

MAAS-ROWE
DCB2 *Digital Chronobell*[®] I
Tape Player

MODEL DCB1 DIGITAL CHRONOBELL OPERATING INSTRUCTIONS

INTRODUCTION

In order to get the greatest benefit from the **DIGITAL CHRONOBELL** system, read through this manual to learn all of the possible functions.

To become familiar with the system, we recommend trying out the following first. Practice entries can easily be erased before the permanent schedule is entered.

1. Practice setting the DAY and TIME.
2. Try entering an event in the schedule.
3. Use the procedures **TO REVIEW EVENTS** and **TO REVIEW DAYS**.
4. Use the **TO DELETE AN EVENT** procedure to delete the event you entered.
5. Use the procedure **TO START EVENTS MANUALLY** to actually start an event.
6. Try entering a **RANGE** of **CLOCK STRIKES** using the procedure **TO ENTER A RANGE OF CLOCK STRIKES**. This allows you to enter **CLOCK STRIKES** for an entire day, group of days, or week in a few steps. You can also enter them one at a time using the regular **ENTER** procedure. If there are a lot of them to enter, the **RANGE** procedure is more efficient.

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ENTERING YOUR REAL SCHEDULE

After you are familiar with most of the procedures for setting the time and entering schedules you can use the **COMPLETE SYSTEM CLEAR** procedure to erase your practice schedules. After that, the real schedule can be entered.

1. Determine what schedule you want your **CLOCK STRIKES** to ring on and enter these using the **RANGE** feature. If, for example, you want the **CLOCK STRIKES** to ring from 8:00 AM to 10:00 PM on certain days, but will want the **ANGELUS** at 12:00 Noon and 6:00 PM you can enter the range of clock strikes **FROM 8:00 AM TO 10:00 PM**. You can then use the **ENTER** procedure to enter the **ANGELUS** at 12:00 and 6:00. The Angelus will replace the Clock Strikes at those times.
2. Use **ENTER** to enter all the other events you wish to schedule.
3. Use **EVENT REVIEW** and/or **DAY REVIEW** to check your schedule. **BE SURE THE TIMES SCHEDULED ARE FOR THE CORRECT AM or PM.**
4. Enter the time, being careful to select the correct AM/PM). Warning: if you enter the time with the wrong AM/PM, the entire schedule will ring 12 hours off!

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TO SET DAY & TIME

	ACTION	RESULT
1.	Press SET TIME button.	All DAY lights blink.
2.	Press desired DAY .	DAY selected lights. HOURS section of the display blinks.
3.	Use FWD/BACK buttons to select hour with correct AM/PM.	HOUR selected is displayed.
4.	Press SET .	HOURS are set. MINUTES section of the display blinks.
5.	Use FWD/BACK buttons to select minutes.	MINUTES selected are displayed.
6.	Press SET .	MINUTES are set. System returns to AUTO .

TO SET TIME TO NEAREST SECOND:

In Step 5. select next minute coming up, but don't push **SET** button until exact second.

CURFEW:

A built-in curfew prevents entering the time between the 10:00 PM and 5:00 AM. This can be disabled by the installer if desired.

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TO ENTER A RANGE OF CLOCK STRIKES:

ACTION	RESULT
1. Press RANGE .	"All" will appear in the display.
2. Press RANGE again.	"Hr" will appear in the display.
3. Press RANGE again.	"Hr 30" will appear in the display.
4. Select All , Hr , or Hr 30 depending on whether you want to enter All Quarters, Hours only, or Hours and Half Hours.	Whichever you select appears in the display. (RANGE can be pressed as many times as needed to select the desired display)
5. Press SET .	The DAY lights will blink, reminding you to select the day or days you want the clock strikes to ring on.
6. Press DAYS desired.	The DAYS you select will light. You can press a day twice to cancel it.
7. Press SET .	The FROM light will come on.
8. Use BACK/FWD buttons to select time and AM/PM you want clock strikes to start ringing.	The Hour <i>from which the clock strikes will start</i> is displayed.
9. Press SET .	The TO light will come on.
10. Use BACK/FWD buttons to select time and AM/PM you want clock strikes to stop ringing.	The Hour <i>to which the clock strikes will sound</i> is displayed.
11. Press SET .	You have set the clock strikes for the indicated range and selected days. System returns to AUTO . If you want to check the schedule you have entered, use REVIEW DAYS or REVIEW EVENTS .

NOTE 1: Most systems are provided with a **CURFEW** feature which does not permit entering events between 10:59 P.M. and 4:59 A.M. This can be disabled by the installer if desired.

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TO ENTER AN EVENT:

"Events" you want to take place automatically are entered using this procedure. The general idea is to select an event to enter, decide what day or days you are going to want it to occur on and then decide what time it will occur on those days. If it is to occur more than one time on those days, each time must be entered separately by repeating the procedure.

ACTION:	RESULT:
1. Press ENTER .	EVENT lights blink
2. Press desired EVENT .	EVENT selected lights. DAY lights blink.
3. Press DAYS desired.	The DAYS you select will light. You can press a particular day twice to cancel it.
4. Press SET .	HOURS section of the display blinks.
5. Use FWD/BACK buttons to select hour with correct AM/PM.	HOURL selected is displayed.
6. Press SET .	HOURL is set. MINUTES section of the display blinks.
7. Use FWD/BACK buttons to select minutes.	MINUTES selected are displayed.
8. Press SET	EVENT has been entered. EVENT lights will blink again so you can enter additional events. If you want to, go back to <i>Step 2</i> . If you don't, press AUTO . The system returns to normal.

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TO REVIEW EVENTS

To see what is programmed to take place you can use this procedure.

ACTION	RESULT
1. Press REVIEW EVENTS .	EVENT lights blink.
2. Press desired EVENT .	Earliest time the event is scheduled is displayed. The days it will take place at that time light. If the event being reviewed is not scheduled at any time, " 0:00 " is displayed.
3. Press same EVENT .	The <i>next time</i> the event is scheduled at is displayed (and the days lighted). You can continue to use this event button to display all the times for which it is scheduled.
4. Press any other EVENT .	You can review the schedule of this event in the same manner.
5. Press AUTO .	System returns to normal.

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TO REVIEW BY DAYS

It is sometimes desired to review by days to see what events are scheduled to take place on each day.

ACTION	RESULT
1. Press REVIEW DAYS .	DAY lights blink.
2. Press desired DAY .	Earliest time an event is scheduled for on that DAY is displayed. The event that will take place at that time is lighted. If there are no events scheduled on the day being reviewed, " 0:00 " is displayed.
3. Press same DAY .	The <i>next time</i> an event is scheduled is displayed, and the event is lighted. You can keep pressing the same DAY button to see all the times and events scheduled.
4. Press any other DAY .	You can review this day's schedule in the same manner.
5. Press AUTO .	System returns to normal.

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TO CHANGE THE LENGTH OF A SCHEDULED EVENT

Some events have adjustable length (the amount of time they will ring). This procedure is for adjusting the length of scheduled events. The length of manual events can be different than the length of scheduled events. (Adjustment of manual event length is covered under "Manual Events".)

The *Display* indicates *Minutes* and *Seconds* while you are in this mode, rather than the usual *Hours* and *Minutes*.

The *Memory Player* is treated differently than the rest of the events, since it has its own control system for determining how many songs will play, etc.

	ACTION	RESULT
1.	Press SELECT LENGTH .	EVENTS with adjustable length blink.
2.	Press desired EVENT .	<i>Minutes</i> section of the display blinks.
3.	Use BACK/FWD buttons to select minutes of duration.	<i>Minutes</i> selected are displayed.
4.	Press SET .	<i>Minutes</i> are set. <i>Seconds</i> section of the display blinks.
5.	Use BACK/FWD buttons to select seconds.	<i>Seconds</i> selected are displayed.
6.	Press SET .	Duration for this event is set. System returns to normal.

Each event with an adjustable length can be set independently of the other events. To see what length is in effect without changing it you can press **LENGTH**, followed by the **EVENT** and the length (duration) of that event is displayed in minutes and seconds.

Press **AUTO** to leave the length as it is.

The length displayed for some events may be slightly different than what you entered. For example, you may enter one minute and find that only 59 seconds or perhaps one minute and two seconds are displayed. This is because certain events such as the Swinging Bells and Pealing Bells must complete the last stroke of the bell swing. The system displays the length closest to your request.

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TO CHANGE THE BELLS IN THE PEAL

Any or all of the Bells in the system can be used in the Peal. You can select what sounds best to you.

ACTION	RESULT
1. Press SELECT PEAL .	BELL lights will blink, indicating which bells are presently used for the peal.
2. Press desired BELLS .	The Bells you select will stay on. Pressing again will turn them off. Continue until you have the bells you want.
3. Press AUTO .	System returns to normal.

TO CHANGE THE BELLS USED IN THE HIGH, MED, AND LOW SWINGING BELLS

Any of the Bells in the system can be used for any of the Swinging Bells. If you want to change them from the factory settings you can use the following special procedure:

ACTION	RESULT
1. Press SELECT PEAL , followed by the SWINGING BELL desired (High, Med, or Low).	The BELL light used for that SWINGING BELL will blink.
2. Press desired BELL .	Select the bell you want by pressing a bell button.
3. Press AUTO .	System returns to normal.

You can repeat this procedure for any of the *Swinging Bells*. However, it is possible to set the High one to a lower bell than the low one, etc. so don't set it up in a way that would be confusing to another operator.

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TO START EVENTS MANUALLY

Any event except the clock strikes can be started manually.

Events that have an adjustable length will display the length setting before starting. You have 15 seconds to use **FWD/BACK** to begin the procedure listed below for changing the length. Otherwise, the length displayed will be in effect. Manual length changes do not affect the length of scheduled events which are set separately using the **LENGTH** button.

ACTION	RESULT
1. Press MANUAL once.	MANUAL light will come on.
2. Wait about ten seconds, for amplifier warm up, then press EVENT you want to start.	Event starts immediately unless it has an adjustable length. System returns to AUTO.

If an event has an *adjustable length*, the event will light, but it will not start yet. The *duration*, in minutes and seconds (or number of tolls in the case of the toll), will blink in the display.

ACTION	RESULT
3. If the length shown is O.K., Press EVENT again.	Event will start immediately.
4. If you want to change the length, Press BACK/FWD to change the <i>minutes of duration</i> .	<i>Minutes</i> selected are displayed.
5. Press SET .	<i>Minutes</i> are set, <i>Seconds</i> blink.
6. Use BACK/FWD to select seconds.	<i>Seconds</i> selected are displayed.
7. Press SET .	Event starts and system returns to AUTO.

After the duration is changed, the system will recall the new duration next time the event is manually started. You can then change it again if desired. These changes do not affect the duration of *scheduled events* which can only be changed by using the **LENGTH** button.

The number of songs the **MEMORY PLAYER** will play can not be changed at the clock and must be done at the **MEMORY PLAYER** control panel.

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TO STOP ANY EVENT IN PROGRESS

ACTION

Press **STOP**.

RESULT

This will stop any event in progress.

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TO PLAY CHRONOBELL BELLS MANUALLY

The bells connected directly to the clock can be sounded individually as follows:

	ACTION	RESULT
1.	Press MANUAL .	MANUAL light will be on.
2.	Press BELLS as desired.	Bells played will sound.
3.	Push AUTO .	System returns to normal.

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BLINKING MANUAL

You can use this to lock the system in **MANUAL** until you want to return to **AUTO**. While in **BLINKING MANUAL**, no events will start from the clock, but any event can be started manually. To lock the system in **BLINKING MANUAL**, press the **MANUAL** button twice. The **MANUAL** light will blink steadily, to indicate that the system is locked in **MANUAL**. To return to automatic operation press **AUTO**.

BLINKING MANUAL will be invoked whenever the **TOWER** Keyswitch at the console is **ON**. When this happens, many of the procedures normally performed at the clock control panel will not work. To regain control you must turn off the **TOWER** switch at the console and/or the key switch at the Remote Control. As long as **BLINKING MANUAL** is on, nothing will start automatically.

In addition, if the console **VOLUME** control is turned on, the **PLAYER** can not be operated from the clock. In this condition, the scheduled **PLAYER** events can not be displayed using **EVENT REVIEW** or **DAY REVIEW**.

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TO DELETE AN EVENT

Use **REVIEW DAYS** to display the **EVENT** and **DAY** to be deleted. Then press **DELETE**. The deleted event will no longer be displayed. The next scheduled event for that day will be displayed instead. Be careful not to press **DELETE** again or that event will also be deleted. Press **AUTO** to return to normal.

(Alternate) You can also use **REVIEW EVENTS** to display the event and time you want to delete. However, the event will be deleted for *all days it occurs* at the time displayed when **DELETE** is pressed.

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RULES OF SCHEDULING PRIORITY

1. Any event entered at the *same time and day as a previous event* automatically replaces it.
2. If an event is in progress when another event is scheduled, it will prevent the scheduled event from occurring.
3. Any scheduled event that it would **OVERLAP** a following event will have priority. The event being overlapped will not start. Events that are overlapped will light the **OVERLAPPED** indicator when they are checked in **REVIEW DAYS** mode. **REVIEW EVENTS** mode does not indicate overlaps. Events overlapped by the **MEMORY PLAYER** will not show as **OVERLAPPED**, even though they are.
4. Deleting **OVERLAPPED** events. Use **REVIEW DAYS** to see overlapped events. While the event being overlapped is displayed and the **OVERLAPPED** light is on, press **DELETE** to delete the event being overlapped.
5. Changing the **LENGTH** of scheduled events can cause overlaps within your schedule. For example, if the **HIGH SWINGING BELL** is scheduled for 2 minutes before the hour, and has a duration of three minutes, it will overlap the hour strike.
6. Some events can not be scheduled as close as one minute apart without an **OVERLAPPED** condition occurring. It is best to schedule successive events a minimum of 2 minutes apart.
7. The **LENGTH** entered for the **PEAL** and **SWINGING BELLS** may not be displayed exactly as entered. For example, if **1 Minute and 00 seconds** is entered, the display may indicate **59 seconds** or **1 Minute and 02 seconds**. This is because the last stroke of the bell ring could not be completed in the time requested.
8. The **CLOCK STRIKE** starts the *Hour Melody* about a minute before the hour. This gives the melody a chance to finish so the first stroke of the hour sounds exactly as the time changes.
9. When using the **TOLL**, the display shows *minutes and seconds* for the scheduled length mode. However, in the **MANUAL** mode, it shows the number of tolls.
10. The **SP** button is reserved for "special" requirements.
11. The **AUX. 1** button is reserved for an optional tape player.
12. The **AUX. 2** button is reserved for custom orders.

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HOLIDAY SCHEDULE

The **HOL** button is used to activate the **HOL** (Holiday) schedule. Any event can be scheduled to ring on **HOL** like any other day. However, **HOL** is only activated if the **HOL** button has been pressed and the **HOL** light remains.

Whenever the **HOL** light is on, the **HOL** schedule is in effect instead of the regular day of the week.

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COMPLETE SYSTEM CLEAR

This procedure clears the entire memory and erases everything that may have been entered by the user. It is useful for starting over after practicing with the system. This means you can learn how to use the system, then clear the entire schedule out before entering your real schedule. (Otherwise, you would have to go back in and delete each item, which could be tedious).

A **SYSTEM CLEAR** should always be done when the system is first installed to be sure nothing extraneous is in the memory.

If a lightning storm or other electrical disturbance seems to have caused any problems in the system, a **SYSTEM CLEAR** should be performed and the schedules and time re-entered.

To perform a **SYSTEM CLEAR** press the following sequence of buttons:

1. **MANUAL**
2. **SUN**
3. **HOL**
4. **MON**
5. **SAT**

The display will change to **8:00 AM**.

The day will change to **MON**.

No Events will be scheduled at any time.

You now can enter the desired day, time and schedules.

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BATTERY BACKUP

The system uses two Type AA NI-CAD batteries to keep time intact during a power outage. After power is restored, the batteries will re-charge automatically. Fully charged batteries can maintain the correct time for appx. 30 days.

During a power outage, no scheduled events will ring, nor can they be operated manually.

When the power is restored, the system will resume ringing on schedule.

REPLACING BATTERIES

The batteries should be changed every five years.

THE FOLLOWING SHOULD ONLY BE DONE BY SOMEONE QUALIFIED TO SERVICE ELECTRONIC EQUIPMENT:

Remove the back of the cabinet.

Observe the orientation of the existing batteries. It is very important to insert the new batteries with the correct orientation.

Remove the batteries from their holders on back of the clock.

Replace with the proper type of battery. Be sure to insert with the correct orientation . Each holder is marked with a +.

DO NOT USE REGULAR DRY CELLS OR ALKALINE BATTERIES. THESE ARE NOT DESIGNED TO BE RECHARGED AND MIGHT EVENTUALLY EXPLODE. USE ONLY NI-CAD RECHARGEABLE BATTERIES

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DEFAULT LENGTHS

The length of some events can be changed by the user. However, if no adjustment is made by the user, the following lengths will apply by default :

LOW SWINGING BELL	One minute and two seconds (1:02)
MED SWINGING BELL	Fifty Nine seconds (0:59)
HIGH SWINGING BELL	One minute (1:00)
PEAL	One minute and twenty seconds (1:20)
TOLL	Two minutes (2:00) except MANUAL TOLL is 12 tolls.

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WARNING MESSAGES AND ERROR RECOVERY

There are number of situations which result in warning lights being ON or actual warning messages displayed.

"**Err**" will be displayed if you try to program a time strike or Westminster melody at a time other than the correct quarter. For example, if you try to schedule the Clock Strike for 12:02 PM, the system will not accept the entry and will display "**Err**". To start over, press **SET** and re-enter, or press **MANUAL** or **AUTO**.

"**Full**" will be displayed when you have scheduled enough events to equal the capacity of the system. To recover, press **MANUAL** or **AUTO**. The system is capable of scheduling all the Clock Strikes and 128 additional events. Each time and day an event is scheduled counts against the 128, unless the event is a Clock Strike.

MANUAL has two ON states -- **STEADY** and **BLINKING**. Pressing **MANUAL** once puts the system in **STEADY MANUAL**. If you start an event while in this mode, the system reverts to **AUTO** as soon as the event starts. If no events are started, the system will return to **AUTO** automatically after 15 minutes. If you press **MANUAL** twice, the **MANUAL** light will blink. As long as it is blinking the system will stay in **MANUAL**. You can override it from the front panel by pushing **AUTO** unless it is being held in **MANUAL** by the Keyboard Carillon Control. Repeatedly pressing **MANUAL** lets you change **BLINKING MANUAL** to **MANUAL** and vice versa.

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DIAGNOSTICS

These are special procedures which are normally only used when the system is being tested or serviced.

LIGHT TEST: With system in **AUTO** press the **DELETE** button. This will illuminate all lights and all segments of the display. If any lights do not work it would indicate they have burned out or failed and the system requires service.

RAM TEST: The random access memory (RAM) has over 2,000 memory cells. It would be possible for one of these cells to be defective without being detected by the user until that particular cell was required. The RAM TEST procedure loads 5 different codes into each memory cell of the RAM and checks the codes. This verifies that all cells of the RAM are good. The test takes about 2 minutes. To run this test press **MANUAL**. Next, Press and Hold the **DELETE** button while you enter the code **SUN, HOL, MON, SAT**, (SAME AS SYSTEM CLEAR CODE EXCEPT YOU HOLD THE DELETE BUTTON WHILE DOING IT). The word "**help**" will appear in the display. Press **DELETE** again. "**pass**" should appear in the display and, after a brief pause, the "**help**" will re-appear indicating that all the cells of the memory are good. If any memory cells are bad, the **SP** light will come on. If it does, run the test again to be sure. If the **SP** light comes on consistently, the RAM chip should be replaced.

BELL STRIKER ADJUST: The bell buttons are normaly "one-shot" devices. This means, when you push them they activate the bell striker, but holding the button in does not hold the bell striker on.

However, it is sometimes desirable while adjusting the strikers to hold the striker on as long as you hold in the button. To do this, put the system into the "**help**" mode (see RAM test). In this mode, the buttons will hold the strikers on as long as they are pressed.

TO RETURN TO NORMAL MODE: Press **AUTO** or **MANUAL**.