MINI JOOK

MECHANISM

MJ

Mini Jook
Service Manual

Version 3

CONTENTS

1. INTRODUCTION

This manual contains information on the Sound Leisure equipment designed around the 'System 5' type of electronics.

Although the information in this manual was correct at the time of printing, the manufacturer reserves the right to make changes, without prior notice.

The contents of this manual may not be copied in part or full without prior consent from Sound Leisure Ltd.

2. SYSTEM FEATURES

30 Disc Capacity
Up to 900 Track Selections
Adjustable Consecutive Track Plays
Selections Played in Selected Order
Adjustable B.G.M. Disc Band
Automatic Music Fade
Programmable Price of Play
Popularity Data Retrieval
Mechanical Cash Meter Facility under Software Control
Microphone Input with Separate Volume, Treble & Bass, and Voice Over Activation
Auxiliary Line Input Socket
600 Ohm Slave Output Point with Gain Preset
2 Individual Timers
Adjustable Foreground Disc Band
7 Day 24 Hour Real Time Clock
Individual Start and Stop Times for Timer1 and Timer2
Week Days, Weekends, or Every Day Enable for Each Timer
Manual Enable for B.G.M Operation
Programmable Random Play from 1 to 99 Minutes

3.   INSTALLATION REQUIREMENTS

After unpacking the equipment, the following guide should assist you in achieving a trouble free installation.

3.1   MINIJOOK

Place the Minijook in the position in which it will be finally installed.

Ensure the location is dry and the equipment is set level.

There must be a mains supply socket within two metres of the equipment. Measure the mains supply to ensure it is 230V a.c. If the supply is less than the recommended voltage level stated please contact your local generating board for advice.

We recommend an earth continuity test is carried out on the mains supply socket prior to use.

Unscrew the two transit securing bolts located one at each side of the play mechanism. These bolts should be unscrewed and withdrawn complete.

NOTE: We would like to bring to your attention that, since 1992, portable appliance testing is required and a certificate of compliance issued.

3.2   WALLBOX

Firmly affix the wallbox hanging bracket so that on completion the coin input slot is at a height that can be reached with ease.

The wallbox, once hung on the bracket, is anchored with two bolts.

The holes in the wallbox are oversized to facilitate its levelling.

3.3   SYSTEM CONNECTION

There are three wallbox connectors in the jukebox/hideaway system each having five terminals. These are located on a small circuit board labelled: 'Wall Box Distribution Board' as shown below.
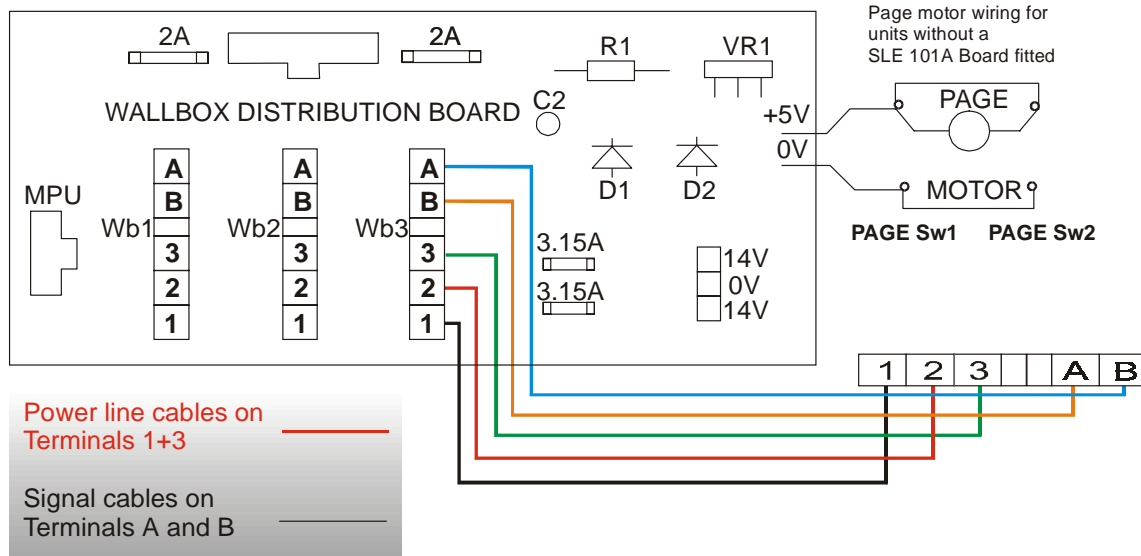
Each wallbox should be individually wired back to the jukebox/hideaway unit.

3.4   CABLE REQUIREMENTS

The connection between individual wallboxes and a jukebox/hideaway unit is done via five cables as shown above.

Connectors are located within each piece of equipment.   These connectors have terminals labelled 1, 2, 3, A and B.

Connect 1 to 1,   2 to 2,   3 to 3, A to A and B to B.

Cables connected to terminals 1 and 3 must have a minimum conductor diameter of 1mm (0.75mm² cross sectional area) when connecting wallboxes up to 50meters away and 1.5mm diameter (1.5mm² cross sectional area) when the wallbox is up to 100meters away.

Terminals 1 and 3 handle the wallbox low voltage supply. The power is supplied by the hideaway/jukebox as 14-0-14V a.c.

Terminal 2 is the common ground return.

Terminals 'A' and 'B' are used for data transmission, with 'A' for data transmission from the jukebox/hideaway unit and 'B' for data transmission from the wallbox.
These two cables are signal lines and are not required to handle any great power therefore much lighter gauge wire may be used.

Note: A minimum of 25V a.c. should be measured across terminals 1 and 3 at each wallbox to avoid any power supply problems.

3.5 METERS

A 12V d.c. meter without internal diode may be connected to any C.D. wallbox or any minijook.

N.B.   Such meters are not polarised and can be connected either way around.

3.5.1 SERIES 3 WALLBOX

Connect the meter to the two pin plug labelled MTR/CON5 on the ACS1043 board.

3.5.2 SERIES 2 WALLBOX

Locate the sentinel coin interface board. A meter may be connected to the two pin plug located on this board.

3.5.3 MINIJOOK BOARD (ACS1067)

Connect the meter to the two pin plug labelled METER on the ACS1067 board.

3.6 INSTALLATION OF COMPACT DISCS

When standing in front of the C.D. play mechanism place the C.D's onto the stack with the picture face on top and the clear face underneath.

PICTURE
SIDE

CD STACK LEVEL

DATA
SIDE
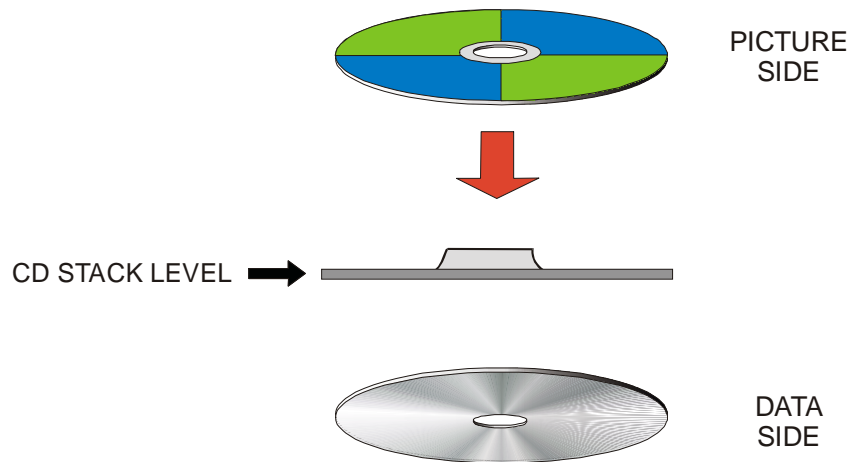
ONE COMPACT DISC VIEWED IN STACK

3.7 SELECTION DISPLAY

The selection display flashes between a three digit number and a two digit number.
The three digit number identifies the last disc selected and the two digit number identifies the track played on that disc.

3.8 MAKING A SELECTION

Five numbers need to be entered via the keypad to make one selection.
The CD mechanism can hold a maximum of 30 discs.

Each disc location is identified by a three digit number i.e. 100 to 129.

Example: To select a disc in location 125 enter the three digit number which identifies that disc, i.e. 125.
Having entered the disc number you now need to enter a two digit number for the track you wish to play from that disc.
The track number must be in the range: 01 to 30.

3.9 SPECIFICATION

Dimensions (Minijook)

Height   790mm
Width   700mm
Depth   265mm
Weight   50Kg

3.10 LIGHTS

1 x 12" Fluorescent tube

3.11 MOTORS

Disc Clamp Arm Motor 12V d.c.
Left/Right Motor 12V d.c.
CD Lift Motor 1.8 Degree Stepper

3.12 FUSES

ACS1067 Board

F1   1 x 3.15A Slow Blow   Amplifier Fuse
F2   1 x 3.15A Slow Blow   Amplifier Fuse
F3   1 x 3.15A Slow Blow   Stepper Motor

Cabinet

2 x 10 Amp   Used For a.c. Supply 14-0-4V a.c.
1 x 500mA   Used For Laser Player Power Supply
1 x 2.5A   Slow Blow Used For Mains Power

Speaker Matching Pad

2 x 2.5A   Slow Blow

Wall Box Distribution Board

2 x 2.5A   Slow Blow

3.13 SYSTEM RESET

For a system reset press and **hold** REJECT and CREDIT BUTTONS on ACS1067 board and turn machine ON at mains. Keep held until tower has travelled all the way to bottom of mechanism. The credit table will be zeroed.

4.   IMPORTANT NOTES

4.1   COMPACT DISC CARE

The signal read out surface is the reverse side of the printed label side. The compact disc is fairly resistant to scratches and dirt but it is best to be careful not to scratch the signal surface and to keep it clean - free from dust, dirt and fingerprints.

Disc Cleaning

If the signal surface becomes dirty, use the following for cleaning compact discs:-

When cleaning use a soft cloth. Wipe the cloth from the centre of the disc to the edge of the disc until the complete signal surface is clean. Do not clean the disc in a circular motion as this can corrupt large amounts of information.

a)   Fingerprints   Lightly rub the surface with a soft cloth.

b)   Dust or Dirt   Blow lightly on the disc and wipe the dirty part with a soft cloth or clean the dirty part with a damp soft cloth and then wipe dry.

c)   Grease or Oil   Clean with a soft cloth dampened with Ethyl Alcohol, then wipe dry.

N.B.   Conventional liquids and sprays used to clean records may damage the surface of the disc. Use of such a cleaner is not recommended.

Also, please do not expose the disc to direct sunlight, heat or humidity for prolonged periods of time.

Ensure both sides of the compact disc are damage free. It is important to note that damage to picture side as well as the read side of the disc can result in corrupt data.

5. MK6 MONO SOUND SYSTEM

5.1 WARNINGS

5.1.1   Damage to the sound fader circuit on the ACS1067 Board may occur if

the amplifier is unplugged whilst the machine is switched on.

5.1.2   The Sound Leisure MK6 amplifier is not suitable for connection to a 100V line system.

5.2 MK6 PRE-AMPLIFIER

INPUTS   Three 5-pin, 180° Din sockets.

Input 1   CD

This input has priority and auto-fade control over input 2. The two stereo inputs are first combined into one mono signal before being split into two channels each with pre-set: gain, bass and treble controls.

Input 2   Auxiliary (Aux)

BGM auto-fade approximately 45 seconds after last track played.

Input 3   Microphone (Mic)

The Mic input has auto-fade control priority with precedence over inputs 1 and 2. In addition, preset gain along with independent bass and treble controls are provided.

N.B.   Line Input level assumed to be: 2V p/p or 0.7071 RMS.
Also: the microphone should be a low impedance type (600 ohm).

VOLUME CONTROLS

Independent control of each channel is possible via a dual 22k log slider remote volume control (R.V.C.).

The R.V.C. circuit is of the D.C. type and may be run over long distances without the use of screened cable.

5.3   MK6 POWER AMPLIFIER

Frequency Range   15hz to 20khz with flat response.

Load impedance   4ohms minimum.

Power output   60W R.M.S. per channel into 4ohms.

The power output stage is overload protected.

5.4   MK6 SLAVE AMPLIFIER OUTPUT

The slave amplifier output is taken from Pin T3 on the pre-amp board. The signal return (ground) for the slave amplifier can be picked up on the amplifier chassis of the MK6 amplifier. The slave output signal is controlled via the potentiometer VR12, on the pre-amplifier board.

The slave output voltage is in the range: 600mV to 3V peak-to-peak.

NOTE:

When fitting a Sound Leisure slave amplifier it is necessary to upgrade the amplifier power supply fuses from 3.15A to 6A.

These fuses are located on the main ACS1067 MPU board.

5.5   KARAOKE

The facility of karaoke can be accomplished by lifting one end of resistor R71 on the MK6 pre-amplifier top board.

This disables the voice over function of the microphone.
(See page 13 for the location of R71)

5.6.   BACK GROUND MUSIC (BGM)

Sound Leisure offers two ways to use BGM.

1. Timed
2. Constant

CONSTANT BGM

Constant BGM is achieved by a switch/link across pins (10 to 14) on the ACS1067 plug PL15.

PL15

```
 14       10                      1
```

SWITCH/LINK
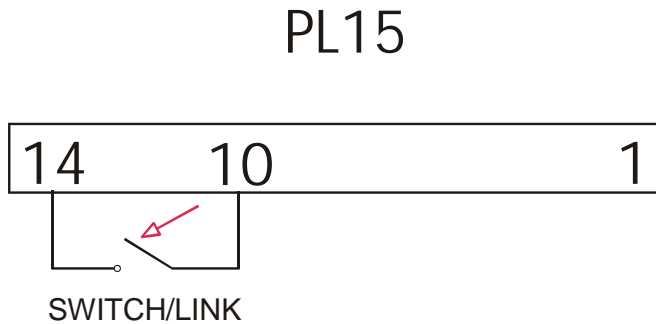
When the switch is closed the jukebox will play BGM on a permanent basis until the switch is opened again. The discs selected for BGM will be the band of discs previously programmed into Menu 5 at levels 3 and 4.

5.7 INPUT CONNECTIONS

(OUTPUT DUAL
CHANNEL MONO OR
STEREO)

(INPUT STEREO)

| LEFT CHANNEL | RIGHT CHANNEL | LEFT CHANNEL | RIGHT CHANNEL |

| MICRO-PHONE | AUXILLARY | JUKEBOX / CD |

VIEWED LOOKING AT FRONT FACE OF FIVE-PIN DIN PLUGS.
SIDE VIEW OF AMPLIFIER

MIC input (sensitivity 1)

MIC input (sensitivity 2)
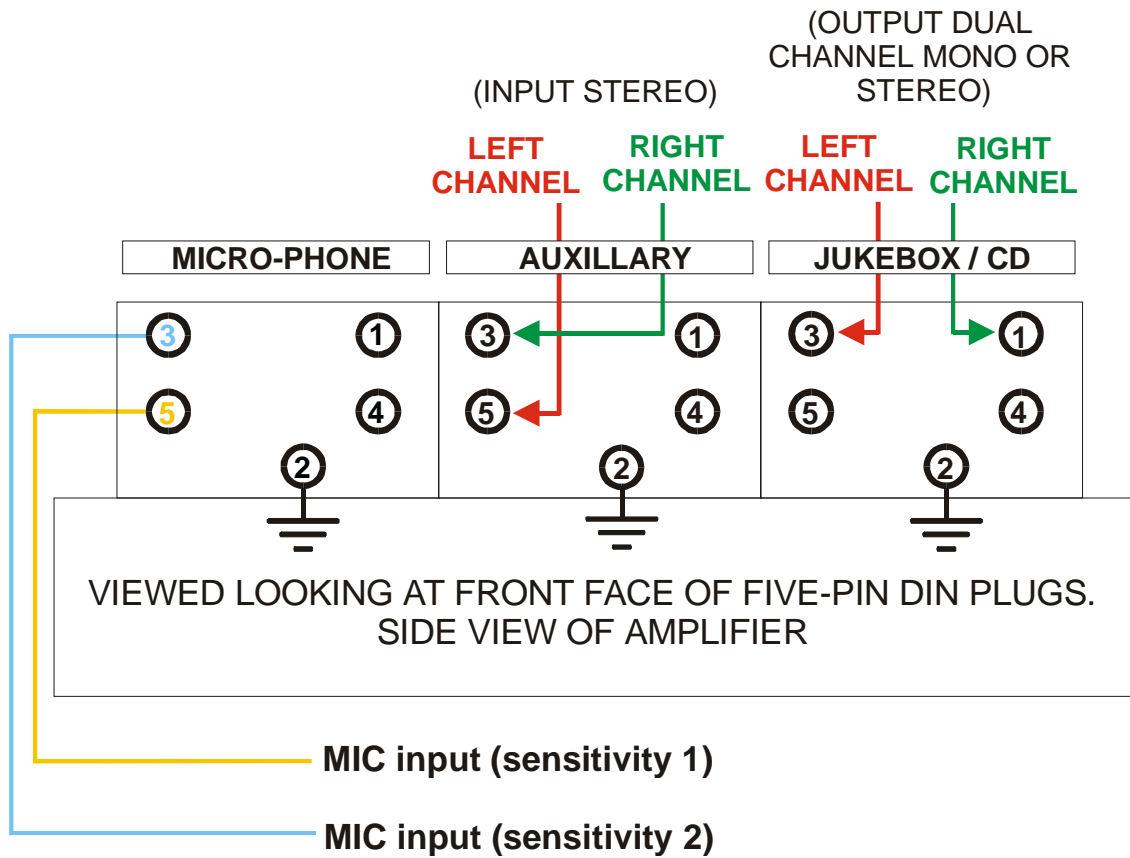
5.8   CONTROLS

EXTERNAL VOLUME CONTROL CONNECTIONS VIA MAIN M.P.U.

Yellow   Green   Brown   White

4 WAY RIBBON CABLE
CONNECTS TO JUKEBOX M.P.U.

1   2   3   4

Q1

CH II   PRESET
VOLUME
CH I   CONTROLS

VR1

AGC CONTROL.
DO NOT ADJUST
(LEAVE TURNED FULLY
CLOCKWISE)

R 71

CH II
TREBLE   B A S S

C11   JUKEBOX / CD
INPUT

CH I
TREBLE   B A S S

- AUX +
VOLUME
CONTROL   AUXILIARY
INPUT

MIC
TREBLE   B A S S

- MIC +
VOLUME
CONTROL   MICROPHONE
INPUT

T3   SLAVE OUTPUT
600 mV / 600 OHMs

SLAVE OUTPUT CONTROL   T4

ACW   VR 12

FULLY ANTI CLOCKWISE
SLAVE OUTPUT = 600mV   (600/600) OHM

S   S

FULLY CLOCKWISE
SLAVE OUTPUT = 3 V   TO AUX AMP

F   F

SYSTEM
GROUND   ISOLATION TRANSFORMER

6. DIL SWITCH SETTINGS

DIP SW 1 BANK 1

Mechanism setting in conjunction with display. Turn ON at mains with DIP SW1 ON.
The left digit of display indicates if the Sync Opto is blocked or clear.
The display will show '0' if Opto is clear or '1' if the Opto is blocked.
The right hand digit shows button pressed.

Button '1' energises phase '1' on stepper motor.
Button '2' energises phase '2' on stepper motor.
Button '3' energises phase '3' on stepper motor.
Button '4' energises phase '4' on stepper motor.
Button '5' & '6' open and close clamp arm.
Button '7' & '8' moves pick up arm up and down one position.
Button '9' & '0' moves transfer arm in and out.

To exit this routine turn the mains OFF, return DIP SW1 to OFF position and turn the mains back ON.

DIP SW 2   Stepper motor speed ON = FAST, OFF = SLOW.
DIP SW 3

When DIL SW3 is on, and the service switch is in the OFF position the least played disc will be automatically fetched from the stack by the pickup arm.

Remove the least played disc from the pickup arm and replace with the new disk.
Pressing CANCEL on the selection keypad to return the new disc to the stack.

When this process is complete the second least played disc will be automatically fetched from the stack and presented for exchange. This process will continue, presenting discs within the stack in descending order of popularity until all discs have been exchanged. This process can be exited at any time by switching the machine 'OFF' then 'ON' with service switch in the operate position.
This will automatically reset the popularity table.

DIL SW 4   Permanent random play.

DIL SW 5   Not Used.

DIL SW 6   Count skips on bad discs.

DIL SW 7   Allows programming credit table when set to ON position in service mode.

DIL SW 8   Permanently free credit.

N.B.   DIL SW 3 has priority over DIL SW 7.

7. PROGRAMMING

PROGRAMMING WALLBOX ONLY.

When entering into the program mode the following two steps must be carried out:-

1. Turn the service switch located on front right hand side of minijook cabinet to the 'UP' position.

2. Turn on SW 7 on one wallbox only.

   Also ensure SW 7 on DIL 1 switch bank is turned on.
   This is located on the ACS1067 board.

PROGRAMMING MINIJOOK ONLY.

1. Set the service switch located on the front right hand side of the minijook cabinet to the 'UP' position.

2. Turn on SW 7 on DIL 1 switch bank.
   This is located on the ACS1067 board.

Once the machine has entered the program mode it responds by displaying two zeros as shown below:

0		0

Ten menus may be entered, each menu being four levels deep.

7.1   MENU STRUCTURE

N.B. The first five menus are illustrated below.

	MENU 1 PLAYS	MENU 2 COINS	MENU 3 BONUS PLAYS	MENU 4 BONUS COINS	MENU 5 FACTORY DEFAULT
LEVEL 1					
LEVEL 2					
LEVEL 3					
LEVEL 4					

When the display shows two zeros, any menu may be entered. This is achieved by pressing the menu number (0-9).

The menu number entered will be displayed in between the two zeros,

 Example

Menu 2 selected

0	2	0

When a menu number is pressed it will be displayed for a short while before the display changes to show the contents of the first level in the menu, thus:

1		

Level number   Data locations for level 1
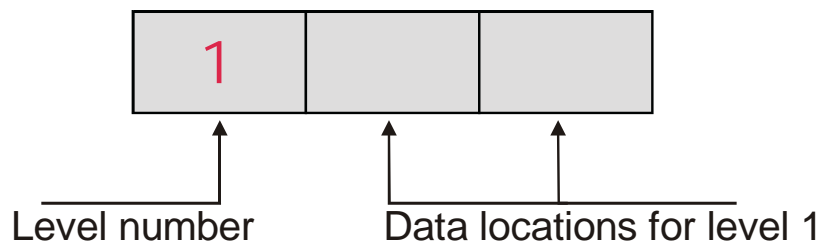
7.2   MOVING THROUGH LEVELS

Levels can be stepped through by pressing the level numbers (1-4).

7.3   EDITING MENU

Assuming you are in the correct menu and level, follow the steps below:-

Step 1:   Press 'C' key to overwrite old data.
               (The central and right-hand displays will blank)

Step 2:   Enter new data.

Step 3:   Press 'C' key to lock new data into memory.

Example

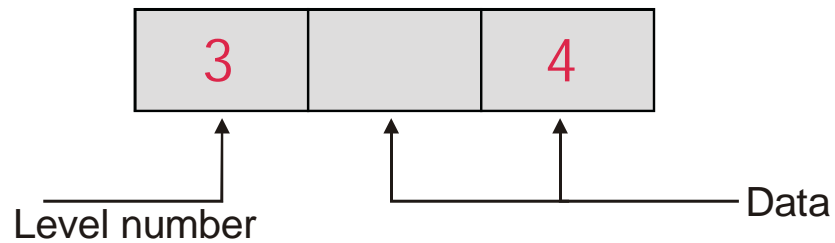Assume we are in menu 2, level 3, and the data at this level requires changing from 4 to 5.

3		4

Level number   Data

Step 1:   Press 'C'

3		

Both displays blank

Step 2:   Press 5

3		5

New data is entered
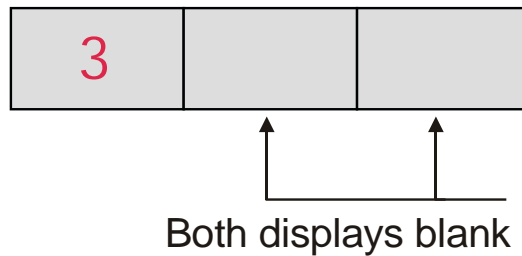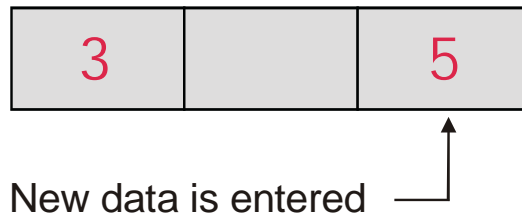
Step 3:   Press 'C'

The display will now blank totally for a short while and reappear.
 (New data is now loaded into the memory).

7.4   EXITING A MENU

Once all the editing has finished and you are ready to leave the menu.
Press the 0 key to return the display to two zeros.

`   You are now in a position to exit the program mode or enter another menu.

7.5   MENU FORMAT

Menu 1 (Plays)

Decide on the number of plays you require for 10p, 20p, 50p & £1 and insert these values into the appropriate levels of menu 1.

Note: The number of plays for the lowest coin value must be entered into the lowest level first.

Example: If we require the following:-

0 plays	- 10p
0 plays	- 20p
2 plays	- 50p
5 plays	- £1

These values are entered into menu 1 as follows:-

	Menu 1	Plays Menu
Level 1	0	Plays for 10p
Level 2	0	Plays for 20p
Level 3	2	Plays for 50p
Level 4	5	Plays for £1

Menu 2 (Coins)

Sound Leisure coin mechanisms accept the following coins:

10p, 20p, 50p, £1 and £2.

These coin values must be entered into menu 2 in 10p units with the lowest value entered into level 1, next lowest into level 2 etc.

NOTE:

The £2 coin pulses the £1 line twice when a SLE 1012 coin board is used.

Example:

	Menu 2	Coins Menu
Level 1	1	10p level
Level 2	2	20p level
Level 3	5	50p level
Level 4	10	£1 level

Remember when deciding on what plays you require for a specific coin value, menu 1 and menu 2 are related to each other via their levels:

i.e. menu 1, level 1, relates to menu 2, level 1.

Menu 3 (Bonus Plays)

Menu 3 is used in conjunction with Menu 4.
We use Menu 3 to obtain plays for Bonus pricing levels.
An example of Bonus plays would be those required for 30p, 40p, 60p, £2,

 ie. Values not catered for in Menu 1 (not single unit coins).

Example: Assume we have already set the number of plays required for our standard coin values in menu 1, and we require two other pricing levels.

      1 play   30p
      11 plays   £2

Enter the number of plays required into menu 3, levels 1 and 2 as follows:-

	Menu 3	Bonus Plays Menu
Level 1	1	First Bonus Plays
Level 2	11	Second Bonus Play
Level 3	0	Third Bonus Play
Level 4	0	Fourth Bonus Play

Menu 3 and menu 4 are related to each other in the same way as menu 1 and menu 2.

Menu 4 (Bonus Plays)

Menu 4 enables you to generate values for which there is no single coin,
e.g. 30p, 40p, 60p, etc.

Following on from our previous example:-

      1 play   - 30p
      11 plays   - £2

Enter the Bonus prices into menu 4, levels 1 and 2 as shown below:-

Remember they must be in 10p units, i.e. £2 = 20 x 10p units, etc.

	Menu 4	Bonus Pricing Menu
Level 1	3	First Bonus Pricing
Level 2	20	Second Bonus Pricing
Level 3	0	Third Bonus Pricing
Level 4	0	Fourth Bonus Pricing

Menu 5 (Factory Settings)

Having set up menus 1 to 4, you can now turn your attention to menu 5 as
shown below.

	Menu 5	Factory Setting
Level 1	30	Maximum number of discs selectable from the keyboard.
Level 2	3	Maximum number of tracks played consecutively from any one disc
Level 3	25	BGM/Random Disc Band (Start)
Level 4	29	BGM/Random Disc Band (Finish)

The data shown in menu 5 is called default settings and are set in production at final test. All these values may be changed to suit a particular installation.

Level 1   You may not wish to install a full 30 C.D.'s in your machine. Therefore, decide on the number of C.D.'s which you intend to install. This number should then be entered into level 1 of menu 5.

Note: Entering the correct number of discs into level 1 ensures that discs cannot be selected outside the range of those installed.

Level 2   This level holds the maximum number of tracks you will allow to be played from any disc consecutively.

Example   If this level is set to four and a customer selects six tracks from a particular disc, four of the tracks will be played consecutively before the disc is returned to the stack, if any other selections have been made these will then be played before returning to play the remaining two tracks.

Level 3   Decide at which start position in the stack you wish to locate your background music (BGM) random discs. These discs MUST be kept grouped together and not spread throughout the stack.

Assume you wish to use 5 discs for BGM/random, located in the stack between 125 and 129, you need to enter the start location where these discs are located into Level 3, ie. 25.

Level 4   Enter the end location of the BGM block into level 4. ie.29.

Menu 6   **(Day, Date, Month, Year)**

	Menu 6	
Level 1	Day	1 = Sunday, 7 = Saturday.
Level 2	Date	1 To 31
Level 3	Month	1 To 12
Level 4	Year	0 To 99 **NOTE: 0 DENOTED YEAR 2000.**

Menu 7 (Settings Hours, Minutes; and Days for Timers 1 and 2)

	Menu 7	
Level 1	Hours	Hour 0 To 23.
Level 2	Min	Minutes 0 To 59
Level 3	Days T1	Timer 1 Days Setting 0 = Every Day, 1= Week Days, 2 = Weekends
Level 4	Days T2	Timer 2 Days Setting 0 = Every Day, 1= Week Days, 2 = Weekends

Menu 8 (Timer 1 Start Hours/Minutes and Stop Hours/Minute)

	Menu 8	Timer 1 Settings
Level 1	Hours	Start Hours 0 - 23
Level 2	Min	Start Minutes 0 - 59
Level 3	Hours	Stop Hours 0 - 23
Level 4	Min	Stop Minutes 0 - 59

Menu 9 (Timer 1 Start Hours/Minutes and Stop Hours/Minute)

	Menu 9	Timer 2 Settings
Level 1	Hours	Start Hours 0 - 23
Level 2	Min	Start Minutes 0 - 59
Level 3	Hours	Stop Hours 0 - 23
Level 4	Min	Stop Minutes 0 - 59

Menu 0 (Random Play Time Setting)

	Menu 0	Factory Setting
Level 1	5	Random Play Setting in Minutes 0 = OFF, 99 = Permanent
Level 2	0	
Level 3	0	
Level 4	0	

7.6   EXITING PROGRAM MODE

Turn the service switch located on the right hand side of the machine to the 'DOWN' position.

Turn Switch 7 of DIL 1 switch bank to OFF position.

This is located on the ACS1067 board.

8. FREE CREDIT

Free credit can be established as follows:-

1.   **Constant**

Constant free credit can be established via Dil Sw 8, i.e.

Example A (ACS1067)

Turn 'ON' Dil Sw 8 on switch bank 1 (DIL1).

Example B (Series 2 & 3 Wallboxes)

Turn 'ON' Dil Sw 8 in wallbox.

9. POPULARITY

The user can obtain data retrieval information regarding the most popular and least popular discs as follows.

AUTOMATIC

On ACS1067 board turn 'ON' switch 3 on DIL 1.

Enter the service mode by turning the service switch to the 'UP' position.

The least played cd will be fetched by the pickup arm.

You can now change this cd.

Press cancel on the selection keypad to return cd to the stack.

The next least played cd's will now be fetched in descending order until the first CD changed is presented again.

Switch the service switch back to the operate position (DOWN), the cd currently on the pick up arm will be returned to the stack.

To clear the popularity table, turn the machine 'OFF' then 'ON' with service switch in the operate (DOWN) position.

MANUAL

If you wish to select your own cd to change ensure DIP SW 3 and 7 are turned off, on switch bank 1.

Enter the service mode by turning the service switch to the 'UP' position.

Now enter the cd number you wish to change via the selection keypad.

The cd you have selected for change will be picked up by the pickup arm.

You can now change this cd on the pickup arm.

Press the 'C' key when the change is complete to return the cd to the stack.

Repeat this procedure for any other changes you wish to make.

To clear the popularity table turn the machine 'OFF' then 'ON' with service switch in the operate (DOWN) position.

10.   SEQUENCE OF OPERATION

1.   Turn machine on, TX4 LED will illuminate for one second.
     If pickup arm is away from its home (sync) position, then it will return to the sync position. If there is a disc on the pickup arm it will be put on the cd player and the selection from the previous on period will be played. If the pickup arm is at any other position then the operation from the previous on period will be finished.

2.   Establishing credit, make selection.

3.   Pickup arm moves to the selected position and stops just below the selected disc.

4.   With the Left limit switch actuated and the right limit switch not actuated, the pickup arm moves in underneath the selected disc until the right limit switch is actuated.

5.   The ACS1067 MPU detects the Right limit switch, instructs the pickup arm to move up one position (40 steps) picking up the disc.

6.   The pickup arm moves out until the left limit switch is actuated.

7.   The pickup moves down with the disc to the play position.
     i.e. 40 steps above the sync position.

8.   The pickup arm moves in towards the laser player until the right limit micro switch is actuated.

9.   The pickup arm now moves down one position (40 steps) to the bottom sync position, depositing the disc on the laser player.

10. The disc clamp motor turns until the disc clamp micro switch closes.
     The laser player is now reset by the ACS1067 board.

     PLAY NOW FINISHES.

11. The disc clamp motor turns until the disc clamp micro switch opens.
     i.e. The clamp arm has now been raised.

12. The pickup arm moves up one position (40 steps) removing the disc from the player.

13. The pickup arm moves out until the Left limit switch is actuated.

14. The pickup arm moves up to the position just above where the disc came from.

15. The pickup arm moves in until the right limit switch is actuated.

16.   The pickup arm moves down one position (40 steps), placing the disc back on
        the stack.

17.   The pickup arm moves out.

PROCESS ENDS

 If any more selections are made the process restarts from stage 3.