

# MEMORIES LITTLE HELPER™

Automated Mixdown from Allison Research

Memories Little Helper™ is a complete package of automated level control designed for retrofit into existing consoles or installation in new equipment. Its design embodies an intense degree of human and technical engineering, coupled with a remarkably small size and an unparalleled magnitude of performance.

In a typical installation, the existing faders on the console are utilized, while the necessary VCA's, logic switching and programmer are rack mounted. A 16 track package requires a mere 8 3/4" of rack space. No mechanical modification need be performed on the console. Its appearance and performance remain unchanged, except for its newly acquired ability to remember fader positions and changes! You also get grouping masters out of the deal!

Take a look at the features and specifications for a 16 track system and see if it doesn't do everything you want. (Then look at the price!)

## FEATURES

- \* 100db range of active, dynamic memory
- \* Electronic switching of read, write and update modes, controlled individually or by master control panel
- \* Engineered for remote control of modes (individual and master)
- \* Optional preset operating modes
- \* 5 programable grouping sub-master controls
- \* Expandable and compatible up to 256 channels or variable functions
- \* Null indicators for fader level to memory level matching
- \* Adaptable to "fixed in console" or "plug in portable" applications
- \* Over range indicators
- \* Programmed "Grand Master"
- \* Accepts linear or log faders

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## CONDENSED PROGRAMMER SPECIFICATIONS

(for a 16 channel system)

Scan Time (update rate)	8 milliseconds (updates 125 times per second) ("A" scan rate) 12.5 milliseconds ("B" scan rate)
Resolution (step response)	.5db, first 50db attenuation 2db, 50db to 100db attenuation
Permissible Updating Passes	Infinite
Allowable Speed Variation	+20%, -60%

### VCA (typical)

Noise	-111db with respect to max output (on-unity gain) -125db with respect to max output (off)
Max Input & Output Levels	+21dbm
Distortion	.05% at any attenuation
Max Attenuation (kill)	Greater than 125db
Linear Range of Control	80db

## THE PACKAGE

A Memories Little Helper™ system is comprised basically of two rack mount units. The Allison/Automated programmer, Model 128 E/D (128 function capacity), occupies 5 1/4" by 19" of rack space. It is fully compatible with the 256 E/D programmer, but is scaled down in size for systems requiring less than 128 variable functions.

The second package requires but 3 1/2" of rack space and is designated MLH 116. It contains 16 plug in modules, each housing a VCA, mode select logic and controls, group master logic and controls plus visual parameter indicators. A seventeenth module performs the master mode selection and contains data track change over circuitry.

A 24 track installation requires a second MLH 116, containing only 8 modules.

Interconnect facilities allow one master control module to control an unlimited number of channels.

All wiring terminations are via scotchflex flat wire and connectors, with no soldering required.

Installation into an existing console may generally be performed in one day. Some consoles may be retrofitted directly through the patch bay.

for portable applications, an outboard fader package is available, enabling instant patch bay connection to any console. Of course, such a system requires that level mixing be done on the outboard fader bank, rather than on the console faders.

Also optional, is a remote preset package which allows the programming of complex patterns of mixdown changes.

## GENERAL OPERATIONAL DESCRIPTION

In order to be able to program relative gain settings and changes, voltage controlled elements are employed. In this manner, varying D.C. voltages are produced which are exactly proportional to relative fader positions. These voltages are processed by the programmer and put to memory on the master tape. In most mixing applications, two spare tracks on the master tape are utilized as data tracks. With each pass of the tape, the user has access to the mixing data previously encoded on a data track. He also has the capability to produce new data from the faders themselves. The two sources of data may be combined in any fashion which produces the desired results and re-encoded on the other track. In combining the two sources of data, it is entirely permissible to punch back and forth between remembered levels and real time fader levels, during the course of a song.

Each time a pass of the tape is made, the newly generated data is encoded on the alternate data track. As many such "programmed passes" as desired may be performed, each time modifying the levels and changes, until the mix is precisely correct. Once this is done, a permanent memory of the mixing maneuvers is established and may be recalled with absolute accuracy as many times as desired. Months or years later, the memory will be as exact as the moment it was encoded. However, the memory may be altered in any fashion and at any time, or may be over-ridden (in whole or part) with the manual faders.

## THE CONTROLS

Each module in the MLH 116 package contains the following circuitry and controls; VCA, "write button", "read button", "update button", group master selector, group master status indicator and null indicators for level matching. An explanation of their functions follows:

"WRITE MODE - IN WRITE MODE" - The level is controlled in real time by the fader. Previously encoded data has no effect on the level in this mode. Data produced by the fader in "write mode" may be encoded on the master tape and may be recalled at will.

"READ MODE" - Here, the level is controlled by the previously encoded data. In this mode, the fader has no effect on the level. Data produced in "read mode" may also be encoded, if desired, on the alternate data track. The result of encoding data in "read mode" is a simple transfer of information from one data track to the other. This seemingly senseless transfer of data does indeed have a purpose. Assume it is desired to keep the previously programmed level of the drum track during the first half of the song, while re-programming the drum level during the second half. This may be done by starting the tape in "read mode", then punching to "write mode" at the point where the change is to occur. Assuming the entire transaction has been encoded on the alternate data track, the result will be the composite of the

two data sources. (Transferral of "Read" data plus introduction of the new data) is the basic method of "building up a mix".

"UPDATE MODE - IN UPDATE MODE" - Both the fader and the previous data control the level. The previous data (including its variations) is modified by the relative position of the fader. An "index point" is established on the fader. (In most systems, this "index point" is the -15db position on the fader). When the fader is placed above the index point, db's are added to the previous data, while fader positions below the index point result in db's being subtracted from prior data. For instance, a fader position of -10db (5db above the index point) will result in 5db being added to the previously programmed level. Assuming, the engineer was "riding gain" on the previous levels, his variations will still be present, but at a 5db higher level. "Update mode", then, serves its best purpose when gain variations are correct, but the overall level requires modification. Again, punching between update and read or write modes during the course of a song is certainly permissible and often very beneficial.

NULL INDICATORS - In punching from "read mode" to "write mode", it is often necessary to make the transition smoothly to avoid sudden and unexpected changes in level. To do this, one must know where the programmed data is, relative to where the fader is, prior to making the punch. Two light emitting diodes on each module provide the operator an extremely accurate and simple means of determining the data to fader relationship.

GROUPING SUB-MASTERS - A switch on each module enables each track to be assigned to one of 5 grouping masters. A sixth position connects the track to none of the groups. Each grouping master alters the level of all tracks assigned to it, without affecting the signal to echo relationships or panning, an additional benefit of VCA technology. The affect of the group masters may be programmed (as indicated by the group status indicators) or non-programmed. When non-programmed, movement of the group masters will alter the real time levels but will not be encoded as data. In program mode, the alterations will become part of the memory pattern.

The programable group masters offer a simple means of updating an entire group of tracks (i.e. the rhythm section) with one control. The group masters also utilize an "index point", making level matching unnecessary.

OVER-RANGE INDICATION - Since the system has a finite working range (100db), it is possible to present data which is out of its working range. This, of course, is true of all automation systems and certainly more critical on systems with lesser dynamic range. Memories Little Helper is self limiting, with respect to range, making it impossible to present out of range data to the programmer. However, it would be nice to know when the point is reached that an increased fader position will fail to produce an increase in sound. (Our ears are quite capable of being fooled by our eyes).

When such a condition occurs on any track of Memories Little Helper, its respective module produces a very annoying blinking condition on the null indicators. Fortunately, such an occurrence is extremely easy to correct. Just assign all tracks to one group master, pull it down a few db and program the change. You have effectively lowered each track level by precisely the same number of db's thereby maintaining exactly the same perspective as before while adding enough head room to complete the mix. Raise the grand master a corresponding amount and you are audibly, exactly where you were. (The grand master does not alter the individual track data, but affects the VCA's directly). It, too, is programmed, but has its own data channel.

## MASTER CONTROL PANEL

The seventeenth module in the MLH 116 is a master logic control package. It contains "Read", "Write" and "Update" buttons. When any of these buttons are momentarily depressed, all modules in the system switch into the corresponding mode. Consequently, mode selection may be made on an individual basis, at each module, or on a master basis at the master module. Remote selection of operating modes may also be easily wired into a system.

Also on the master module are a data track change over switch and a group master status switch. The data track switch provides a convenient means of selecting the proper data track, without cumbersome patching. The group master status switch is a momentary toggle switch. Operating this switch causes the affect of the group masters to be "programmed" or "not programmed".

Group "programmed" mode also results when "master write" is pressed, as does "not programmed" mode when "master read" or "master update" is pressed.

## CONCLUSION

There is alot more to MEMORIES LITTLE HELPER. The door to the fantastic world of affordable automated mixdown is wide open. Why not put your foot in it?

MEMORIES LITTLE HELPER <sup>tm</sup>

Preliminary User Price Schedule

Sept. 1973

COMPLETE 16 TRACK SYSTEM

(Your board supplies the faders, we supply the rest)

\$9,250.00 Includes

- (1) Programmer Model 128 E/D with 16 functions
- (1) MLH 116 package with 16 modules and 1 master logic module
- (1) Power supply
- (1) Interconnect package

COMPLETE 24 TRACK SYSTEM

\$13,500 Includes

- (1) Programmer Model 128 E/D with 32 functions
- (1) MLH 116 package with 16 modules and 1 master logic module
- (1) MLH 116 package with 8 modules
- (1) Power supply
- (1) Interconnect package



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