OPERATING INSTRUCTIONS

FOR NSM-PHONOGRAPHS

ES IV-CD TECHNOLOGY

to.
Technical Information, Assy

174 903	SILVER CITY
174 831	SILVER SKY
174 486	FASCINATION
175 274	SOUNDMASTER
175 040	FIREBIRD/COUNTRY
176 046	THE PERFORMER "GRAND"

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INDEX

174 903 / 174 831 / 174 486 / 175 274 / 175 040 / 176 046

SELECTOR and DISPLAY PANEL
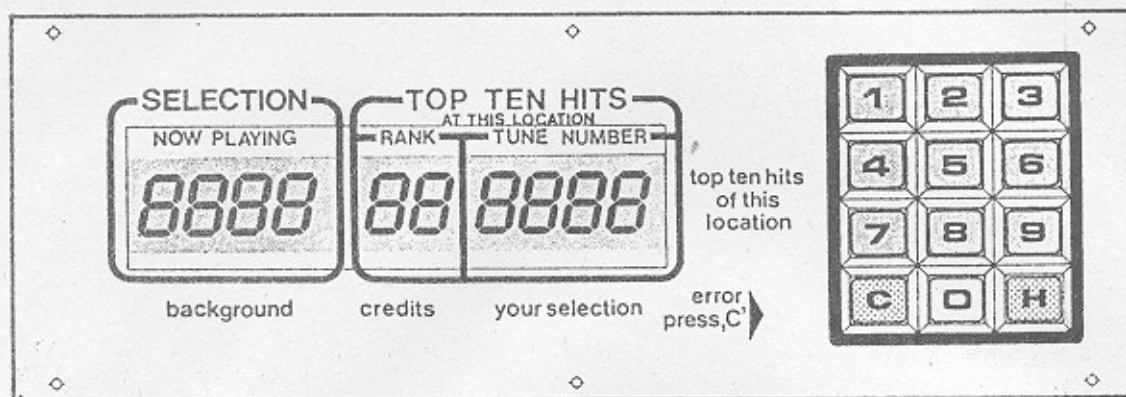
1 PLAYING SEQUENCE

The functional sequence, starting with "power on", standby credit, selection and playing of selected title to the rest position is described below.
The technical assembly and the working together of the components can be seen in the "electronic schematics". Compare the descriptions with the illustration of the display / keyboard above.

1.1 Operation after Switching on

Immediately after switch-on the memory components -on the CONTROL UNIT- and all preprogrammed values are checked.
Display 1 shows then for 2 sec. the program index
If an error is found during checking, error display Er xx is then shown for 2 sec.
With Er 31 (unverified memory contents) and Er 40 (price settings incorrect) Display 1 with Pxx shows the correct program step which needs to be reprogrammed. See description of service programs.
With other Er-displays, even during operation, proceed according to the instructions in "Trouble Shooting".

1.2 Standby

Hit display:
The microprocessor of the CONTROL UNIT figures out of the 30 titles just played before the ones played most.
On Display 3 the title numbers of the 10 most popular titles, whose rankings (1-10) are shown on Display 2, are changed in intervals of 2 sec. Also "10 top hits" lights up.
When pushing "H", the hit display can be stopped for 16 sec; every press of the key causes an advance to the next hit.
Note: When the popularity counters are erased (program step P 10), the hit parade is erased, too. In that case "0" appears for ranking until records are played again.

Random Play:
In program step P24 a time interval can be set for random tune playing.

Conditions for a random title to be played:
- Phonograph in standby mode
- No credit available
- Microphone switch not being used
- No muting
- Set time is expired

1.3 Credits (not for HIDE-AWAY)
See unit description "Coin and Bill Validation".

After insertion of a coin the "hit display" is interrupted, lamp "10 top hits" goes off and "credit" and "your selection" light up. Display 2 shows the number of credits.
For every selection credit is deducted.
If not enough credits are available for the selection, "credit" lamp flashes.
If no more coins are inserted within 16 sec. or no selector key is pressed, the mode changes to "hit display".
Free-credit switch (add. key), below the mechanical coin acceptor or on the adapter PCB with electronic coin validators, is only possible when the cabinet lid is open and the cabinet interlock switch is in service position (press add. button once = 1 credit). These credits are not registered statistically.
Starting with program index 0003 selections can be made without credits after pulling out the cabinet switch and going back to the regular program (2 x "C" key).
Attention! The machine is furnished with an interlock switch which must be manually set in service position (pull out). The switch resets automatically when closing the lid.
Note: Credits remain stored during "power off/on".
If the computer detects no activity on the phonograph within 1 hour, the stored credit is cancelled.

1.4 Selection

Title Selection: The four-digit number of the desired title has to be entered (2 digits each for disc and track). "Credit" and "your selection" light up. The selection can be corrected by pressing "C" up to 2 sec. after pressing the 4th digit.

Album Selection: When entering Track 00, all titles of a CD are automatically played (i.e. 0100 = all titles of Disc 01).
The number of credits which are deducted when selecting an album can be programmed in step P46.
When programming "0", album selection is blocked.
With open cabinet switch (interlock lever pulled out) no credit is deducted when selecting.

If the entry is incorrect, e.g. higher than the programmed number of CD tracks which can be selected or an unallowed selection of albums, "error" flashes. In that case, press "C" and repeat the selection.

One credit is deducted for each selection of a title. With album selections credits are deducted as per the programming in program step P46. If there is not enough credit available, "credit" lamp flashes.

16 sec. after selection "hit display" is switched on automatically again.

Note: If a background or random title is playing during selection, the volume is fading and the selected tune is being played.

When selecting a higher title number than recorded on the CD, the first title (track) of the CD will be played automatically.

1.5 Play Mode

After selection the microprocessor of the CONTROL UNIT moves the pickup of the CD changer to the selected CD and pulls it with its holder out of the magazine into the pickup. The pickup brings the CD to the disc player where it is then played.

Just before play the number of the title is shown on Display 1 ("selection now playing"). After the disc is played, the display is erased and the CD is transported back to its magazine space.

Note: If a error occurs with the CD changer or the player, "Er 7x" or "Er 6x" appears for 2 sec. In that case proceed according to the description in "Trouble Shooting".

Limiting Playing Time for a Title (Track)
In Service Program P30 the time that a title is to be played maximum can be set in minutes.

After expiration of this time the volume for that title is fading and then muted.

When setting "0" (default), there is no limit in playing time.

Sequence of Tunes Playing
In Service Program P31 one can set in which sequence the selected titles are played.

Settings: 0 = in sequence of selection (FIFO)
                   1 = in numerically increasing sequence
                   2 = random sequence

Limit of Playing Titles on the Same CD
One can set in Service Program P32 how many titles can be played consecutively on the same CD.

With 0 (default) there is no limit.

Attention!
When playing a test compact disc, the description that comes with the test disc is to be exactly adhered to. By any means, it is to be avoided to give sine signals with peak signal "OdB" at full volume level to the loudspeakers for more than 1 sec.

But also other unfiltered noises and high-frequency signals (which are only used for measuring purposes) can damage the amplifier and loudspeakers at full volume.

When checking channel separation, this test can only be done with a frequency of 1 KHz.

1.6 Title display

By pushing the keys respectively title holders are moved into the corresponding direction. Upon each key operation two new CD-covers including titlestrips are shown. In case of a limitation of selectable CD's via service step P22 only the corresponding title holders are shown.
Note: A problem with the title display will initiate error code "Er 9x". Following instructions in paragraph 14 (trouble shooting).

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2 ADJUSTMENTS WITH REMOTE CONTROL

The phonograph can optionally be equipped with cable-type remote control or infra-red remote control. All functions and the operation of both models are identical. Therefore, this description is valid for both of them.

The button-control box attached to the rear of the cabinet allows common control of both channels "+" or "-" and **"REJECT"**.
Information about the functions of different controls is presented in the unit description "Remote Control".
Note: The button volume control is not present with wallboxes such as the "CD FIRE" or the "CD HIDE AWAY".

2.1 Volume Controls

We differentiate between two volumes:
1.) The normal volume of selected titles and random play titles
2.) The background volume of background titles

For selected titles and random titles or with microphone and tape mode the corresponding volume is adjustable; background volume only with background mode:
Key "I" for the left channel; Key "II" for the right channel; "+" = louder, "-" = quieter. When pushing center key (I+II), the channels are regulated together. If they were differently set, they are first "balanced" and regulated together.
When no selection is taking place, the volume for the channels are shown in Display 3 during the adjustment in steps of "1" to "31".
At "muting" function "OFF" appears in Display 1; no more titles will be played until MUTING is cancelled.
The volume set at the end is stored during "power off".
The maximum possible volume for normal and background mode can be limited in service program P28 in steps of "1" to "31".

Note: To protect the amplifiers a check is made whether an overload occurs due to mismatching in 250 ms cycles.
Upon recognition of an error the volume of the corresponding channel is reduced step by step automatically by the computer until a non-critical point is reached.

2.2 Muting

The volume of both channels can be set at "0" by pressing the MUTING key; "OFF" appears on Display 1. Re-pressing of the MUTING key a VOLUME "+" key causes the system to switch back to the previously set volume for both channels.

Note: With display "OFF" no more records are played until MUTING is switched off.

2.3 Free Credits

With an "open" key switch free credits programmed in program step P23 can be called up. The following free credits are possible depending upon the settings in step P23:
1.) Number of set free credits can be called up individually step by step.
2.) Unlimited free credits can be called up individually step by step.
3.) Permanent credit when pressing key "FREE CREDIT" for the first time (credit display "99"). When key "FREE CREDIT" is pressed again, permanent credit is blocked.

2.4 Background Music

With an "open" key switch the background mode can be switched on with the BACKGROUND key. "Background playing" lights up.
When pressing this key again, the background mode is switched off. In the background mode "random" records are played from the upper area of the magazine. The area can be set in program step P25.
The records are played at a "specific" background volume which can be changed as desired during playing cycle from "0" up to maximum volume set in program step P28.
A "normal record", selected while background music is playing, interrupts the background disc and the selected tune is played at "normal volume".

2.5 Key Switch

A key switch at the side wall serves as protection against unauthorized calling up of free credits and switching on the background mode. When the key switch is "locked", settings from the remote control are disregarded. Key switch "open" permits programmed free credits to be called up and the background mode to be switched on.
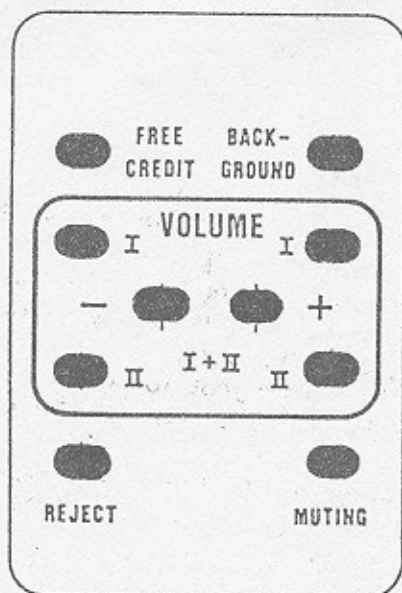
REMOTE CONTROL

3 Service Operation —Short Program for 'Pice Settings—

This description is a summary of a section of the service program.
A detailed description and the corresponding tables are contained in chapter 1.3 "Price Settings" and 1.4 "Monetary Value Settings".

Practical example for setting the "plays per monetary unit" and the "monetary unit settings":

1 play = 30 p	1 play = 2x25 c
2 plays = 50 p	2 plays = 4x25 c
5 plays = 1 £	

Setting the price able (plays/monetary unit):

Programming information	Operation	Displays 1	2	3
Switch-over from play mode to service mode	pull out plunger	P01		xxx
	Press key(s)		SP:	GW:
Select a program step	"C"	P		
Direct selection of program step, Display of previous setting in P41.	"41", "H".	P41	xx	xxx
New setting in P41 "1 play/30 p".	"01", "02", "H".	P41	01	030
Advance to next program step, Display of previous setting in P42.	"H"	P42	xx	xxx
New setting in P42 "2 plays/50p".	"02", "050", "H".	P42	02	050
Advance to next program step, Display of previous setting in P43.	"H"	P43	xx	xxx
New setting in P43 "5 plays/1 £".	"05", "100", "H".	P43	05	100
Advance to next program step, Display of previous setting in P44.	"H"	P44	xx	xxx
For only 3 classes setting "00 000".	"00", "000", "H".	P44	00	000
Advance to next program step, Display of previous setting in P45.	"H"	P45	xx	xxx
For only 3 price classes setting "00 000"	"00", "000", "H".	P45	00	000

Caution! Press "C" key in the event of incorrect programming or when display flashes.

Press "C" key twice or close hood to **return to standard program** (play mode).

Monetary Value Settings:

The individual coin channels must be programmed for the associated monetary values in the corresponding program steps: Channel 1 for 20 pence in program step P51, channel 2 for 50 pence in program step P52, channel 3 for 10 pence in program step P53. Channel 4 (P54) and channel 5 (P55) are not used; both must be programmed with the monetary value "0"!

Checking the monetary value settings: Select a program step between P50 and P55 (see description under "setting price table"). After inserting a certain coin the channel associated with the coin is displayed, e.g. 50 pence in channel 2: Display P52 050.

Changing the monetary settings: As a example, the 20 pence slot (channel 1) is not to be used: First enter program step P51 as described in point 1. In the coin acceptor or on the adapter PCB of electronic coin validators the respective channel has to be blocked also so that these coins drop into the coin return.

Programming information	Press keys	Displays 1 2 3		
Direct selection of program step, Display of previous setting in P51.	See text.	P51		xxx
New setting; no coin conversion	"000", "H".	P51		000

If the standard setting according to the table is to be used thereafter, frist switch on program step P50 (as described previously).

Ready for standard setting P50 through P55	See text.	P50		
Program standard table 1.	"1", "H".	P50		1

Press "C" key twice or close cabinet hood and **return to standard program (play mode)**.

4 CD CHANGE / CASH COLLECTION

■ Open machine and activate cabinet switch (pull out plunger) to enter into service mode. Display 3 automatically shows the least played CD.

■ By pressing "1" successively, the next best CD is shown each time.

■ Unlock magazine, swing out; pull out the corresponding CD holders to change CD's. After changing push back CD holders until they lock in.

■ Change corresponding title cards, unlock flip-chart unit and flap down. Get desired program tables in position with the button on the PCB of the right-hand side of the unit.

■ Read counters: P03 = Cash total
                     P04 = Counter for plays
                     P05 = Number of selected titles
                     P06 = Number of selected albums
                     P07 = Number of free credits provided
   P08 = Number of background CD's played

■ Erase counters: P10, Code "1", counters P01 to P08 are erased.

■ For more information see "Statistics and Service Programs", Section 1.1, Statistics Program, P01 to P12!

							BUT.
P01	Popularity beginning with least played CD upwards		P02	Pop. beginning with most played CD downwards			
	No. of least played CD			No. of most played CD			0
	No. of next least played CD			No. of next most played CD			1
	Rank of CD displayed			Rank of CD displayed			2
	Times played			Times played			3
	Information about a certain CD			Information about a certain CD			4
P03	Total cash in monetary units		P04	Counter of played titles			0
	Total cash cumulative in monetary units/100			Counter of played titles accumulated			1
P05	Number of selected title		P06	Counter of album selections			
P07	Number of free credit		P08	Counter of played album titles			
P10	Cancel of counters		P12	Transfer of DATA PRINT **)			
	Popularity, HIT-Parade, Counter P03-P08, Credit			Counter P03-P08			1, H
	Popularity (P01, P02), HIT-Parade			Counter P03-P08; Settings P21-P56			2, H
	Counter P03-P08			Popularity, Counter P03-P08			3, H
	Credit			Pop. counter P03-P08; Settings P21-P56			4, H
P11	Data transfer and memory (storage) *)						1, H
P20	Autom. programming of the prog. steps P21-P39 according to table						1, H
P21	Unit code	P22	No. max. CD-Tracks to be selected	P23	No. of free credits		x, H
P24	Random play interval	P25	No. of CD's progr. f. backgr. music	P26	Light gener. f. stand by ***)		x, H
P27	Light gener./organ for play ***)	P28	Maximum volume				x, H
P30	Max. play time for a title *)	P31	Sequence of plays *)	P32	Max. titles in CD sequence *)		x, H
P38	Authorization with code numb	P39	Code number				x, H
P40	Autom. programming of the steps P41 thru P46 (play/cash value) according to table						x, H
P46	No. of credits for an album selection						x, H
P50	Autom. programming of the steps P51 thru P56 (coin value acceptance) to table						x, H
P56	Bonus credit for Bill						x, H
P60	Test programs						x, H
P61	Programming optional Numbers of CD-Tracks						xxxx, H
P62	Read-out of error code						0; 1; 2; 3; 4, 1, H

***)   If installed

*)   from Progr.-Index 004;

**)   from Progr.-Index 003.

				(Interrupt / run)	H
P60		Display 1 Display 2 Display 3		Error Display	

Display and light test: F 1   1, H

Input test: F 2   Port-No.   Bit-No.   Status   2, H

Continuous Run 1
(playing continuously):   F 3   Number of errors   3, H

   F 4   Number of errors   4, H

Continuous Run 2
(repeatedly playing):   F 5   5, H

CD = Changer test:
"2" = Lift upwards
"8" = Lift downwards
"4" = Grip left
"6" = Grip right
"5" = Return holder
"0" = Keep lift position
"3" = Motor step, upwards   *)
"9" = Motor step, downwards   *)

OPTO stepper control   OPSTP
OPTO endposition   OPEND
OPTO grip right   OPGRR
OPTO pickup center   OPPUM
OPTO grip left   OPGRL

With Display "0" = lit up
With Display "1" = darkened

P61	Number of track numbers	xxxx, H
P62	Error code of least error	0
	Error code of previous errors (up to 10)	1
	No. of CD at which error occurred	2
	Time in hrs./min. since "power on" or start of P60/3 or P60/4 when error occurs	3
	Cancellation of stored error code	4

*) from Progr.-Index 004

Error Messages

Er	Error	Action
0x	EPROM	Check or replace corresponding component or unit. See special information in "TROUBLE SHOOTING".
1x	RAM	
2x	Program	
3x	Verifaction	
4x	Price settings	
5x	Coin mechanism/ Bill validator	
5x	CD-Player	
7x	CD-Changer	
8x	Wallbox-Connection	
9x	Title indication	

SHORT INSTRUCTION:
For statistics and service programs; test programs, error displays.

Detailed description in Section 3 "Statistics and Service
Programs" as well as Section 14 "Trouble-Shooting".