

## ASPOT05

# Operating Instructions

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**BALDWIN BOXALL**  
COMMUNICATIONS

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### Thank you for purchasing a Barnes Sound Store

The **Multo** and **MultoRTC** Digital Sound Stores are up-to-date audio playback units for Public Address and Voice Alarm installations.

Playbacks may be continuous, self-trigger on a regular basis or triggered from an external stimulus. Opening or Closing Contacts may be used in Momentary, Alternate, Fleeting or One-shot styles for each of the sixteen trigger contact inputs. The Multo features an RS232 control port that simulate sixty-four trigger inputs. The MultoRTC features, instead, a real-time clock so that it may perform single or repeating playbacks at specific dates and times.

Sixty-four recordings may be downloaded into the Multo’s SmartMedia memory for attachment to the triggers. Download is fast, using the Universal Serial Bus (USB). For the MultoRTC only sixteen recordings may be accommodated.

A system of Priorities arbitrates between conflicting triggers if one attempts to start a playback when another is already running.

The Sound Store’s memory is non-volatile – it will not be lost from power failure and does not require the USB connection to operate.

# Making a Recording for the Sound Store

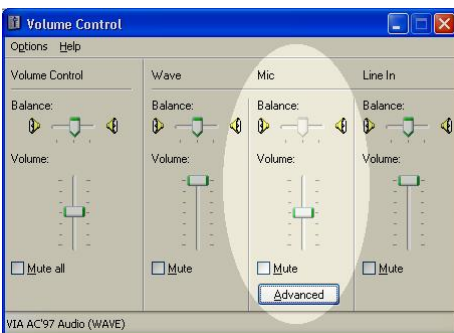
Quick  
Start  
Page 1



This sheet helps you to make good recordings for playback using the Sound Store.

## Using CoolEdit to make new recordings for the Sound Store.

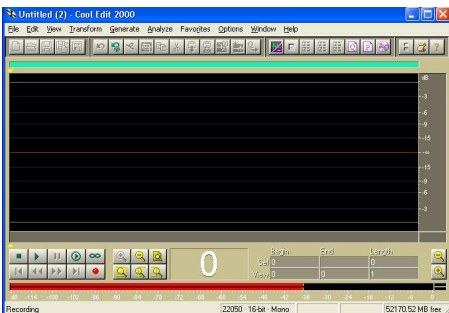
You may already have all the recordings you need but, if you need to record something new, this sheet describes how to make a recording using a microphone connected to the PC.



1. Make sure that the Windows Volume Control Panel has the microphone volume set. You can get the Volume Control Panel on screen by double-clicking on the Loudspeaker Icon on the Task Bar at the bottom-right of the PC screen

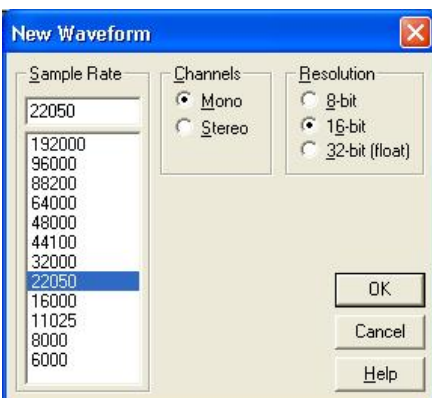


2. Start CoolEdit, the audio editor provided with the Sound Store.



3. Press key F10 to show the red bars at the bottom of the editor window — these show the recording volume and let you adjust things before you record.

4. Speak into the microphone from about 6 inches away, using your normal announcing manner, and adjust Windows Volume Control Panel's Mic Volume slider until the red bars just reach the -6 point.



5. Press F10 again to remove the red bars, then use the **File | New** menu to set up a new file. Be sure to set the **Sample rate** between 8000 and 22050, the **Channels** to **Mono** and the **Resolution** to **16-bit**.

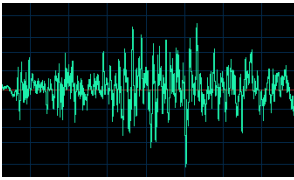
6. Press the red Record button and set the **Start Recording** option to **Right Away**, then click OK

7. Speak the announcement, then press the record button again to stop when you have finished.

Page 2 helps you to edit and adjust your recording

Note: You may already have some announcements or alarms recorded that you want the Sound Store to play. The most appropriate settings are sample rate 16000 or 22050, Mono and resolution 16-bit. You can use CoolEdit to do this.

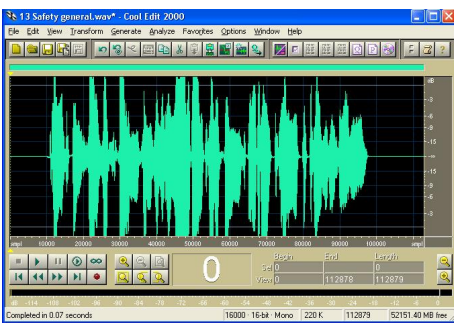
# Editing your Recording



This sheet helps you to edit recordings ready for upload to the Sound Store.

## Using CoolEdit to edit recordings for the Sound Store.

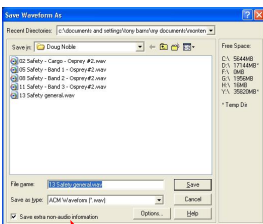
It is likely that the recording you have made will need a little tidying up and, perhaps, level adjustment. This sheet helps you through the process.



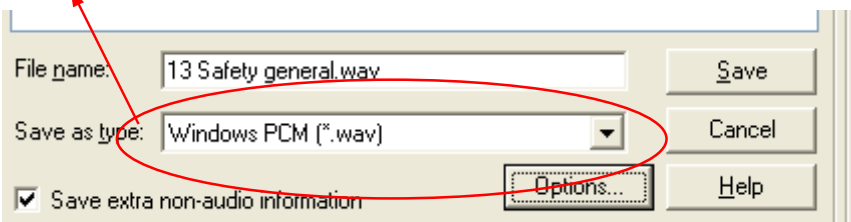
1. Check that the recording's volume has the correct level. On the left you see a recording that is too loud — the wave hits the top and bottom of the window, This announcement must be recorded again. Recordings that fill less than half the window height should also be recorded again.



2. If you have a length of silence at the start and/or end of the recording that you do not want to include, use the mouse to highlight the silence and then delete it (the example shown left has some silence at the start which has been highlighted ready for deletion).



3. Save the file using a useful name that describes its use; e.g. Unattended Baggage. Be sure to save the file in Windows PCM format (.wav)



**Page 3 shows you how to upload recordings to the Sound Store**

Note: You may already have some announcements or alarms recorded that you want the Sound Store to play. Make sure that they use Windows PCM format. You can use CoolEdit to check and, if necessary, correct this.

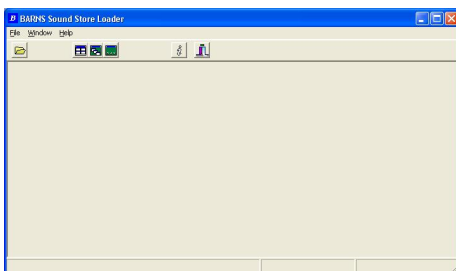
# Choosing Recordings for the Sound Store



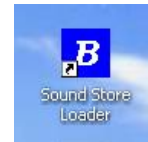
This page helps you choose files for loading into the Sound Store

## Using Barns Sound Store Loader to send Recordings to the Sound Store

Now that you have a collection of announcements and alarms, use this page to assist in setting up the audio files. The next page helps you set their trigger conditions.



1. Open the Sound Store Loader from the Start menu [All programs -> Barns -> Sound Store Loader] or by double-clicking on its icon



2. Use the File | Open menu item to show the available Sound Stores (you may have only one).

3. Select your Sound Store from the list and click Proceed.

4. The Sound Store window opens and you will see a number of tabs along its top which represent the files that the Sound store can accommodate. Underneath there are all the settings you should inspect and, if needed, alter.



5. Select the Tab corresponding to the touch-screen button you wish to use to trigger a recording.

6. Use the Trigger | Choose Wave file menu item to browse for the recording you wish to use.



7. When you click Open, the file name will be shown on the Recording's File Name box, with its duration

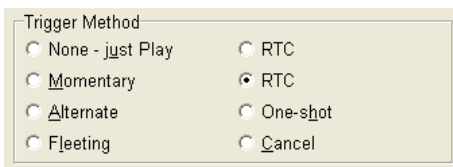
# Setting attributes that trigger playback



This page helps you set attributes for playing back announcements from the Sound Store

## Using Barns Sound Store Loader to send Recordings to the Sound Store

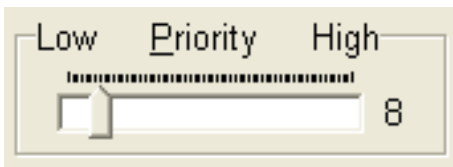
Now that you have chosen the announcements and alarms, use this page to assist in setting up their trigger conditions



Trigger Method

<input type="radio"/> None - just Play	<input type="radio"/> RTC
<input type="radio"/> Momentary	<input checked="" type="radio"/> RTC
<input type="radio"/> Alternate	<input type="radio"/> One-shot
<input type="radio"/> Fleeting	<input type="radio"/> Cancel

1. Set the kind of event that will make the announcement play. If you want to use a Touch Screen to start a playback, choose the One-shot style. This will cause the announcement to play once, by just touching the button.

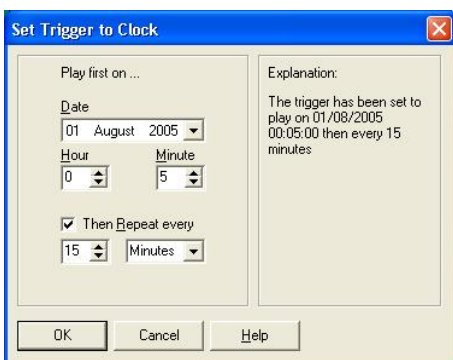


Low Priority High

8

2. If you have an important message that should override anything else that might be playing, set the Priority level to a high number. All normal announcements can have the same priority level.

3. If you want announcements to play automatically, set the RTC style instead.



Set Trigger to Clock

Play first on ...

Date: 01 August 2005

Hour: 0 Minute: 5

Then Repeat every 15 Minutes

Explanation:  
The trigger has been set to play on 01/08/2005 00:05:00 then every 15 minutes

OK Cancel Help

4. To set the date and time for automatic playback, click the Set Trigger to Clock button. This will show the dialog you see on the left. It has a Date setting, a Time setting and a Repeat checkbox. On the right you see an explanation of the current setting. You can set a recording to play once, on a particular date and time, or you can have the announcement repeat every so-often after a particular starting date and time. Be sure to set the starting time correctly for repeating announcements.

5. Change the setting to suit your requirements and read the explanation to verify it.

# Uploading files to the Sound Store



This page helps you send recording and attribute files to the Sound Store

## Using Barns Sound Store Loader to send Recordings to the Sound Store

Now that you have set the files and their trigger conditions, this page helps you upload them to the Sound Store.



1. When all your recordings and their trigger conditions have been set up on each of their Tabs, you can send them to the Sound Store. Use the Store | Upload menu item to show the Load Sound Store dialog.
2. Most often you will leave the Force Upload of all wave files checkbox clear. Only set this if you want to overwrite any similar files in the Sound Store.
3. Click Start and the files are sent to the Store.
4. Close the Sound Store Loader when complete.



## Understanding Trigger Styles

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Triggers define what makes the recording start to play back. There are various possibilities:

- **None—Just Play**
- **Momentary-action external contact**
- **Alternate-action external contact**
- **Fleeting external contact**
- **One-shot external contact**
- **Internal timer**
- **Cancel Play**

### **None - Just Play**

No trigger action is necessary. The trigger's recording will play as soon as power is applied to the Multo or MultoRTC and will only stop if overridden by another trigger of a higher priority. The recording that was interrupted will play again when the interrupting recording has finished playing.

Note that Just-Play playback cannot be stopped by a Cancel trigger.

### **Momentary-action external contact**

Wired to an external contact. The trigger's recording plays as long as the contact is asserted.

Playbacks started with Momentary contacts continue to play repeatedly until the Momentary contact is released – they do not stop by themselves. The playback can, however, be interrupted by another trigger with a higher priority.

Also note that a Cancel button does not stop a Momentary trigger. This is important in safety systems where the continued assertion of an alarm must not be cancelled.

### **Alternate-action external contact**

Wired to an external contact. The trigger's recording starts and stops on alternate assertions of the contact (Push-On, Push-Off).

As an example, consider a pushbutton with contacts that close when you push the button. You wire the button to the trigger's contact input and set the trigger to 'Alternate' and 'Normally Open'. Now when you push the button the playback will start and keep playing whilst you release the button. To stop the playback you must push the button again.

A playback started with the Push On of an Alternate contact continues to play repeatedly until the Push Off – it will not stop by itself. It can, however, be interrupted by another trigger with a higher priority. Also note that a Cancel button does not stop an Alternate trigger.

### **Fleeting-action external contact**

Wired to an external contact. The trigger's recording starts when the contact is asserted and plays continuously.

A playback started with a Fleeting contact continues to play repeatedly until cancelled by another trigger input set to 'Cancel'. It can, however, be interrupted by another trigger with a higher priority.

### **One-shot external contact**

Similar to a timed message but manually triggered and maintained by a contact input. Playback stops at the end of the message after the contact is released. A Cancel trigger may be used to abort playback of a One-Shot announcement. Playback will also be aborted if interrupted by another trigger of higher priority.

*(Continued on page 9)*

**Internal Timers (for Multo : Seconds and Minutes)**

No need to wire to any external contact. The trigger's recording starts to play automatically when the period you define has elapsed. It plays once and stops, then waits for the specified period before playing again. If playback is in progress when the timer expires, the recording keeps playing to the end anyway and misses that turn. It will play again when next due.

A Cancel trigger may be used to abort playback of a timed announcement. Playback will also be aborted if interrupted by another trigger of higher priority.

**Internal Timers (for MultoRTC : Date and time)**

No need to wire to any external contact. The trigger's recording starts to play automatically when the Date and Time you define arrives. It plays once and stops unless you specify that the trigger should repeat. If so, it waits for the specified period before playing again, which may be measured in minutes, hours, days, weeks or months. For example, if you define a trigger to play on *1st January 2006 at 00:00 then every 12 months* you could use it to say Happy New Year.

If playback is in progress when the timer triggers, the recording keeps playing to the end anyway and misses that turn. It will play again when next due.

A Cancel trigger may be used to abort playback of a timed announcement. Playback will also be aborted if interrupted by another trigger of higher priority.

To set the MultoRTC's internal Clock, use the Sound Store Loader's **Store | Properties** menu and choose the RTC Tab. The PC's own clock will be used to synchronise the MultoRTC clock, so make sure it is accurate first.

The Curfew box lets you set a period of day when any RTC-triggered playbacks may be suppressed. The Trigger Tabs themselves allow you to choose which triggers will be under the curfew's control.

**Set Trigger to Clock**

Play first on ...

Date: 30 May 2005

Hour: 7 Minute: 5

Then Repeat every 10 Minutes

Explanation:  
The trigger has been set to play on 30/05/05 07:05:00 then every 10 minutes

OK Cancel Help

**Statistics**

Priorities Loading Properties **RTC** Text

Clock

RTC reads Thursday 22/09/2005 08:42:24 BST

Update from PC Use BST

Curfew

Allow Curfew to inhibit selected triggers...

From: Hour 19 Minute 0 To: Hour 7 Minute 00

Done

## Priorities

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Since there are many recordings but only one playback channel, it is necessary to arbitrate between two triggers that try to start different recordings.

The Sound Store lets you give each trigger a priority level. You may allocate equal priorities to two or more triggers. If a playback is in progress and a new trigger is fired, it will only succeed if it has a higher priority than the first.

**New!** You may now allow triggers of equal priority to queue and play in rotation, rather than compete on a first-come-first-served basis.

## Using the Control Inputs and Audio Outputs

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Wiring to the Multo and MultoRTC is easy; you may not need to connect all the triggers – choose those that you need for your application.

Audio is output from the D-Type pins 33 and 34 as an electronically balanced pair. Connect these to your amplifier's input. (Alternatively you can connect to pin 32 which is an unbalanced output referenced to pin 31)

Connect your trigger contacts to pins 1 to 16, each with their common return connected to pin 18/19.

Two lamp or relay drivers are provided; one is asserted whilst the Sound Store is working properly and the other is asserted during playback.

“Working Properly” means that internal programme memory checks and the Watchdog both report successful operation.

“Playing Now” means that a playback is in progress.

The lamp driver outputs can sink a load of 500mA when active and withstand a potential of 30 volts above common when not active.

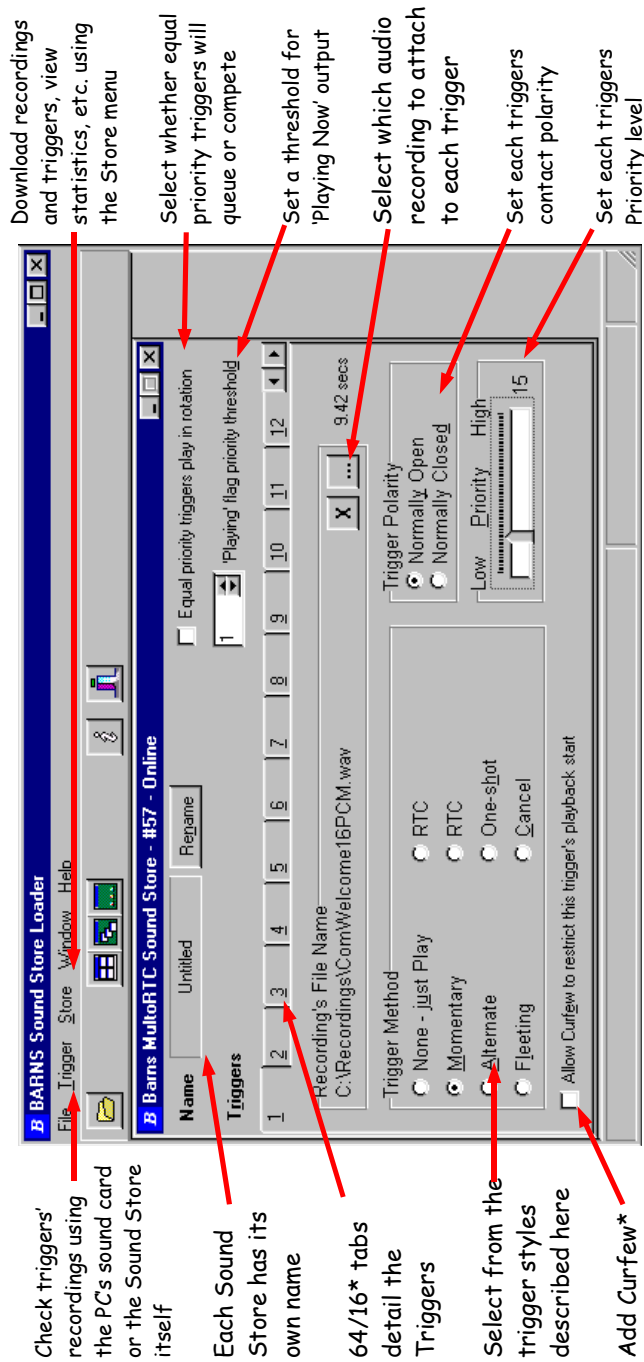
Connect your loads between a positive supply that you provide and the driver output pins. The ‘Playing’ output is on Pin 20 and ‘Working Properly’ on pin 25. Be sure to connect pin 27 to your positive supply as this provides back-emf suppression diodes for your loads if they are inductive.

### 37-way female 'D' Inputs and Outputs

Pin	Description	In/Out
1	Trigger 1	In
2	Trigger 2	In
3	Trigger 3	In
4	Trigger 4	In
5	Trigger 5	In
6	Trigger 6	In
7	Trigger 7	In
8	Trigger 8	In
9	Trigger 9	In
10	Trigger 10	In
11	Trigger 11	In
12	Trigger 12	In
13	Trigger 13	In
14	Trigger 14	In
15	Trigger 15	In
16	Trigger 16	In
17	Reserved - do not connect	
18	Common, 0V	I/O
19	Common, 0V	I/O
20	Playback in progress	OC Out
21	Reserved - do not connect	
22	Reserved - do not connect	
23	Reserved - do not connect	
24	Text Displays OK (MultoText & MultoText+RTC)	OC Out
25	Programme Memory OK	OC Out
26	Configuration Memory OK	OC Out
27	Safety Diodes for circuits 20..26	I/O
28	Reserved - do not connect	
29	Reserved - do not connect	
30	Reserved - do not connect	
31	Low level audio output common	I/O
32	Low level audio output	Out
33	High level audio output +	Out
34	High level audio output -	Out
35	nc	
36	Power input, 9V d.c.	
37	Power input, 9V d.c.	

Note: The safety diodes for circuits 20..26 all merge to pin 27 for inductive loads with a common +ve

The Sound Store Loader



Sound Store Loader main screen. Items with asterisk apply to MultoRTC only