN	MAIN
2.	Open Diapason	6.0	MAIN	MAIN
3.	Tuba Horn	6.0	SOLO	MAIN
4.	Clarinet	6.2	MAIN	MAIN
5.	Concert Flute	6.2	MAIN	MAIN
6.	Tibia Clausa	6.1	TIBIA/VOX	TIBIA/VOX
7.	Vox Humana	6.4	TIBIA/VOX	TIBIA/VOX
8.	(not used)			
9.	(not used)			
10.	(not used)			
11.	Orchestral Oboe	6.2	SOLO	MAIN

Rank/Slot Information
George Wright Signature Series 4 Manual

Cage		Slot	Rank
1	5	8	Tuba Mirabilis Rank
1	2	8	English Post Horn
1	3	12	Brass Trumpet Rank
1	5	4	'D' Trumpet Rank
1	4	8	Tuba Horn Rank
1	4	2	Open Diapason Rank
1	5	2	Horn Diapason Rank
1	2	10	Horn Diapason Celeste
1	1	16	Solo Tibia Rank
1	1	3	16' Solo Tibia
1	1	4	1 3/5' Solo Tibia
1	2	2	Main Tibia Rank
1	2	3	16' Main Tibia
1	2	4	1 1/3' Main Tibia
1	3	2	Foundation Tibia Rank
1	5	13	Pedal Tibia Pizz.
1	1	11	Clarinet Rank
1	1	12	Clarinet Pedal (16-8)
1	2	6	Kinura Rank
1	4	16	Orchestral Oboe Rank
1	3	4	Musette Rank
1	1	6	Krumet Rank
1	4	14	Saxophone Rank
1	3	14	Solo Violin Rank
1	6	12	Solo Violin Celeste
1	3	10	Salicional Rank
1	6	14	Salicional Celeste
1	3	6	Gamba Rank
1	3	8	Gamba Celeste Rank
1	3	7	Violone 32'–16' (Pedal)
1	6	8	Oboe Horn Rank
1	5	16	Quintadena Rank
1	6	6	Concert Flute Rank
1	6	2	Lieblich Flute Rank
1	5	6	Solo Vox Humana
1	6	16	Main Vox Humana
1	1	14	Dolce Rank
1	1	10	Dolce Celeste
1	5	12	Piano (lower half)
1	5	14	Piano (Upper half)
1	2	14	Glockenspiel
1	2	11	Xylophone
1	5	10	Wood Harp
1	5	9	Marimba
1	4	11	Metal Marp
1	4	4	Vibraharp Attack
1	4	6	Vibraharp
1	6	10	Chrysoglott
1	1	2	Chimes
1	2	16	Bass Drum
1	6	4	Tympani
1	2	12	Snare Drum
1	3	15	Tom-Tom
1	6	9	Wood Block
1	4	5	Castanets
1	6	3	Tambourine
1	3	16	Choke Cymbal
1	2	15	Tap Cymbal
1	1	1	Brush Cymbal
1	2	13	Finger Cymbals
1	1	8	Persian Cymbal
1	4	3	Bird (Toe Piston)
1	4	10	Gong (Toe Piston)
1	5	11	Triangle/ Train Whistle

George Wright Signature Series 319 and 319EX
(Italics = 319EX only)

Cage		Slot	
1	**-**	**1**	**English Post Horn**
2	-	9	Brass Trumpet
2	-	1	Tuba Horn
2	-	2	'D' Trumpet
1	-	25	Open Diapason
1	-	17	Tibia Clausa
1	-	18	*Pedal Tibia Pizz.*
2	-	17	Clarinet
1	-	5	Orchestral Oboe
1	-	29	Krumet
2	-	25	Saxophone
2	-	29	Solo Violin

2	-	5	Violin
1	-	13	Violin Celeste
2	-	6	Violone 32'-16'
1	-	6	Oboe Horn
1	-	21	Quintadena
2	-	21	Lielich Flute
1	-	30	Concert Flute
2	-	13	Vox Humana
2	-	7	Dolce
1	-	14	Dolce Celeste
1	-	9	Piano
1	-	22	Glockenspiel
2	-	26	Xylophone
2	-	18	Wood Harp

2	-	19	Marimba
1	-	2	Chrysoglott
1	-	3	Vibraharp
2	-	22	Chimes
2	-	14	Bass Drum
2	-	10	Snare Drum
2	-	31	TomTom/Castanets
2	-	15	CowBell/WoodBlk
2	-	16	HiHat/Tambourine
2	-	30	Tap Cymbal
1	-	26	Persian Cymbal

R311 & R211
(Italics = R311 only)

Cage		Slot	
1	-	5	English Post Horn
1	-	21	Tuba Horn
1	-	13	Open Diapason
1	-	19	Diaphone – Bottom 12 n
1	-	1	Tibia Clausa
1	-	2	Tibia - Bottom 24 notes
1	-	10	Clarinet
1	-	17	Orchestral Oboe
1	-	25	Violin

1	-	29	Violin Celeste
1	-	*26*	*Violone 16' (Pedal)*
1	-	9	Concert Flute
1	-	8	Vox Humana
1	-	*27*	*Dolce*
1	-	*30*	*Dolce Celeste*
1	-	*7*	*Wood Harp*
1	-	6	Chrysoglott
1	-	18	Glockenspiel
1	-	14	Xylophone

1	-	22	Chimes
1	-	16	Bass Brum
1	-	11	Snare Drum
1	-	12	HiHat/Tambourine
1	-	15	CowBell/WoodBlk
1	-	31	Tap Cymbal
1	-	32	TomTom/Castanets

APPENDIX III

Rank Lists:

GW-4

Rank		Chamber
1.	Tuba Mirabilis	Solo
2.	English Post Horn	Solo
3.	Brass Trumpet	Solo
4.	Tuba Horn	Main
5.	'D' Trumpet	Main
6.	Open Diapason	Main
7.	Horn Diapason	Solo
8.	Horn Diapason Celeste	Solo
9.	Solo Tibia Clausa 1	Solo
10.	Solo Tibia Clausa 2	Percussion
11.	Main Tibia Clausa	Main
12.	Saxophone	Solo
13.	Clarinet	Main
14.	Solo Violin	Solo
15.	Solo Violin Celeste	Solo
16.	Salicional	Main
17.	Salicional Celeste	Main
18.	Gamba	Main
19.	Gamba Celeste	Main
20.	Orchestral Oboe	Solo
21.	Kinura	Solo
22.	Krumet	Solo
23.	Musette	Main
24.	Oboe Horn	Main
25.	Quintadena	Solo
26.	Solo Vox Humana	Solo
27.	Vox Humana	Main
28.	Concert Flute	Main
29.	Lieblich Flute	Solo
30.	Dolce	Main
31.	Dolce Celeste	Main
32.	Pedal Tibia Pizz.	Percussion
33.	Pedal Violone	Main

GW319

1.	English Post Horn	Solo
2.	Brass Trumpet	Solo
3.	Tuba Horn	Main
4.	'D' Trumpet	Main
5.	Open Diapason	Main
6.	Tibia Clausa	Solo
7.	Saxophone	Solo
8.	Clarinet	Main
9.	Solo String	Solo
10.	Violin	Main
11.	Violin Celeste	Main
12.	Orchestral Oboe	Solo
13.	Krumet	Main
14.	Oboe Horn	Solo
15.	Quintadena	Solo
16.	Vox Humana	Solo
17.	Concert Flute	Main
18.	Lieblich Flute	Main
19.	Dolce	Main
20.	Dolce Celeste	Main
21.	Pedal Violone	Main

R311

1.	English Post Horn	Solo
2.	Tuba Horn	Solo
3.	Open Diapason	Main
4.	Tibia Clausa	Solo
5.	Clarinet	Main
6.	Violin	Main
7.	Violin Celeste	Main
8.	Orchestral Oboe	Solo
9.	Concert Flute	Main
10.	Vox Humana	Solo
11.	Dolce	Main
12.	Dolce Celeste	Main
13.	Pedal Violone	Main

R211

1.	English Post Horn	Solo
2.	Tuba Horn	Solo
3.	Open Diapason	Main
4.	Tibia Clausa	Solo
5.	Clarinet	Main
6.	Violin	Main
7.	Violin Celeste	Main
8.	Orchestral Oboe	Solo
9.	Concert Flute	Main
10.	Vox Humana	Solo

APPENDIX IV

KEYBOARDS: - These would be listed as "Note On" MIDI commands and the organ produces a nominal "velocity" of 64 on all divisions without OST™ (optical sensor technology) keying. On the GW4, OST™ (velocity) keying is on the Orchestral and Solo manuals (non-2nd touch). On the GW319 OST™ (velocity) is on the Solo Manual only. On the R311, OST™ (velocity) is on the Solo and Great manuals. On the R211 the accompaniment and solo manuals have OST™. The organ will read any velocity other than "0" to turn a note on.

Manual Divisions:

Manual	MIDI Channel
Solo (GW4 only)	6
Solo (GW319-R311),Orchestral (GW4)	4
Great (Solo on R211)	1
Great 2nd Touch	7
Accompaniment	2
Accomp 2nd Touch	5
Pedal	3
General Pistons	8
Trem Pistons	9
Trigger and Traps Pistons	10

Usually the note information has three pieces of data: 1) Channel, 2) Note Number, and 3) Velocity (listed here as a value). If you use a program such as Cakewalk for the IBM type computers, these three will be listed in the "event view" as follows:

TRACK	CHANNEL	TIME	EVENT	VALUE	DURATION
1	1	X:XXX:XX	NOTE G5	64	100

This means that on track 1 (or whatever track you have recorded on) there is a message sent via MIDI for a note-on on channel 1 to play "G5" (which is really the "G" above middle "C" on the keyboard in MIDI terms) at a velocity of "64" for a duration of "100" ticks (a length measurement used by Cakewalk).

PISTONS: - These are generally listed as "Program Changes" or a "Patch Change" in MIDI language and usually correspond to the manual they are attached to. "Patch" information in MIDI starts at "0", but our first piston in each division is "1" so you must subtract by "1" to get the piston's equivalent program change number. The "additional" divisions of pistons are:

GENERALS = MIDI channel 8
TRAPS = MIDI channel 10
TREMS = MIDI channel 9

TRACK	CHANNEL	TIME	EVENT	VALUE	DURATION
1	1	X:XXX:XX	PATCH	0	
1	8	X:XXX:XX	PATCH	9	

The first message means that piston 1 was pressed on channel 1. The second message indicates that General piston 10 was pressed.

EXPRESSION: - This is a more complex subject. MIDI expression (Volume) changes are under the broad heading of "Control Changes." Control changes can be many things from expression, to stops, to "pitch bend" changes for a MIDI keyboard. Each of these has a separate number to indicate what kind of control change it is. Volume or expression is control change number seven. The control change data will contain channel information, the type of control change, and a number for the control change "value." In the case of volume, the control change value would be between 0 and 127. Since the organ never truly goes to "0" with the expression shoe, the lower limit on the Allen is approximately 20. In Cakewalk, the expression data might look like this:

TRACK	CHANNEL	TIME	EVENT	VALUE	DURATION
1	1	X:XXX:XX	CONTROL	7	100
1	1	X:XXX:XX	CONTROL	7	98
1	1	X:XXX:XX	CONTROL	7	96

Here we see that the volume is reducing on channel 1. You will notice on your GW4 organ that many channels are sent on a single expression shoe. All manual divisions must be sent at some point for your external MIDI devices to understand expression.

STOPS: - This is even more complex than the expression. We have a "Map" for all organs that will allow the data recorded on one organ to be played back on another organ. Enclosed is a list of the organ stops and their MIDI "addresses." Individual stops are handled by control numbers. MIDI has a "catchall" for anything not specifically defined by the MIDI standard called "NON-REGISTERED PARAMETERS." These are under control numbers 98 and 99. 99 being the "high" byte and 98 being the "low" byte. "Control 6" is the "on and off" byte: Control 6 with a value of 127 turns the stop on. Control 6 with a value of 0 turns the stop off. As an example, in the list of stops for the GW4 you will note that the Great Solo Tibia Clausa 8' is listed as 1,040. "1,040" means that this stop is on Channel 1 (Great) and its "map" number is 40. If you checked the Primary Tibia 8' on any of our organs, you would find that it would be "40." The best way to show this is to show you an example in Cakewalk. The first three pieces of data turn on the Tibia Clausa 8' on the Great. The second three pieces of data turn off the Tibia Clausa 8' on the Great.

TRACK	CHANNEL	TIME	EVENT	VALUE	DURATION
1	1	X:XXX:XX	CONTROL	99	0
1	1	X:XXX:XX	CONTROL	98	40
1	1	X:XXX:XX	CONTROL	6	127
1	1	X:XXX:XX	CONTROL	99	0
1	1	X:XXX:XX	CONTROL	98	40
1	1	X:XXX:XX	CONTROL	6	0

If the stop "map" number (NRPN) is 128 or larger, then you must split it into "bytes." If you look at the Great Clarinet 8' on your list, it has a number of "1,132." The "1," means that this stop is on the Great. The 132 must be divided in order to use it as a MIDI number. The Great Clarinet 8' would look like this in Cakewalk:

TRACK	CHANNEL	TIME	EVENT	VALUE	DURATION
1	1	X:XXX:XX	CONTROL	99	1
1	1	X:XXX:XX	CONTROL	98	4
1	1	X:XXX:XX	CONTROL	6	127
1	1	X:XXX:XX	CONTROL	99	1
1	1	X:XXX:XX	CONTROL	98	4
1	1	X:XXX:XX	CONTROL	6	0

Control 99 = 1 X 128 = 128. Add the value of control 98 (4) and get a total of 132, the value of an 8' Clarinet! This extends to all divisions. If, for example, you wanted the MIDI number of the Solo Tibia Clausa 8' in the Accompaniment, you would find that number to be "40" like the Great Solo Tibia Clausa 8'. However, the total MIDI number would be "2,040." The "2" would tell you it is on the Accompaniment manual.

These are the individual stop numbers that are sent when a single stop is moved. The stop number (Stp#) is really meaningless except it is the internal wiring order for the stops. NRPN is Non-registered parameter. This is the stop information sent by Allen organs.

Stp#	Ch	NRPN	Stop Name
GREAT			
123	1	116	= Bombarde 16 {BOMB} [R]
124	1	113	= English Post Horn 16 {HORN} [R]
125	1	114	= Brass Trumpet (ten c) 16 {TRUM} [R]
126	1	115	= Ophicleide 16 {OPH} [R]
127	1	009	= Diaphone 16 {DIA}
128	1	012	= Solo Tibia Clausa 16 {TIBIA}
129	1	013	= Tibia Clausa (ten c) 16 {TIBIA}
130	1	118	= Clarinet 16 {CLAR} [R]
131	1	120	= Orchestral Oboe (ten c) 16 {OBOE} [R]
132	1	119	= Musette (ten c) 16 {MUS} [R]
133	1	123	= Krumet (ten c) 16 {KRUM} [R]
134	1	124	= Saxophone 16 {SAX} [R]
135	1	017	= String Ensemble 4 rks 16 {CEL} [Y]
136	1	117	= Oboe Horn 16 {OBOE} [R]
137	1	015	= Lieblich Bourdon 16 {LIEB}
138	1	121	= Vox Humana (S) (ten c) 16 {VOX} [R]
139	1	122	= Vox Humana (ten c) 16 {VOX} [R]
140	1	130	= Tuba Mirabilis 8 {TUBA} [R]
141	1	127	= English Post Horn 8 {HORN} [R]
142	1	129	= Brass Trumpet 8 {TRUM} [R]
143	1	131	= 'D' Trumpet 8 {TRUM} [R]
144	1	128	= Tuba Horn 8 {TUBA} [R]
145	1	031	= Open Diapason 8 {OPEN}
146	1	032	= Horn Diapason 8 {OPEN}
147	1	040	= Solo Tibia Clausa 8 {TIBIA}
148	1	041	= Tibia Clausa 8 {TIBIA}
149	1	132	= Clarinet 8 {CLAR} [R]
031	1	136	= Kinura 8 {KIN} [R]
032	1	135	= Orchestral Oboe 8 {OBOE} [R]
033	1	137	= Musette 8 {MUS} [R]
034	1	140	= Krumet 8 {KRUM} [R]
035	1	141	= Saxophone 8 {SAX} [R]
036	1	037	= Solo Violins 2 rks 8 {CEL} [Y]
037	1	034	= Salicional 2 rks 8 {CEL} [Y]
038	1	133	= Oboe Horn 8 {OBOE} [R]
039	1	044	= Quintadena 8 {QUINT}
040	1	043	= Lieblich Flute 8 {LIEB}
041	1	138	= Vox Humana (S) 8 {VOX} [R]
042	1	139	= Vox Humana 8 {VOX} [R]
043	1	046	= Dolce 2 rks 8 {DOLCE} [Y]
044	1	053	= Fifth (tibia) 5-1/3 {5TH}
045	1	056	= Octave 4 {OCT}
046	1	057	= Octave (Horn) 4 {OCT}
047	1	063	= Piccolo (S) 4 {PICC}
048	1	064	= Piccolo 4 {PICC}
049	1	059	= Solo Violins 2 rks 4 {CEL} [Y]
050	1	061	= Salicet 2 rks 4 {CEL} [Y]
051	1	066	= Lieblich Flute 4 {LIEB}
052	1	074	= Lieblich Tierce 3-1/5 {TIERCE}
053	1	076	= Twelfth (S) 2-2/3 {12TH}
054	1	077	= Twelfth 2-2/3 {12TH}
055	1	084	= Piccolo (S) 2 {PICC}
056	1	085	= Piccolo 2 {PICC}
057	1	083	= Fifteenth 2 {15TH}
058	1	098	= Fife (Lieb) 1 {FIFE}
059	1	154	= Piano 8 {PIANO}
060	1	162	= Glockenspiel {GLOCK}

061 1 163 = Xylophone {XYLO}
062 1 156 = Harp {HARP}
063 1 265 = Suboctave [B]
064 1 271 = Unison Off [B]
065 1 266 = Octave [B]
066 1 269 = Orchestral Sub to Great {ORCH} [B]
067 1 250 = Orchestral to Great {ORCH} [B]
068 1 281 = Solo Sub to Great {SOLO} [B]
069 1 251 = Solo to Great {SOLO} [B]
070 1 222 = MIDI on Great [B]

ACCOMPANIMENT
091 2 130 = Tuba Mirabilis 8 {TUBA} [R]
092 2 127 = English Post Horn 8 {HORN} [R]
093 2 129 = Brass Trumpet 8 {TRUM} [R]
094 2 131 = 'D' Trumpet 8 {TRUM} [R]
095 2 128 = Tuba Horn 8 {TUBA} [R]
096 2 031 = Open Diapason 8 {OPEN}
097 2 032 = Horn Diapason 8 {OPEN}
098 2 040 = Solo Tibia Clausa 8 {TIBIA}
099 2 041 = Tibia Clausa (M) 8 {TIBIA}
100 2 132 = Clarinet 8 {CLAR} [R]
101 2 037 = Solo Violins 2 rks 8 {CEL} [Y]
102 2 034 = Salicional 2 rks 8 {CEL} [Y]
103 2 133 = Oboe Horn 8 {OBOE} [R]
104 2 044 = Quintadena 8 {QUINT}
105 2 043 = Lieblich Flute 8 {LIEB}
106 2 042 = Concert Flute 8 {FLUTE}
107 2 138 = Solo Vox Humana 8 {VOX} [R]
108 2 139 = Vox Humana 8 {VOX} [R]
109 2 047 = Dolce 2 rks 8 {DOLCE} [Y]
001 2 056 = Octave 4 {OCT}
002 2 063 = Piccolo 4 {PICC}
003 2 059 = Solo Violins 2rks 4 {CEL} [Y]
004 2 061 = Salicet 2 rks 4 {CEL} [Y]
005 2 067 = Quintadena 4 {QUINT}
006 2 066 = Lieblich Flute 4 {LIEB}
007 2 065 = Concert Flute 4 {FLUTE}
008 2 147 = Vox Humana (M) 4 {VOX} [R]
009 2 076 = Lieblich Twefth 2-2/3 {12TH}
010 2 084 = Piccolo 2 {PICC}
212 2 154 = Piano 8 {PIANO}
213 2 167 = Metal Harp 8 {HARP}
214 2 157 = Wood Harp 8 {HARP}
215 2 156 = Wood Harp 4 {HARP}
216 2 166 = Chrysoglott {CHRYS}
217 2 268 = Octave [B]
218 2 251 = Solo to Accomp {SOLO} [B]
219 2 223 = MIDI on Accomp [B]
220 2 205 = Snare Drum
221 2 208 = Castanets
222 2 207 = Tambourine
223 2 210 = Wood Block
224 2 209 = Tom-Tom
225 2 211 = Finger Cymbals
226 2 204 = Choke Cymbal
227 2 203 = Tap Cymbal
228 2 216 = Brush Cymbal
229 2 254 = Accomp Traps on 2nd T [B]

PEDAL
169 3 002 = Contra Violone 32 {VIOL}
170 3 113 = English Post Horn 16 {HORN} [R]
171 3 115 = Ophicleide 16 {OPH} [R]
172 3 009 = Diaphone 16 {DIA}
173 3 012 = Tibia Clausa 16 {TIBIA}
174 3 118 = Bass Clarinet 16 {CLAR} [R]
175 3 017 = Violone 16 {VIOL}
176 3 117 = Oboe Horn 16 {OBOE} [R]
177 3 014 = Bourdon 16 {BOURD}
178 3 015 = Dolce 16 {DOLCE}
179 3 130 = Tuba Mirabilis 8 {TUBA} [R]
180 3 127 = English Post Horn 8 {HORN} [R]
181 3 128 = Tuba Horn 8 {TUBA} [R]
182 3 031 = Open Diapason 8 {OPEN}
183 3 032 = Horn Diapason 8 {OPEN}
184 3 043 = Tibia Clausa (S) 8 {TIBIA}
084 3 040 = Tibia Clausa 8 {TIBIA}
085 3 041 = Tibia Clausa Pizz. 8 {TIBIA}
086 3 132 = Clarinet 8 {CLAR} [R]
087 3 034 = Cello 2 rks 8 {CELLO} [Y]
088 3 133 = Oboe Horn 8 {OBOE} [R]
089 3 044 = Quintadena 8 {QUINT}
090 3 042 = Flute 8 {FLUTE}
201 3 153 = Piano 16 {PIANO}
202 3 154 = Piano 8 {PIANO}
203 3 248 = Accomp to Pedal {ACCOMP} [B]
204 3 247 = Great to Pedal {GREAT} [B]
205 3 251 = Solo to Pedal {SOLO} [B]
206 3 224 = MIDI on Pedal [B]
207 3 202 = Bass Drum
208 3 212 = Tympani
209 3 211 = Finger Cymbals
210 3 203 = Tap Cymbal
211 3 216 = Brush Cymbal

ORCHESTRAL
185 4 116 = Bombarde 16 {BOMB} [R]
186 4 113 = English Post Horn 16 {HORN} [R]
187 4 114 = Brass Trumpet (ten c) 16 {TRUM} [R]
188 4 012 = Solo Tibia Clausa 16 {TIBIA}
189 4 013 = Tibia Clausa (ten c) 16 {TIBIA}
190 4 120 = Orchestral Oboe (ten c) 16 {OBOE} [R]
191 4 119 = Musette (ten c) 16 {MUS} [R]
192 4 123 = Krumet (ten c) 16 {KRUM} [R]
193 4 124 = Saxophone (ten c) 16 {SAX} [R]
194 4 121 = Vox Humana (S) (ten c) 16 {VOX} [R]
195 4 122 = Vox Humana (ten c) 16 {VOX} [R]
196 4 130 = Tuba Mirabilis 8 {TUBA} [R]
197 4 127 = English Post Horn 8 {HORN} [R]
198 4 129 = Brass Trumpet 8 {TRUM} [R]
199 4 031 = Open Diapason 8 {OPEN}
200 4 032 = Horn Diapason 8 {OPEN}
071 4 154 = Piano 8 {PIANO}
150 4 040 = Solo Tibia Clausa 8 {TIBIA}
151 4 041 = Tibia Clausa 8 {TIBIA}
152 4 132 = Clarinet 8 {CLAR} [R]
153 4 136 = Kinura 8 {KIN} [R]
154 4 135 = Orchestral Oboe 8 {OBOE} [R]
155 4 137 = Musette 8 {MUS} [R]
156 4 140 = Krumet 8 {KRUM} [R]
157 4 141 = Saxophone 8 {SAX} [R]
158 4 034 = String Ensemble 4 rks 8 {CEL} [Y]
159 4 044 = Quintadena 8 {QUINT}
160 4 043 = Lieblich Flute 8 {LIEB}
161 4 046 = Dolce 2 rks 8 {DOLCE} [Y]
162 4 138 = Vox Humana (S) 8 {VOX} [R]
163 4 139 = Vox Humana 8 {VOX} [R]
164 4 063 = Piccolo (S) 4 {PICC}
165 4 064 = Piccolo 4 {PICC}
166 4 059 = String Ensemble 4 rks 4 {CEL} [Y]
167 4 076 = Twelfth (S) 2-2/3 {12TH}
168 4 084 = Piccolo (S) 2 {PICC}
072 4 162 = Glockenspiel {GLOCK}
073 4 163 = Xylophone {XYLO}
074 4 167 = Metal Harp 8 {HARP}
075 4 156 = Harp 8 {HARP}
076 4 166 = Chrysoglott {CHRYS}
077 4 161 = Cathedral Chimes {CHIME}
078 4 269 = Suboctave [B]

079 4 271 = Unison Off [B]
080 4 270 = Octave [B]
081 4 281 = Solo Sub to Orchestral {SOLO} [B]
082 4 251 = Solo to Orchestral {SOLO} [B]
083 4 225 = MIDI on Orchestral [B]

ACCOMPANIMENT 2nd TOUCH
250 5 130 = Tuba Mirabilis 8 {TUBA} [R]
249 5 127 = English Post Horn 8 {HORN} [R]
248 5 129 = Brass Trumpet 8 {TRUM} [R]
247 5 128 = Tuba Horn 8 {TUBA} [R]
246 5 031 = Open Diapason 8 {OPEN}
245 5 040 = Tibia Clausa (S) 8 {TIBIA}
244 5 132 = Clarinet 8 {CLAR} [R]
243 5 063 = Piccolo (S) 4 {PICC}
242 5 154 = Piano 8 {PIANO}
241 5 157 = Wood Harp 8 {HARP}
240 5 156 = Wood Harp 4 {HARP}
239 5 161 = Cathedral Chimes {CHIMES}
238 5 162 = Octave Glockenspiel {GLOCK}
237 5 266 = Great Octave to Accomp {GREAT} [B]
236 5 251 = Solo to Accomp {SOLO} [B]
235 5 221 = MIDI on Accomp 2nd [B]

SOLO
110 6 130 = Tuba Mirabilis 8 {TUBA} [R]
111 6 127 = English Post Horn 8 {HORN} [R]
112 6 129 = Brass Trumpet 8 {TRUM} [R]
113 6 131 = 'D' Trumpet 8 {TRUM} [R]
114 6 128 = Tuba Horn 8 {TUBA} [R]
115 6 040 = Solo Tibia Clausa 8 {TIBIA}
116 6 041 = Tibia Clausa (M) 8 {TIBIA}
117 6 132 = Clarinet 8 {CLAR} [R]
118 6 136 = Kinura 8 {KIN} [R]
119 6 135 = Orchestral Oboe 8 {OBOE} [R]
120 6 137 = Musette 8 {MUS} [R]
121 6 140 = Krumet 8 {KRUM} [R]
122 6 141 = Saxophone 8 {SAX} [R]
011 6 034 = String Ensemble 4 rks 8 {CEL} [Y]
012 6 138 = Vox Humana (S) 8 {VOX} [R]
013 6 139 = Vox Humana (M) 8 {VOX} [R]
014 6 063 = Piccolo (S) 4 {PICC}
015 6 064 = Piccolo 4 {PICC}
016 6 059 = Solo Violins 2 rks 4 {CEL} [Y]
017 6 076 = Twelfth (S) 2-2/3 {12TH}
018 6 084 = Piccolo (S) 2 {PICC}
019 6 085 = Piccolo 2 {PICC}
020 6 091 = Tierce (S) 1-3/5 {TIERCE}
021 6 095 = Larigot 1-1/3 {LAR}
022 6 154 = Piano 8 {PIANO}
023 6 162 = Glockenspiel {GLOCK}
024 6 163 = Xylophone {XYLO}
025 6 167 = Metal Harp 8 {HARP}

R319 Stoplist

*** PEDAL Division**

S001, 3, 002, = Contra Violone 32 {VIOL}
S002, 3, 115, = Ophicleide 16 {OPH} [R]
S003, 3, 009, = Diaphone 16 {DIA}
S004, 3, 017, = Violone 16 {VIOL}
S005, 3, 012, = Bourdon 16 {BOUR}
S006, 3, 127, = English Post Horn 8 {HORN} [R]
S007, 3, 128, = Tuba Horn 8 {TUBA} [R]
S008, 3, 031, = Open Diapason 8 {OPEN}
S009, 3, 040, = Tibia Clausa 8 {TIBIA}
S010, 3, 132, = Clarinet 8 {CLAR} [R]
S011, 3, 042, = Flute 8 {FLUTE}

026 6 156 = Harp 8 {HARP}
027 6 166 = Chrysoglott {CHRYS}
028 6 161 = Cathedral Chimes {CHIMES}
029 6 281 = Suboctave [B]
030 6 226 = MIDI on Solo [B]

GREAT 2nd TOUCH
230 7 113 = English Post Horn 16-8 {HORN} [R]
231 7 250 = Orchestral to Great {ORCH} [B]
232 7 251 = Solo to Great {SOLO} [B]
233 7 219 = MIDI on Great 2nd [B]
234 4 175 = Wood Harp Re-it [B]

TREMULANTS & GENERAL DIVISION
260 8 176 = Main
259 8 178 = Main Strings
258 8 183 = Clarinet
257 4 178 = Solo
256 8 179 = Solo Strings
255 8 177 = Tibias & Voxes
254 4 181 = Tubas
253 8 180 = English Horn
252 8 182 = Vibraphon
251 8 181 = Chrysoglott Motor

PISTON CONTROLS:

7 198 SOLO TIBIA 1 OFF
9 198 SOLO TIBIA 2 ON
8 175 BLANK
8 198 SOLO VIOLINS OFF
8 197 MELODY COUPLER
8 192 HORN DIAP CEL ON
6 198 GAMBA ON
5 198 SALICIONALS OFF
8 194 MASTER EXPRESSION
8 193 CELESTES OFF

The Following Toe Pistons are “Trigger” pistons. They output on MIDI Channel 10 (General MIDI Drum sets) with a particular key(note) on a virtual keyboard.

C#2 PERSIAN CYMBAL
E2 GONG
A4 TRIANGLE
B3 BIRD WHISTLE
C4 TRAIN WHISTLE

These are divisional pistons on MIDI channel 9
1 TREMS OFF
2 TREMS ON

S012, 3, 153, = Piano 16 {PIANO}
S013, 3, 154, = Piano 8 {PIANO}
S014, 3, 248, = Accomp. To Pedal {ACCOMP} [B]
S090, 3, 224, = MIDI On Pedal [B]
S091, 3, 202, = Bass Drum
S092, 3, 203, = Tap Cymbal {Brush Cymbal}

*** ACCOMP. Division**

S015, 2, 127, = English Post Horn 8 {HORN} [R]
S016, 2, 129, = Brass Trumpet 8 {TRUM} [R]
S017, 2, 128, = Tuba Horn 8 {TUBA} [R]
S018, 2, 031, = Open Diapason 8 {OPEN}
S019, 2, 040, = Tibia Clausa 8 {TIBIA}
S020, 2, 132, = Clarinet 8 {CLAR} [R]
S021, 2, 034, = Violins 3rks 8 {CEL} [Y]
S022, 2, 133, = Oboe Horn 8 {OBOE} [R]
S023, 2, 044, = Quintadena 8 {QUINT}
S024, 2, 042, = Concert Flute 8 {FLUTE}

S025, 2, 138, = Vox Humana 8 {VOX} [R]
S026, 2, 056, = Octave 4 {OCT}
S027, 2, 063, = Piccolo 4 {PICC}
S028, 2, 065, = Concert Flute 4 {FLUTE}
S029, 2, 066, = Lieblich Flute 4 {LIEB}
S093, 2, 154, = Piano 8 {PIANO}
S094, 2, 156, = Wood Harp {HARP}
S095, 2, 166, = Chrysoglott {CHRYS}
S096, 2, 268, = Octave [B]
S097, 2, 223, = MIDI On Accomp. [B]
S098, 2, 205, = Snare Drum
S099, 2, 209, = Tom Tom {Castanets}
S100, 2, 214, = Cow Bell {Wood Block}
S101, 2, 204, = Hi-Hat {Tambourine}
S102, 2, 203, = Tap Cymbal {Brush Cymbal}
S103, 10, 198, = Alternate Traps

*** Great Division**

S030, 1, 113, = English Post Horn 16 {HORN} [R]
S031, 1, 114, = Brass Trumpet (ten c) 16 {TRUM} [R]
S032, 1, 115, = Ophicleide 16 {OPH}
S033, 1, 009, = Diaphone 16 {DIA}
S034, 1, 012, = Tibia Clausa (ten c) 16 {TIBIA}
S035, 1, 118, = Clarinet (ten c) 16 {CLAR} [R]
S036, 1, 120, = Orchestral Oboe (ten c) 16 {OBOE} [R]
S037, 1, 123, = Krumet (ten c) 16 {KRUM} [R]
S038, 1, 124, = Saxophone (ten c) 16 {SAX} [R]
S039, 1, 017, = Violins 3 rks 16 {CEL} [Y]
S040, 1, 121, = Vox Humana (ten c) 16 {VOX} [R]
S041, 1, 127, = English Post Horn 8 {HORN} [R]
S042, 1, 129, = Brass Trumpet 8 {TRUM} [R]
S043, 1, 128, = Tuba Horn 8 {TUBA} [R]
S044, 1, 031, = Open Diapason 8 {OPEN}
S045, 1, 040, = Tibia Clausa 8 {TIBIA}
S046, 1, 132, = Clarinet 8 {CLAR} [R]
S047, 1, 135, = Orchestral Oboe 8 {OBOE} [R]
S048, 1, 140, = Krumet 8 {KRUM} [R]
S049, 1, 141, = Saxophone 8 {SAX} [R]
S050, 1, 034, = Violins 3 rks 8 {CEL} [Y]
S051, 1, 133, = Oboe Horn 8 {OBOE} [R]
S052, 1, 044, = Quintadena 8 {QUINT}
S053, 1, 043, = Lieblich Flute 8 {LIEB}
S054, 1, 138, = Vox Humana 8 {VOX} [R]
S055, 1, 053, = Fifth (Tibia) 5-1/3 {5TH}
S056, 1, 056, = Octave 4 {OCT}
S057, 1, 063, = Piccolo 4 {PICC}
S058, 1, 059, = Violins 3 rks 4 {CEL} [Y]
S059, 1, 066, = Lieblich Flute 4 {LIEB}
S060, 1, 076, = Twelfth 2-2/3 {12TH}
S061, 1, 084, = Piccolo 2 {PICC}
S062, 1, 083, = Fifteenth 2 {15TH}
S063, 1, 098, = Fife (Lieb) 1 {FIFE}
S114, 1, 162, = Glockenspiel {GLOCK}
S115, 1, 163, = Xylophone {XYLO}
S116, 1, 265, = Suboctave [B]
S117, 1, 271, = Unison Off [B]
S118, 1, 266, = Octave [B]
S119, 1, 269, = Solo Sub To Great {SOLO} [B]
S120, 1, 250, = Solo To Great {SOLO} [B]
S121, 1, 222, = MIDI On Great [B]

*** SOLO Division**

S081, 4, 127, = English Post Horn 8 {HORN} [R]
S082, 4, 129, = Brass Trumpet 8 {TRUM} [R]
S083, 4, 128, = Tuba Horn 8 {TUBA} [R]
S084, 4, 131, = 'D' Trumpet 8 {TRUM} [R]
S085, 4, 031, = Open Diapason 8 {OPEN}
S086, 4, 040, = Tibia Clausa 8 {TIBIA}
S087, 4, 132, = Clarinet 8 {CLAR} [R]
S088, 4, 135, = Orchestral Oboe 8 {OBOE} [R]
S089, 4, 136, = Krumet 8 {KRUM} [R]
S064, 4, 141, = Saxophone 8 {SAX} [R]
S065, 4, 034, = Violins 3 rks 8 {CEL} [Y]
S066, 4, 044, = Quintadena 8 {QUINT}
S067, 4, 138, = Vox Humana 8 {VOX} [R]
S068, 4, 063, = Piccolo 4 {PICC}
S069, 4, 147, = Vox Humana 4 {VOX} [R]
S070, 4, 076, = Twelfth 2-2/3 {12TH}
S071, 4, 084, = Piccolo 2 {PICC}
S072, 4, 091, = Tierce 1-3/5 {TIERCE}
S073, 4, 095, = Larigot 1-1/3 {LAR}
S074, 4, 154, = Piano 8 {PIANO}
S075, 4, 162, = Glockenspiel {GLOCK}
S076, 4, 163, = Xylophone {XYLO}
S077, 4, 156, = Wood Harp 8 {HARP}
S078, 4, 166, = Chrysoglott {CHRYS}
S079, 4, 269, = Suboctave [B]
S080, 4, 225, = MIDI On Solo [B]

*** ACCOMP. 2nd Touch**

S104, 5, 127, = English Post Horn 8 {HORN} [R]
S105, 5, 129, = Brass Trumpet 8 {TRUM} [R]
S106, 5, 128, = Tuba Horn 8 {TUBA} [R]
S107, 5, 031, = Open Diapason 8 {OPEN}
S108, 5, 132, = Clarinet 8 {CLAR} [R]
S109, 5, 154, = Piano 8 {PIANO}
S110, 5, 157, = Wood Harp 8 {HARP}
S111, 5, 266, = Great Octave to Accomp {GREAT} [B]
S112, 5, 251, = Solo To Accomp {SOLO} [B]
S113, 5, 221, = MIDI To Accomp 2nd [B]

*** GREAT 2nd Touch**

S122, 7, 113, = English Post Horn 16-8 {HORN} [R]
S123, 7, 250, = Solo To Great {SOLO} [B]
S124, 7, 219, = MIDI On Great 2nd [B]

*** TREMULANTS Division**

S125, 8, 176, = Main
S126, 4, 178, = Solo
S127, 8, 177, = Tibia

* Stop Pistons

8, 195, = Percussion Unexpressed
8, 194, = Master Expression
8, 197, = Melody Coupler
4, 161, = Solo Chimes
8, 166, = Chrysoglott > Vibes
8, 182, = Vibraharp/Chrysoglott Motor

GW319 continued

8, 198, = Solo Violin Off
5, 254, = Accomp Traps 2nd Touch
3, 290, = Accomp Traps to Pedal
2, 198, = Accomp Violins > Dolces
4, 175, = Wood Harp Reiterate
1, 300, = (Blank Piston)

GW319EX STOPLIST

*** Upper Row**

*** PEDAL Division**

S001, 3, 132, = Clarinet 8 {CLAR} [R]
S002, 3, 044, = Quintadena 8 {QUINT}
S003, 3, 042, = Flute 8 {FLUTE}
S004, 3, 153, = Piano 16 {PIANO}
S005, 3, 154, = Piano 8 {PIANO}
S006, 3, 248, = Accomp. To Pedal {ACCOMP} [B]
S007, 3, 224, = MIDI On Pedal [B]
S008, 3, 202, = Bass Drum
S009, 3, 203, = Tap Cymbal {Brush Cymbal}
S010, 3, 290, = Acc. Traps to Pedal [B]

*** Accomp Upper Row**

S011, 2, 061, = Violin 4 {VIOL}
S012, 2, 062, = Violin Celeste 4 {Celeste} [Y]
S013, 2, 065, = Concert Flute 4 {FLUTE}
S014, 2, 066, = Lieblich Flute 4 {LIEB}
S015, 2, 154, = Piano 8 {PIANO}
S016, 2, 157, = Wood Harp 8 {HARP}
S017, 2, 156, = Wood Harp 4 {HARP}
S018, 2, 166, = Chrysoglott {CHRYS}
S019, 2, 268, = Octave [B]
S020, 2, 223, = MIDI On Accomp. [B]
S021, 2, 198, = Acc Viols > Dolce
S022, 2, 205, = Snare Drum

S023, 2, 209, = Tom Tom {Castanets}
S024, 2, 214, = Cow Bell {Wood Block}
S025, 2, 204, = Hi-Hat {Tambourine}
S026, 2, 203, = Tap Cymbal {Brush Cymbal}
S027, 10,198, = Alternate Traps
S028, 5, 254, = Acc. Traps on 2nd T [B]

*** Great - Upper Row**
S029, 1, 133, = Oboe Horn 8 {OBOE} [R]
S030, 1, 044, = Quintadena 8 {QUINT}
S031, 1, 043, = Lieblich Flute 8 {LIEB}
S032, 1, 138, = Vox Humana 8 {VOX} [R]
S033, 1, 053, = Fifth (Tibia) 5-1/3 {5TH}
S034, 1, 056, = Octave 4 {OCT}
S035, 1, 063, = Piccolo 4 {PICC}
S036, 1, 061, = Solo String 4 {STRING}
S037, 1, 059, = Violins 2 rks 4 {CEL} [Y]
S038, 1, 066, = Lieblich Flute 4 {LIEB}
S039, 1, 076, = Twelfth 2-2/3 {12TH}
S040, 1, 084, = Piccolo 2 {PICC}
S041, 1, 083, = Fifteenth 2 {15TH}
S042, 1, 098, = Fife (Lieb) 1 {FIFE}
S043, 1, 154, = Piano 8 {PIANO}
S044, 1, 162, = Glockenspiel {GLOCK}
S045, 1, 163, = Xylophone {XYLO}
S046, 1, 156, = Wood Harp 4 {HARP}
S047, 1, 265, = Suboctave [B]
S048, 1, 271, = Unison Off [B]
S049, 1, 266, = Octave [B]
S050, 1, 269, = Solo Sub To Great {SOLO} [B]
S051, 1, 250, = Solo To Great {SOLO} [B]
S052, 1, 222, = MIDI On Great [B]

*** Solo - Upper Row**
S053, 4, 063, = Piccolo 4 {PICC}
S054, 4, 147, = Vox Humana 4 {VOX} [R]
S055, 4, 076, = Twelfth 2-2/3 {12TH}
S056, 4, 084, = Piccolo 2 {PICC}
S057, 4, 091, = Tierce 1-3/5 {TIERCE}
S058, 4, 095, = Larigot 1-1/3 {LAR}
S059, 4, 154, = Piano 8 {PIANO}
S060, 4, 162, = Glockenspiel {GLOCK}
S061, 4, 163, = Xylophone {XYLO}
S062, 4, 156, = Wood Harp 8 {HARP}
S063, 4, 166, = Chrysoglott {CHRYS}
S064, 4, 161, = Cathedral Chimes {CHIMES}
S065, 4, 269, = Suboctave [B]
S066, 4, 271, = Unison Off [B]
S067, 4, 270, = Octave [B]
S068, 4, 225, = MIDI On Solo [B]

*** Lower Row**
*** PEDAL Division**
S069, 3, 0 2, = Contra Violone 32 {VIOL}
S070, 3, 115, = Ophicleide 16 {OPH} [R]
S071, 3, 0 9, = Diaphone 16 {DIA}
S072, 3, 017, = Violone 16 {VIOL}
S073, 3, 117, = Oboe Horn 16 {OBOE} [R]
S074, 3, 012, = Bourdon 16 {BOUR}
S075, 3, 127, = English Post Horn 8 {HORN} [R]
S076, 3, 129, = Brass Trumpet 8 {TRUM} [R]
S077, 3, 128, = Tuba Horn 8 {TUBA} [R]
S078, 3, 131, = 'D' Trumpet 8 {TRUM} [R]
S079, 3, 031, = Open Diapason 8 {OPEN}
S080, 3, 040, = Tibia Clausa 8 {TIBIA}
S081, 3, 041, = Tibia Clausa Pizz. 8 {TIBIA}

*** Accomp. Lower Row**
S082, 2, 127, = English Post Horn 8 {HORN} [R]
S083, 2, 129, = Brass Trumpet 8 {TRUM} [R]
S084, 2, 128, = Tuba Horn 8 {TUBA} [R]
S085, 2, 131, = 'D' Trumpet 8 {TRUM} [R]
S086, 2, 031, = Open Diapason 8 {OPEN}
S087, 2, 040, = Tibia Clausa 8 {TIBIA}
S088, 2, 132, = Clarinet 8 {CLAR} [R]
S089, 2, 037, = Solo String 8 {STRING}
S090, 2, 034, = Violin 8 {VIOL}
S091, 2, 035, = Violin Celeste 8 {CEL} [Y]
S092, 2, 133, = Oboe Horn 8 {OBOE} [R]
S093, 2, 044, = Quintadena 8 {QUINT}
S094, 2, 042, = Concert Flute 8 {FLUTE}
S095, 2, 043, = Lieblich Flute 8 {LIEB}
S096, 2, 138, = Vox Humana 8 {VOX} [R]
S097, 2, 056, = Octave 4 {OCT}
S098, 2, 063, = Piccolo 4 {PICC}

*** Great Lower Row**
S099, 1, 113, = English Post Horn 16 {HORN} [R]
S100, 1, 114, = Brass Trumpet (ten c) 16 {TRUM} [R]
S101, 1, 115, = Ophicleide 16 {OPH} [R]
S102, 1, 116, = 'D' Trumpet (ten c) 16 {TRUM} [R]
S103, 1, 0 9, = Diaphone 16 {DIA}
S104, 1, 012, = Tibia Clausa (ten c) 16 {TIBIA}
S105, 1, 118, = Clarinet (ten c) 16 {CLAR} [R]
S106, 1, 120, = Orchestral Oboe (ten c) 16 {OBOE} [R]
S107, 1, 123, = Krumet (ten c) 16 {KRUM} [R]
S108, 1, 124, = Saxophone (ten c) 16 {SAX} [R]
S109, 1, 019, = Solo String 16 {STRING}
S110, 1, 017, = Violins 2 rks 16 {VIOL} [Y]
S111, 1, 121, = Vox Humana (ten c) 16 {VOX} [R]
S112, 1, 127, = English Post Horn 8 {HORN} [R]
S113, 1, 129, = Brass Trumpet 8 {TRUM} [R]
S114, 1, 128, = Tuba Horn 8 {TUBA} [R]
S115, 1, 131, = 'D' Trumpet 8 {TRUM} [R]
S116, 1, 031, = Open Diapason 8 {OPEN}
S117, 1, 040, = Tibia Clausa 8 {TIBIA}
S118, 1, 132, = Clarinet 8 {CLAR} [R]
GW319EX contiunued
S119, 1, 135, = Orchestral Oboe 8 {OBOE} [R]
S120, 1, 140, = Krumet 8 {KRUM} [R]
S121, 1, 141, = Saxophone 8 {SAX} [R]
S122, 1, 037, = Solo String 8 {STRING}
S123, 1, 034, = Violins 2rks 8 {CEL} [Y]

*** Solo - Lower Row**
S124, 4, 127, = English Post Horn 8 {HORN} [R]
S125, 4, 129, = Brass Trumpet 8 {TRUM} [R]
S126, 4, 128, = Tuba Horn 8 {TUBA} [R]
S127, 4, 131, = 'D' Trumpet 8 {TRUM} [R]
S128, 4, 031, = Open Diapason 8 {OPEN}
S129, 4, 040, = Tibia Clausa 8 {TIBIA}
S130, 4, 132, = Clarinet 8 {CLAR} [R]
S131, 4, 135, = Orchestral Oboe 8 {OBOE} [R]
S132, 4, 136, = Krumet 8 {KRUM} [R]
S133, 4, 141, = Saxophone 8 {SAX} [R]
S134, 4, 036, = Solo String 8 {STRING}
S135, 4, 034, = Violins 2 rks 8 {CEL} [Y]
S136, 4, 044, = Quintadena 8 {QUINT}
S137, 4, 138, = Vox Humana 8 {VOX} [R]

*** Center Rail**
*** ACCOMP. 2nd Touch**
S138, 5, 127, = English Post Horn 8 {HORN} [R]
S139, 5, 129, = Brass Trumpet 8 {TRUM} [R]
S140, 5, 128, = Tuba Horn 8 {TUBA} [R]
S141, 5, 031, = Open Diapason 8 {OPEN}
S142, 5, 132, = Clarinet 8 {CLAR} [R]
S143, 5, 154, = Piano 8 {PIANO}
S144, 5, 157, = Wood Harp 8 {HARP}
S145, 5, 156, = Wood Harp 4 {HARP}
S146, 5, 266, = Great Octave to Accomp {GREAT} [B]
S147, 5, 251, = Solo To Accomp {SOLO} [B]
S148, 5, 221, = MIDI To Accomp 2nd [B]

*** GREAT 2nd Touch**
S149, 7, 113, = English Post Horn 16-8 {HORN} [R]
S150, 7, 250, = Solo To Great {SOLO} [B]
S151, 7, 219, = MIDI On Great 2nd [B]

*** TREMULANTS Division**
S152, 8, 176, = Main
S153, 8, 178, = Main Strings
S154, 8, 183, = Clarinet
S155, 4, 178, = Solo
S156, 8, 179, = Solo String
S157, 8, 177, = Tibia
S158, 8, 181, = Vox/Sax
S159, 4, 181, = Tubas
S160, 8, 182, = Vibraharp Motor On

*** Stop Pistons:**
8, 194, = Master Expression
4, 175, = Wood Harp Reir
8, 197, = Melody Coupler
8, 195, = Percussion Unenclosed
8, 166, = Chrys>Vibe
8, 300, = (Blank)

R311 Stoplist
*** Pedal Division**
S001, 3, 115, = Ophicleide 16 {OPH} [R]
S002, 3, 009, = Diaphone 16 {DIA}
S003, 3, 012, = Tibia Clausa 16 {TIBIA}
S004, 3, 017, = Violone 16 {VIOL}
S005, 3, 127, = English Post Horn 8 {HORN} [R]
S006, 3, 128, = Tuba Horn 8 {TUBA} [R]
S007, 3, 031, = Open Diapason 8 {OPEN}
S008, 3, 040, = Tibia Clausa 8 {TIBIA}
S009, 3, 132, = Clarinet 8 {CLAR} [R]
S010, 3, 042, = Flute 8 {FLUTE}
S011, 3, 248, = Accomp. To Pedal {ACCOMP} [B]
S012, 3, 224, = MIDI On Pedal {MIDI} [B]
S013, 3, 202, = Bass Drum
S014, 3, 203, = Tap Cymbal (Brush)
*** ACCOMP. Division**
S015, 2, 127, = English Post Horn 8 {HORN} [R]
S016, 2, 128, = Tuba Horn 8 {TUBA} [R]
S017, 2, 031, = Open Diapason 8 {OPEN}
S018, 2, 040, = Tibia Clausa 8 {TIBIA}
S019, 2, 132, = Clarinet 8 {CLAR} [R]
S020, 2, 034, = Violins 2 rks 8 {CEL} [Y]
S021, 2, 042, = Concert Flute 8 {FLUTE}
S022, 2, 138, = Vox Humana 8 {VOX} [R]
S023, 2, 056, = Octave 4 {OCT}
S024, 2, 063, = Piccolo 4 {PICC}
S025, 2, 059, = Violins 2 rks 4 {CEL} [Y]
S026, 2, 065, = Concert Flute 4 {FLUTE}
S027, 2, 147, = Vox Humana 4 {VOX} [R]
S028, 2, 166, = Chrysoglott {CHRYS}
*** GREAT Division**
S029, 1, 113, = English Post Horn 16 {HORN} [R]
S030, 1, 115, = Tuba Horn 16 {TUBA} [R]
S031, 1, 009, = Diaphone 16 {DIA}
S032, 1, 012, = Tibia Clausa 16 {TIBIA}
S033, 1, 120, = Orchestral Oboe 16 {OBOE} [R]
S034, 1, 017, = Violins 2 rks 16 {CEL} [Y]
S035, 1, 121, = Vox Humana 16 {VOX} [R]
S036, 1, 127, = English Post Horn 8 {HORN} [R]
S037, 1, 128, = Tuba Horn 8 {TUBA} [R]
S038, 1, 031, = Open Diapason 8 {OPEN}
S039, 1, 040, = Tibia Clausa 8 {TIBIA}
S040, 1, 132, = Clarinet 8 {CLAR} [R]
S041, 1, 135, = Orchestral Oboe 8 {OBOE} [R]
S042, 1, 034, = Violins 2 rks 8 {CEL} [Y]
S043, 1, 042, = Concert Flute 8 {FLUTE}
S044, 1, 138, = Vox Humana 8 {VOX} [R]
S045, 1, 053, = Fifth (Tibia) 5-1/3 {5TH}
S046, 1, 056, = Octave 4 {OCT}
S047, 1, 063, = Piccolo 4 {PICC}
S048, 1, 059, = Violins 2rks 4 {CEL} [Y]
S049, 1, 076, = Twelfth 2-2/3 {12TH}
S050, 1, 084, = Piccolo 2 {PICC}
S051, 1, 098, = Fife (Flute) 1 {FIFE}
S052, 1, 162, = Glockenspiel {GLOCK}
S053, 1, 163, = Xylophone {XYLO}
S054, 1, 250, = Solo To Great {SOLO} [B]
S055, 1, 223, = MIDI On Great {MIDI} [B]
*** SOLO Division**
S056, 4, 113, = English Post Horn 16 {HORN} [R]
S057, 4, 115, = Tuba Horn 16 {TUBA} [R]
S058, 4, 012, = Tibia Clausa 16 {TIBIA}
S059, 4, 121, = Vox Humana 16 {VOX} [R]
S060, 4, 127, = English Post Horn 8 {HORN} [R]
S061, 4, 128, = Tuba Horn 8 {TUBA} [R]
S062, 4, 031, = Open Diapason 8 {OPEN}
S063, 4, 040, = Tibia Clausa 8 {TIBIA}
S064, 4, 132, = Clarinet 8 {CLAR} [R]
S065, 4, 135, = Orchestral Oboe 8 {OBOE} [R]
S066, 4, 034, = Violin 2 rks 8 {CEL} [Y]
S067, 4, 138, = Vox Humana 8 {VOX} [R]
S068, 4, 063, = Piccolo 4 {PICC}
S069, 4, 076, = Twelfth 2-2/3 {12TH}
S070, 4, 084, = Piccolo 2 {PICC}
S071, 4, 091, = Tierce 1-3/5 {TIERCE}

R311 continued
*** Center Section**
*** ACCOMP. Division**
S072, 2, 205, = Snare Drum
S073, 2, 209, = Tom Tom (Cast's)
S074, 2, 214, = Cow Bell (Wood Block)
S075, 2, 204, = Hi-Hat (Tamb.)
S076, 2, 203, = Tap Cymbal (Brush)
S077, 2, 198, = Alternate Traps [B]
S078, 2, 254, = Acc. Traps 2nd T. [B]
S079, 2, 223, = MIDI On Accomp. {MIDI} [B]
*** ACCOMP 2ND Division**
S080, 5, 127, = English Post Horn 8 {HORN} [R]
S081, 5, 128, = Tuba Horn 8 {TUBA} [R]
S082, 5, 040, = Tibia Clausa 8 {TIBIA}
S083, 5, 132, = Clarinet 8 {CLAR} [R]
S084, 5, 265, = Sub-Chrysoglott {CHRYS}
S085, 5, 266, = Great Octave {GREAT} [B]
S086, 5, 271, = Solo Unison {SOLO} [B]
S087, 5, 221, = MIDI On Acc. 2nd {MIDI} [B]
*** SOLO Division**
S088, 4, 166, = Chrysoglott {CHRYS}
S089, 4, 162, = Glockenspiel {GLOCK}
S090, 4, 163, = Xylophone {XYLO}
S091, 4, 161, = Cathedral Chimes {CHIME}
S092, 4, 225, = MIDI On Solo {MIDI} [B]
*** GENERAL Division**
S093, 8, 197, = Melody Coupler
R311 Continued
S094, 8, 194, = Master Expression
S095, 8, 198, = Acc Violin > Dolce
S096, 8, 166, = Chrys > Wood Harp
S097, 1, 300, = (Blank)
*** TREMULANTS Division**
S098, 8, 176, = Main
S099, 8, 178, = Solo
S100, 8, 177, = Tibia/Vox

R211 Stoplist
*** PEDAL Division**
S001 (3 - 115) = Ophicleide 16 {OPH} [R]
S002 (3 - 9) = Diaphone 16 {DIA}
S003 (3 - 12) = Tibia Clausa 16 {TIBIA}
S004 (3 - 127) = English Post Horn 8 {HORN} [R]
S005 (3 - 128) = Tuba Horn 8 {TUBA} [R]
S006 (3 - 31) = Open Diapason 8 {OPEN}
S007 (3 - 40) = Tibia Clausa 8 {TIBIA}

S008 (3 - 132) = Clarinet 8 {CLAR} [R]
S009 (3 - 42) = Flute 8 {FLUTE}
S010 (3 - 248) = Accomp. To Pedal {ACCOMP} [B]
S011 (3 - 224) = MIDI On Pedal {MIDI} [B]
S012 (3 - 202) = Bass Drum
S013 (3 - 203) = Cymbal
*** ACCOMP Division**
S014 (2 - 127) = English Post Horn 8 {HORN} [R]
S015 (2 - 128) = Tuba Horn 8 {TUBA} [R]
S016 (2 - 31) = Open Diapason 8 {OPEN}
S017 (2 - 40) = Tibia Clausa 8 {TIBIA}
S018 (2 - 132) = Clarinet 8 {CLAR} [R]
S019 (2 - 34) = Violins 2 rks 8 {CEL} [Y]
S020 (2 - 42) = Concert Flute 8 {FLUTE}
S021 (2 - 138) = Vox Humana 8 {VOX} [R]
S022 (2 - 63) = Piccolo 4 {PICC}
S023 (2 - 65) = Concert Flute 4 {FLUTE}
S024 (2 - 166) = Chrysoglott {CHRYS}
S025 (2 - 205) = Snare Drum
S026 (2 - 209) = Tom Tom
S027 (2 - 204) = Tambourine
S028 (2 - 203) = Cymbal
S029 (2 - 223) = MIDI On Accomp. [B]
*** SOLO Division**
S030 (1 - 113) = English Post Horn 16 {HORN} [R]
S031 (1 - 115) = Tuba Horn 16 {TUBA} [R]
S032 (1 - 9) = Diaphone 16 {DIA}
S033 (1 - 12) = Tibia Clausa 16 {TIBIA}
S034 (1 - 17) = Violins 2 rks 16 {CEL} [Y]
S035 (1 - 121) = Vox Humana 16 {VOX} [R]
S036 (1 - 128) = Tuba Horn 8 {TUBA} [R]
S037 (1 - 31) = Open Diapason 8 {OPEN}
S038 (1 - 40) = Tibia Clausa 8 {TIBIA}
S039 (1 - 132) = Clarinet 8 {CLAR} [R]
S040 (1 - 135) = Orchestral Oboe 8 {OBOE} [R]
S041 (1 - 34) = Violins 2 rks 8 {CEL} [Y]
S042 (1 - 138) = Vox Humana 8 {VOX} [R]
S043 (1 - 53) = Fifth 5-1/3 {5TH}
S044 (1 - 56) = Octave 4 {OCT}
S045 (1 - 63) = Piccolo 4 {PICC}
S046 (1 - 59) = Violins 2 rks 4 {CEL} [Y]
S047 (1 - 76) = Twelfth 2-2/3 {12TH}
S048 (1 - 84) = Piccolo 2 {PICC}
S049 (1 - 91) = Tierce 1-3/5 {TIERCE}
S050 (1 - 162) = Glockenspiel {GLOCK}
S051 (1 - 163) = Xylophone {XYLO}
S052 (1 - 161) = Cathedral Chimes {CHIME}
S053 (1 - 225) = MIDI On Solo {MIDI} [B]
*** TREMULANT Division**
S054 (8 - 176) = Main
S055 (8 - 177) = Tibia\Vox

CAPTURE MEMORY SAVE - This is sent as a SYSEX message when called for from the console controller. If you do not have a console controller, but do have a computer, the CAPTURE MEMORY SAVE (or individual items as listed below) may be requested from the ALLEN console by your computer. Again, this example is how Cakewalk would ask the ALLEN console for the information.

"Allen Capture Memory Save"	F0 00 00 35 00 09 F7
"Allen Cres/Tutti B"	F0 00 00 35 00 05 F7
"Allen Cres/Tutti A"	F0 00 00 35 00 04 F7
"Allen Piston Configuration"	F0 00 00 35 00 00 F7
"Allen Capt Mem 1"	F0 00 00 35 00 02 00 F7
"Allen Capt Mem 2"	F0 00 00 35 00 02 01 F7
"Allen Capt Mem 3"	F0 00 00 35 00 02 02 F7
"Allen Capt Mem 4"	F0 00 00 35 00 02 03 F7
"Allen Capt Mem 5"	F0 00 00 35 00 02 04 F7
"Allen Capt Mem 6"	F0 00 00 35 00 02 05 F7
etc.	

Recording via MIDI - One of the "problems" with MIDI is the speed (or lack of it) for sending large amounts of data in a short period of time. The only time this is a problem on an organ system is when a piston is pressed. If all of the individual stop data is sent simultaneously through MIDI, there is a chance of MIDI slowing down the more important note information data. In order to avoid this problem, Allen sends only piston change numbers (PROGRAM CHANGE) when a piston is sent. When the recording is played back, the Allen receives the PROGRAM CHANGE number and "presses" that piston; reading the individual stop data from the normal piston memory.