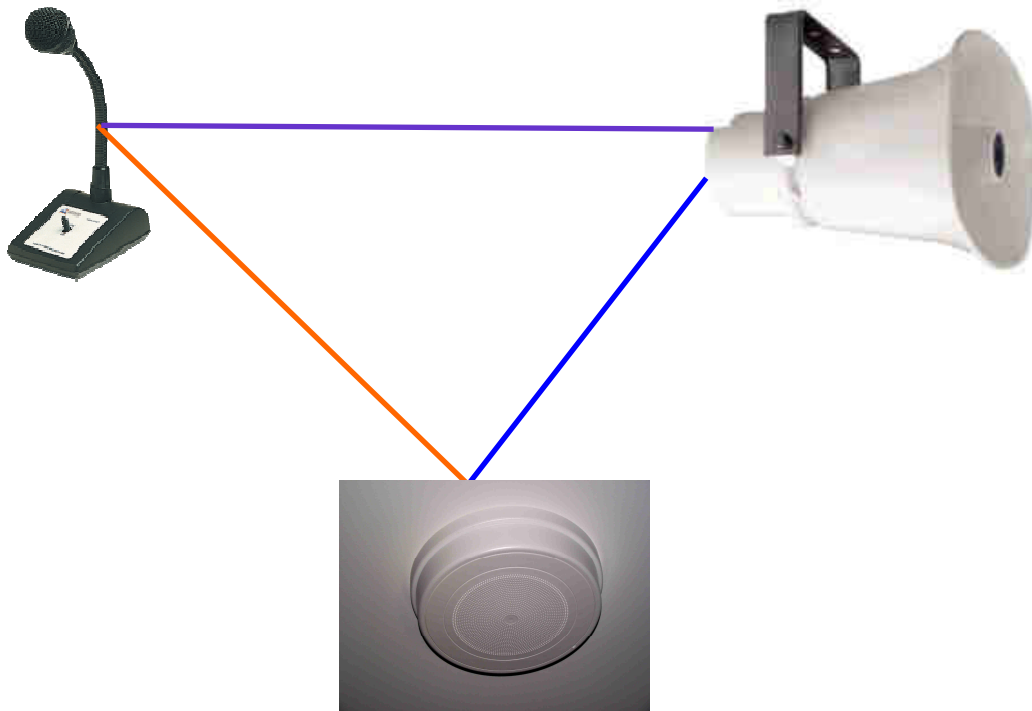


DELUXE SCHOOL PA SYSTEMS



OPERATING MANUAL

Version 3.35—2015
3 x Daily Line Up Music
TR644 Four Channel Timer
No intercom

Introduction

Congratulations. Your investment in a new PA Matthews Audio integrated school communications system will now give your school years and years of trouble free operation. If your system is a *completely new install* then this booklet will explain all the equipment items and how they work. However if your system was a renovation of an older one and still contains some older components (such as an older PA amplifier or music playout equipment) then the operation principles are the same but the actual photographs here may not always be the same as your system.

The photographs in this booklet are taken from a “wall mount” system. If you have a “rack mount” system then the principles are the same but the actual switches may be in different locations to those shown on the photographs.

System Overview

Your system consists of a PA system (used for bells, line up music, evacuation, lock down and voice paging—usually over the whole school campus).

The cabling for your system is completely independent of any existing telephone, power or computer data systems in your school—although in most cases our system cabling will often run in common conduits, ducts or looms, possibly sharing space with these other cables. Cabling alterations or repairs can normally be made by any suitably qualified electrical contractor with telephone or data system experience or you can send us an email (recommended) if there is any confusion and we can advise on alterations or repairs.

A full set of cable records, together with a map showing approximate cable routes and details is kept on site usually underneath or near the Amplifier. Alternatively you can email us and we'll email you or your contractor a PDF copy free of charge.

Instruction Booklet

This booklet is divided into three sections:

1.) Quick Guide

This section contains a series of simple step by step instructions for things that you are likely to need to do with the system on a regular basis. In most cases the answer to your question about using the system can be found in here.

2.) Detailed Instructions

This section has all the finer details about configuring the system and it's components. These are things you won't normally have to touch in daily use but you might need to look at when you wish to change the way the system works. For example changing your bell times or changing the music or tones on the system.

3.) Troubleshooting Guide & Service Contact

This section contains a list of possible problems you may encounter with the system and suggests tests you should carry out on the system yourself before calling for service. This way if a service call is required, you can give us accurate information on what's wrong with the system and we can make sure you get back on the air as soon as possible.

Quick Guide—Page 3

1.1) How to over ride the bell timer or Ring Bell Manually:

To ring the bell manually just push the RED “Manual Bell” button. The bell will continue to ring for as long as you remain pushing the button.



To stop the bell ringing automatically (for example, for a school day where bell times have changed) switch OFF the “Auto Bell” switch and ring the bell manually for that day only. Don't forget to put it back ON afterwards.

1.2) Turning OFF the system for Holidays:

Your timer will have been programmed to exclude Saturdays and Sundays so the system can be left ON over weekends. However for school holidays the system should be turned OFF so as to minimize disruption to neighbours. Just switch OFF the power switch to the bottom right hand side of the amplifier and switch it back ON again when you return after the break. Your bell times and settings will be preserved during this process.



1.3) Using the Paging Microphone:

To use the paging microphone push DOWN on the toggle, wait for the tone then make your announcement. Do NOT switch the toggle UP as the switch will then remain ON and you risk the microphone being left on after you have finished.



1.4) Using the Evacuate and Alert (Lock down) tones:

EVACUATE is the standard emergency “Whoop whoop” sound and is used to evacuate the school. In event of an emergency it should be switched ON and left there until the your authorised person gives permission to switch it off.

ALERT is a “Beep Beep” sound that *fades up slowly* and should be used for about 30 seconds ~ 1 minute to signify LOCK DOWN conditions in the school. Cancellation of a lockdown should be done by making an announcement over the microphone.

Regular Drills (one per term) should be held in the school to familiarise staff and students with these tones. PA Matthews Audio also strongly recommend these tones be briefly TESTED every month (as a minimum) to ensure they are operational in the case of an emergency. This is normally done after school hours and after an announcement is made “attention, this is a test only” or similar.



1.5) Change time for Daylight Savings:

The timer does NOT automatically adjust for daylight savings. This needs to be done MANUALLY using the following process;

- 1.) Open the timer lid and press “Menu” ONCE.
 - 2.) Press “▶” button TWICE.
 - 3.) Press “OK” button TWICE.
 - 4.) Press “▶” or “◀” buttons to select correct hour.
 - 5.) Press “OK”
 - 6.) Change Minutes (if required, otherwise skip this step)
 - 7.) Press “OK”.
- You're done!



1.6) Using / Testing Line Up Music:

To use Line Up Music, switch the “Master Line Up Music” switch DOWN (ON). To isolate, switch OFF.

There are three Line Up Music test switches. To test the volume level of each line up music file, switch the relevant “Music Test” switch on to MANUAL and then switch it back to AUTO when testing is complete.



Quick Guide—Page 4

1.7) Selecting individual speaker zones:

On the amplifier there are six buttons (pictured). Above this the installing contractor will have written a list of which speakers are controlled by each zone switch.

Normally the “ALL” switch must be left pushed **IN** so that the bell and other critical tones are heard clearly throughout the whole school.

However you may isolate zones if necessary. An example might be to make an announcement on the inside speakers only (during a lock down) or to run a test using the office speakers without disturbing the rest of the school.

To do this simply press OUT the “ALL” switch and then press IN the switch(es) for the zones you wish to use.

Remember to press IN the “ALL” switch once you have finished so that the bell and critical tones will be heard normally afterwards.



1.8) Adjusting the Volume Controls:

The installing contractor will have marked white arrows on the volume controls when your system was installed. These are “Ideal starting points” for your system. You can increase or decrease the volume of either the Paging Microphone or the System Tones. The other (unused) channels should always be left OFF. Remember that adjusting these controls will affect the volume level of the *entire system*.

The Bell, Tones and Music are *all controlled by one volume control*. If you find that the (line up) music is too loud we recommend that you re—record the relevant MP3 music file at a reduced level and re load it onto the system, as turning down the “Tones” volume control too far may sounds like the Bell and Evacuation tones too quiet to hear clearly over the whole school.



Detailed Instructions—Page 5

2.1) Theben TR644top2 Bell Timer

The timer controls the BELL sound and the LINE UP MUSIC.

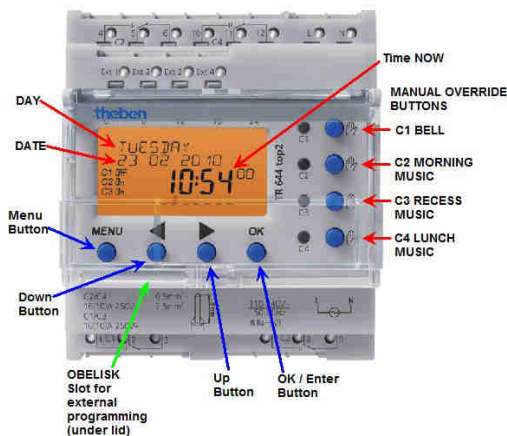
Bell : Channel 1 controls the BELL. Each bell is programmed as a PULSE with a normal duration of 10 seconds. Each programmed time is written in to a day (usually Monday or Day 1) and then “Copied” and added to Days 2 to 5. Days 6 and 7 (Weekend) are then skipped before the time is saved into memory and the next time is then programmed.

Music : Channel 2 controls the *MORNING* line up music. Channel 3 controls the *RECESS* line up music. Channel 4 controls the *LUNCH* line up music. Each line up music segment is programmed as a PULSE With a normal duration of 2 minutes.

Reset : It is possible to modify or delete individual times. However we strongly recommend that for more complex changes (such as changing a complete recess or lunch start and finish time which may involve changing up to six or seven individual events) that you instead perform a FULL RESET of the timer and reprogram it from scratch. This makes errors far less likely, and errors can some times result in the bell or music coming on and / or staying on at weird times (such as midnight) resulting in significant problems.

Lists : Before programming we strongly recommend you write out ALL your proposed bell and music times on a weekly schedule, even showing times that are the same on each day. This will make programming easier and reduce the chance of making mistakes.

Each panel below shows a step by step procedure to program, modify, delete or clear times. **Text shown in PURPLE indicates what you will see on the timer display for each step.**



To Program a Bell time—Channel C1 :

- 1.) Press MENU Once. (“PROGRAM”)
- 2.) Press OK FOUR TIMES (“SWITCH TIME”)
- 3.) Press ► ONCE (“PULSE”)
- 4.) Press OK TWICE times (“SET HOUR C1 On 0:00.00”)
- 5.) Set HOUR, press OK and then set MINUTES.
- 6.) Press OK 3 TIMES (“PULSE LENGTH C1 On 0:00.01”)
- 7.) Set how long you want bell to ring (normally 10 seconds)
- 8.) Press OK ONCE. (“EVERY DAY”)
- 9.) Use ► or ◀ to select first DAY you want bell to ring
- 10.) Press OK (“COPY C1 On x:xx.xx”)
- 11.) If you want bell to ring more than 1 day press OK again
- 12.) Use ►/◀ and OK buttons to select additional days
- 13.) Press ► to step over Saturday & Sunday (“SAVE”)
- 14.) Press OK to complete—Programming is now complete.
- 15.) Either press OK ONCE and return to (3) to add more times or press MENU FOUR TIMES to finish programming and go back to front screen.

To Program a Music time— Channels C2, C3 or C4 :

- 1.) Press MENU once. (“PROGRAM”)
- 2.) Press OK ONCE. (“CHOOSE CHANNEL”)
- 3.) Use ► to select channel C2 (Morning), C3 (Recess) or C4 (Lunch).
- 4.) Press OK THREE times. (“SWITCH TIME”)
- 5.) Press ► ONCE (“PULSE”)
- 6.) Press OK TWICE times (“SET HOUR C1 On 0:00.00”)
- 7.) Set START HOUR, press OK and then set MINUTES.
- 8.) Press “OK” TWICE. (“PULSE LENGTH IN MINUTES”)
- 9.) Use ► button to set number of minutes you want the music to run (Usually two minutes)
- 10.) Press OK TWICE. (“EVERY DAY”)
- 11.) Use ► or ◀ to select first DAY you want bell to ring
- 10.) Press OK (“COPY C1 On x:xx.xx”)
- 11.) If you want music to trigger more than 1 day press OK again
- 12.) Use ►/◀ and OK buttons to select additional days
- 13.) Press ► to step over Saturday & Sunday (“SAVE”)
- 14.) Press OK to complete—Programming is now complete.
- 15.) Either press OK ONCE and return to (3) to add more times or press MENU FOUR TIMES to finish programming and go back to front screen.

To Check Bell or Music times :

- 1.) Press MENU ONCE.
- 2.) Press OK ONCE
- 3.) Use ► button to choose channel.
(C1 = Bell, C2 = Morning, C3 = Recess, C4 = Lunch)
- 4.) Press OK TWICE. (“NEW”)
- 5.) Press ► button ONCE (“CHECK-MODIFY-DELETE”)
- 6.) Press OK ONCE (“SWITCH TIME”)
- 7.) Press ► button ONCE (“PULSE”)
- 8.) Press OK ONCE. First time will be displayed, showing pulse length, time and days.
- 9.) Use ► button to step through all times and check.
- 10.) Keep stepping through times until all are checked.
- 11.) When finished, keep pressing MENU until you get back to the start screen.

**IF YOU MAKE A MISTAKE
JUST PRESS THE “MENU”
BUTTON AND KEEP
PRESSING UNTIL YOU
GET BACK TO THE START
SCREEN, THEN START
AGAIN.**

Detailed Instructions—Page 6

To completely erase all settings from ONE CHANNEL of timer and start again

- 1.) Press MENU & Press OK
- 2.) Use ► to select Channel you wish to clear.
- 3.) Press OK TWICE.
- 4.) Press ► Twice (DELETE PO ALL)
- 5.) Press OK (CONFIRM) then press OK again (DELETED)
- 6.) Press MENU Four times to get back to start.

Note : If you want to delete times from all four channels you will need to repeat this procedure for each channel.

To completely reset timer to factory settings

- 1.) Press MENU
- 2.) Use ► FOUR TIMES (OPTIONS)
- 3.) Press OK ONCE.
- 4.) Press ► SIX TIMES (FACTORY SETTINGS)
- 5.) Press OK (LOAD FACTORY SETTINGS)
- 6.) Press OK again.

This setting will completely wipe the timer of everything. You will have to reset the language, date and time from scratch. Make sure you select "No Summer / Winter Rule" when it asks for this.

To modify or delete a Bell or Music time :

- 1.) Press MENU ONCE.
- 2.) Press OK ONCE
- 3.) Use ► button to choose channel then press OK.
(C1 = Bell, C2 = Morning, C3 = Recess, C4 = Lunch)
- 4.) Press OK TWICE. ("NEW")
- 5.) Press ► button ONCE ("CHECK-MODIFY-DELETE")
- 6.) Press OK ONCE ("SWITCH TIME")
- 7.) Press ► button ONCE ("PULSE")
- 8.) Press OK ONCE. First time will be displayed, showing pulse length, time and days.
- 9.) Use ► button to step through all times and find the one you want to modify or delete.
- 10.) Press OK.
- 11.) Use ► button to select either "Modify" or "Delete".
- 12.) Press OK.
- 13.) Use ► button to select if you want to just delete one day or the whole block of days in a week.
- 14.) Follow screen prompts to delete or modify as required.

Using the OBELISK storage card

The OBELISK card is used to transfer programs from the USB computer programmer to the timer (see next page).



It is also used for back up storage of times in the event that something goes wrong with the timer settings and the times need to be restored to their previous settings.

When your install contractor initially programmed your timer, a copy of the initial program was saved on the obelisk card. Even if you don't use or even have an Obelisk computer programmer (which is an option some schools don't choose) you can still use the Obelisk card supplied with your timer to restore settings. This is especially useful if you have attempted to make changes to the timer and made a mistake and now don't know where the mistake is.

The Obelisk card is stored in the lid of the timer. It only goes into the slot one way. Be GENTLE inserting the card. Do NOT force the card into the slot. If it refuses to plug in, gently move it around up and down until it plugs in securely to the slot.

To LOAD settings from Obelisk card.

- 1.) Insert obelisk card (COPY OBELISK—TIME SWITCH)
- 2.) Press OK (ALL DATA COPY)
- 3.) Press OK (TRANSCRIBE)
- 4.) Press OK (data copies)
- 5.) Press OK then Remove Obelisk.

To SAVE settings TO Obelisk Card

- 1.) Insert obelisk card (COPY OBELISK—TIME SWITCH)
- 2.) Press ► once (COPY TIME SWITCH—OBELISK)
- 3.) Press OK (TRANSCRIBE)
- 4.) Press OK (data copies)
- 5.) Press OK then Remove Obelisk.

2.2) Using the Obelisk card Programmer (if supplied).

Overview :

The OBELISK top2 programmer allows you to store, recall, back up and easily program your bell timer using a computer screen interface.

Many people find this easier than using the menu driven program on the timer itself as it displays the complete weekly program on one screen. This option is recommended for schools that change their bell times regularly or need this flexibility.

The programmer comes with an extra OBELISK card. Many schools use this to establish a "summer" and "winter" set of times, program one card with each and then simply load the relevant times into the timer as the seasons change.

On the next page is an example of the Theben software screen showing bell times programmed into Channel 1.

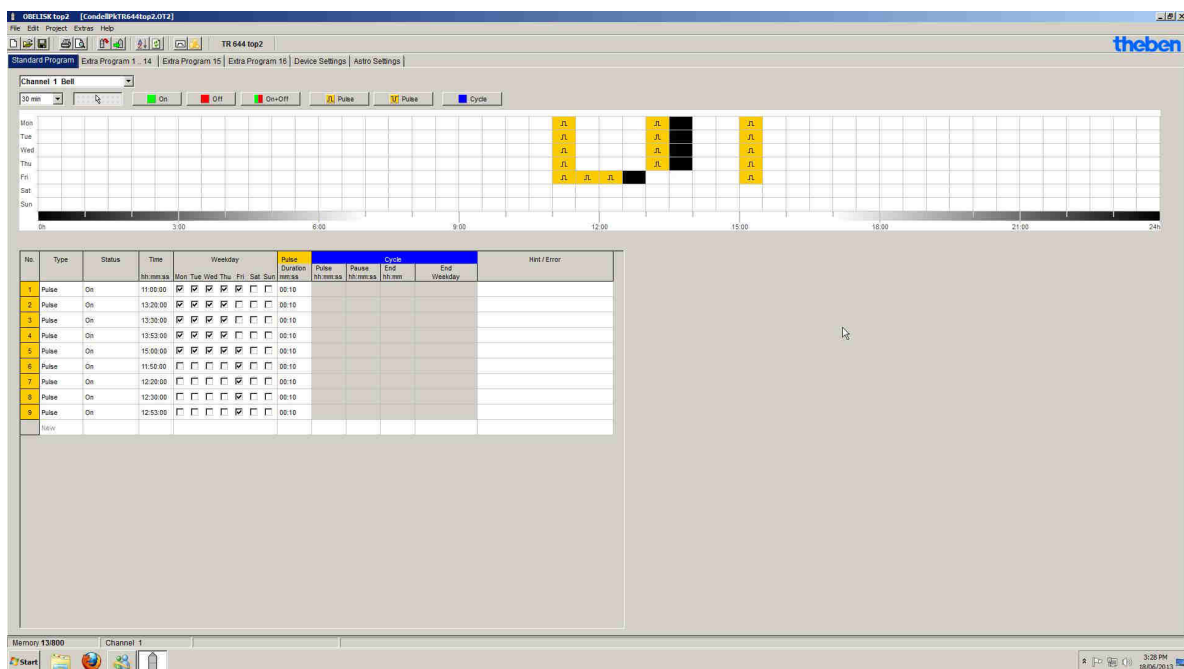


Detailed Instructions—Page 7

2.2) Using the Obelisk card Programmer (continued).

Using the OBELISK top2 :

- 1.) Install the program on the CD to your computer and open the program. Click on “TR top2” and then select “tr644top2” and then “OK”.
- 2.) Connect the programmer to a free USB slot.
- 3.) Insert the OBELISK card from your timer (it will have been programmed with a back up set of your bell times by our system installer when your system was commissioned).
- 4.) Click on the “read obelisk” button at the top of the screen (it’s just below the “help” menu, with a red arrow). The computer will load the times off the card and onto your screen.
- 5.) You can now make changes and save them back to your card and thence to your timer. We recommend you also make a back up of the times to both your computer AND the new OBELISK card as well.



Important things to remember:

The OBELISK program contains a comprehensive HELP file which is found simply by clicking “help” at the top left end of the menu bar. You can also program special “one off” timer events on a 365 day calendar (called “Astro” events). Refer to the Theben help files for information on advanced programming.

Note that when opening the program make sure you select “tr644top2” as your timer, otherwise the system will not program the OBELISK card correctly.

Remember that “Channel 1” is the *timer channel that controls your BELLS*. ALL times entered into Channel 1 MUST be PULSE TIMES usually of ten seconds duration. If you fail to do this properly the bell will get “stuck on” and ring endlessly until you turn it off.

Channels 2,3 and 4 are the *music channels*. Each channel is a different song. Normally these are used for Morning, Recess and Lunch respectively. They should be programmed as PULSE TIMES with a normal duration of 2 minutes (3 mins max.)

We strongly recommend you keep one OBELISK card (usually the one that came with the timer and was programmed by our staff when the system was commissioned) as a BACKUP and do not write to it. Instead, write your modified programs to the NEW card and thence load them onto the timer. That way if you make a mistake you can reload the old times easily while you sort out what went wrong.

Detailed Instructions—Page 8

2.3) Changing the audio files on the MP3 Player.

Overview :

The A1740 unit plays MP3 files on demand as controlled by the PA system timer and control box. Each file is placed in a specific folder.

The name of the file is not important. Only the folder in which the file is placed matters.

For example : When “morning line up music” starts (C2 timer channel), the system will look for whatever file is located in “trig2” and start playing it. When the timer switches off again, the playout will stop. If you want to change the morning line up music, simply change the file in the “trig2” folder on the SD card.

The “alert” and “pre announce chime” files should NOT be changed as these are a specific length, and changing them may prevent the system from working properly.

Create Multiple SD Cards:

You can easily change your play out files by simply preparing multiple SD cards and then changing the card in the play out box say, each morning.

To prepare an additional SD card first get the existing card out of the unit. Create a new directory on your computer and then copy all the directories off the SD card to the directory on your computer.

Then insert the new SD card in your computer and copy the directories from your computer onto the new SD card so it is identical to the existing one.

Now you can easily and safely change the data on either SD card.

Changing files:

The most commonly changed files on your system are likely to be the Line up Music (trigs 2,6 and 7) which are normally 2 mins long. However schools sometimes change the Bell (trig1), often to a recording of their own school yard bell or similar.

Wet Weather (trig3) can also be changed. “trig4” is a spare switch so you can use it for any purpose such as a special message for assemblies etc.

ALL FILES MUST BE IN mp3 FORMAT. Windows Media (wma) and Apple itunes (mp4) will NOT WORK !!!!!!!

Volume Levels:

Please note that the volume level of ALL the files is controlled by a single “tones and music” knob on the amplifier (ref page 4). *Care should be taken when loading any alternative files to make sure they are not too soft or loud.*

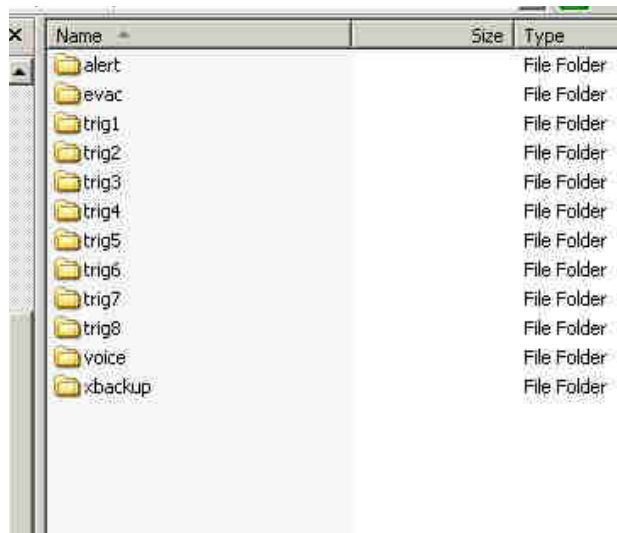
The Bell (trig1) should be recorded as LOUD AS POSSIBLE so everyone hears it clearly. The LINE UP MUSIC (trigs 2,6 and 7) should be recorded on average about 10dB quieter than the other sounds. Because this file runs longer, it is likely to become a problem both for school staff and for your neighbours if it is repeatedly played too loud. We recommend you adjust the overall level of music files by using an “audio editor” program such as Adobe Audition or Audacity to recode your sound file before saving it onto the SD card.

The Alert and Evacuate files have been preset at a reduced level when your system was installed. The last thing you need when evacuating a school is a siren blowing your head off when you’re trying to move kids about and mark rolls!



To Remove / Insert SD Card

- 1.) Push on card , it will then pop out.
- 2.) Remove card
- 3.) Push back in until “click” and leave.



Pre Loaded Files:

The current files were pre loaded onto your system SD card when your system was installed.

alert—Standard lock down tone (DO NOT CHANGE)
evac—Standard evacuate tone
trig1— Bell tone C1 (6 secs) (Currently 4 tone Inter M PE9103A chime)
trig2— MORNING Line Up Music Song C2
trig3—Wet Weather Call / Song (Usually 30 secs) (Ian Moss—Mr Rain)
trig4—Message (currently 1 hour system test file)
trig5—Pre Announce Chime (3 secs) (DO NOT CHANGE)
trig6—RECESS Line Up Music Song C3
trig7—LUNCH Line Up Music Song C4
trig8—not in use
voice—not in use
xbackup—Directory contains backup of all above folders

Troubleshooting Guide—Page 9

This section will enable you to trouble shoot the system so you can either fix most problems yourself or know what to tell us when you call for service. It's written as a series of common problems, the likely fault, and what you should do to test or remedy the problem.

3.1) Major Faults

Problem	Test / Likely Cause	Suggested Action
No power to PA Unit Dead. No indicator lights on equipment.	Electrical problem in building Unplugged power lead(s)	Plug in something that you know works, into the same outlet and check there is power there.
UPS (Uninterruptible Power Supply, if provided) not working or constantly beeping or system goes dead very soon after a blackout.	UPS Battery needs replacing.	Call for service and tell us what is happening. Expected life of UPS batteries is 3 years before replacement is needed.
Speakers in one section of school are not working but others are OK in different blocks.	Wiring fault. Likely caused by other contractors damaging or digging up cables or rats eating cables.	Call for service immediately.

3.2) Timer and Bell Faults

Problem	Test / Likely Cause	Suggested Action
Bell Ringing Continuously.	Timer has been toggled "ON" accidentally. "C1 ON" may be displayed on the timer. During programming, an "ON" time has been entered instead of a "PULSE" time.	Briefly push ◀ and ▶ buttons SIMULTANEOUSLY to toggle OFF again. Turn the "AUTO BELL" switch to OFF to silence the bell. Then check bell times (ref Page 5) to see if there is an error time present. If there is, delete it. Alternatively reset the timer (ref Page 6) and reprogram the timer or use the OBELISK card to restore the previous programme.
Music Plays Continuously.	Timer has been toggled "ON" accidentally. "C2,C3 or C4 ON" may be displayed. "Music Test" switch left on. Music time has been programmed with an "ON" time but no corresponding "OFF" time.	Briefly push ▶ and "OK" buttons SIMULTANEOUSLY to toggle OFF again. Turn it off. Either delete the "ON" time or add an appropriate "OFF" time into C2 to tell the timer to turn off the music.
Bell does not ring.	Press manual bell ring button. Check "Auto Bell" switch is ON. Bell time(s) not programmed.	If bell rings OK then see below. If not then go to "PA faults". Turn it ON if required. Check bell times (ref Page 5)

Troubleshooting Guide—Page 10

3.4) MP3 Player Faults.

Problem	Test / Likely Cause	Suggested Action
Wrong sound plays, i.e. bell rings when music should, etc.	Operating system frugged due to surge or brief power interruption	Switch off MP3 unit for 10 seconds, then back on and then try again.
	Wrong files in relevant folders on SD card	Reload SD card with correct files
No tones at all.	Operating system frugged	Switch off unit for 10 seconds, then back on, and then try again. Test ALL tones (Bell, Music, Evac, Alert, Wet Weather, Mic splash tone) to make sure ALL are working correctly after reset.
	SD Card damaged	When system is switched back on, all ten red LED's should briefly light up and then go out as the system resets. If this does not happen then replace the SD card.
One sound not working, others OK	Missing or corrupt file in relevant directory	Reload card with correct files
	Broken wire on back of unit	Call service.
	Wrong file type (eg .WMA, not .MP3)	Unit will only play MP3 format files and not WMA (Windows Media) or mp4 (apple itunes) files. Make sure all files are encoded in .MP3 format.

3.5) PA System Faults.

Problem	Test / Likely Cause	Suggested Action
No Bells either auto or manual. No tones.	Fault in MP3 player. Check Microphone still Works -	If microphone still works OK - then refer above. If not then refer "No Sound at all" below.
No sound at all.	Amplifier switched off Speaker selector not set correctly Volume levels not set correctly Faulty Amplifier	Switch ON power. Push in "ALL" switch and leave ON. Adjust all level knobs back to white arrow positions. Call service. Be sure to mention that you think the amplifier is faulty and a standby replacement may be needed.
Volume Level very soft in some parts of school but not others.	Short circuit in speaker line	Switch OFF "ALL" switch on speaker selector. Progressively test each sector (one by one) to see which ones still work OK and which one has the problem. When found leave affected sector OFF, switch all others back ON and then call for service.
Strange noises through PA	Open spare input channel.	Make sure unused channels are turned right down to ZERO. This is normally knobs 3,4,5 and 6 on the amplifier.
	Radio Microphone Faulty (if fitted).	Switch off radio microphone receiver and see if noise goes away.
	Faulty Tone Generator (on systems which do not have an MP3 player).	Switch OFF entire system, wait for 10 seconds and switch back ON. Also switch off UPS (if fitted) using button on front of panel. If fault persists call service.
Parts of school PA too LOUD and others too soft	Unauthorised contractor has replaced a speaker with the wrong type (8 ohm) or extended the system using the wrong type of speaker.	Have the work reversed and repaired accordingly either by the original contractor, or call service.
	Speaker taps not correctly set when system was installed or system incorrectly specified.	Call service / warranty repair

SERVICE CONTACT :

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zordmaker@hotmail.com