

MessageMate 40™ User Manual

Models 40/150, 40/300, 40/600

Integrated

Communication

Systems

And Computer

Access Software

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MessageMate 40 User Manual

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1 Introduction to MessageMate 40

Congratulations on your purchase of a MessageMate 40, the lightweight, portable voice output communication aid from Words+, Inc. Your MessageMate 40 is designed to give you years of easy-to-use, trouble-free speech output communication.

The MessageMate is a device that stores recorded sounds and lets you play them back. It is not a voice synthesizer, which assembles elementary sounds to produce words and sentences. It is more like a tape recorder, except that there is no tape. The sounds are recorded from the built-in microphone and stored in integrated circuit chips in the internal electronics. The MessageMate 40 is available in three models:

MessageMate 40/150 with 40 keys and 150 seconds total recording time

MessageMate 40/300 with 40 keys, 4 levels, and 300 seconds total recording time

MessageMate 40/600 with 40 keys, 4 levels, and 600 seconds total recording time

(There is also a MessageMate 20 series with 75 and 150 seconds total recording time and a MessageMate 8 with 60 seconds of total recording time.)

Because the sounds produced by the MessageMate are recorded, you can use it to speak any language (or more than one language!) and to produce other sounds, such as a dog barking or a bell ringing, for training purposes. Also, recording allows quick reprogramming — all 40 items can be rerecorded in just a few minutes. Each key on the MessageMate keyboard is independently recorded, so you do not have to rerecord all keys just to change one.

The MessageMate is intended for use when:

- a small number of basic messages is sufficient for most of the situations the user encounters.
- an extremely rugged device is needed.
- low cost is important.
- simple language concepts are desirable.

About This Manual

The remainder of this manual describes the operation of the MessageMate.

Section 2 provides a basic physical description of the device.

Section 3 describes how to use the device with the sample messages we've stored for you and how to put new messages into the MessageMate.

Section 4 presents samples of ways to program the MessageMate for efficient communication with only 40 messages.

Section 5 explains the specifications and instructions on the use of the Multi-Level feature of the 40/300 & 40/600 models.

Section 6 provides the operating instructions for the Message Builder Feature.

Section 7 provides troubleshooting tips in the event you experience a problem with your unit. Of course, if you require further assistance or have questions or suggestions, please call our technical support staff toll-free in the United States or Canada at (800) 869-8521, from outside the United States or Canada at (661) 723-6523, or fax us at (661) 723-2114.

2 Physical Description

The MessageMate 40 is a device that weighs approximately 1 3/4 pounds (about 3/4 kilogram) and is approximately 11.75 inches (29.9 cm) long, 4 inches (10.1 cm) wide, and 1.25 inches (3.2 cm) thick. Several views of the unit are shown in Figure 2-1.

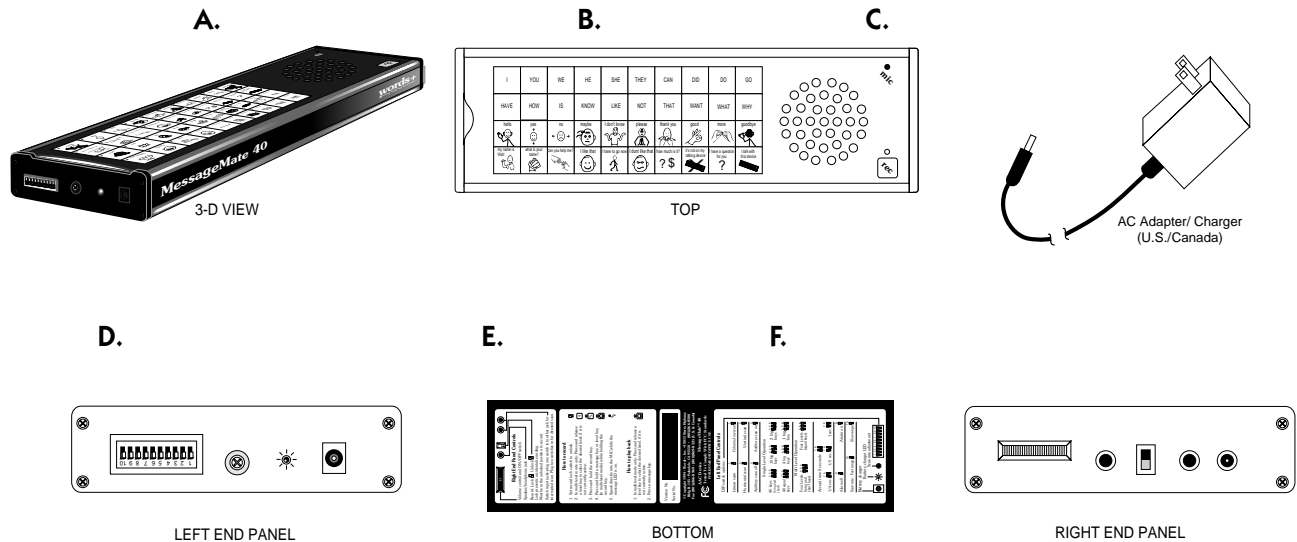


Figure 2-1

The main body of the case is made of aluminum. The end caps are made from high-impact plastic. The top of the unit (Figure 2-1B) includes the keyboard, which consists of forty 3/4 x 3/4 inch (1.9 cm x 1.9 cm) membrane keys, 40 light-emitting diodes (LED's) within each of the keys, a RECORD key separate from the 40 language keys, a RECORD LED to indicate when the unit is in the RECORD mode, a hole for sound to enter the built-in microphone, holes for sound to exit from the built-in microphone, and holes for sound to exit from the built-in speaker.

The 40 language keys are sized to match the 3/4 inch picture symbol stickers from the Mayer-Johnson™ Company (PCS - Picture Communication Symbols). A clear plastic pocket is provided on the keyboard to hold a clear sheet of plastic with words or symbols representing the recorded speech items (this sheet is called an overlay). Extra overlays are provided in back of this manual. These can be filled with whatever symbols or words you find most convenient. If you would like to have more picture symbols, the complete set of Mayer-Johnson stickers is available from Words+ (See pg.5).

The left panel (Figure 2-1D) has 10 DIP switches used to set various modes for the MessageMate, a scan rate adjustment screw, a battery charger LED, and a coaxial jack where the battery charger is plugged in.

The bottom (Figure 2-1E) has some brief instructions on the operation of the MessageMate. These instructions include where to plug in the A/C Charger, how to record, how to play back the messages and the placement positions of the dip switches for the various features offered.

The right end panel (Figure 2-1F) contains the thumbwheel-style volume control (which is also the master ON/OFF switch), a mono miniphone jack for an external speaker (in the event you want to use a bigger speaker for more volume), a record lock switch, and two 1/8 inch (3.2 mm) miniphone jacks for switch inputs to allow scanning operation on MessageMate.

The standard AC adapter/charger can be plugged into the bottom of the MessageMate unit (Figure 2-1C) for the purpose of recharging the internal battery and/or operating the unit on AC power if the internal battery becomes completely discharged.

Specifications

Dimensions: 11.75" x 4" x 1.25" (29.9 cm x 10.1 cm x 3.2 cm)

Weight: 1 3/4 lbs. (approx. 3/4 kilogram)

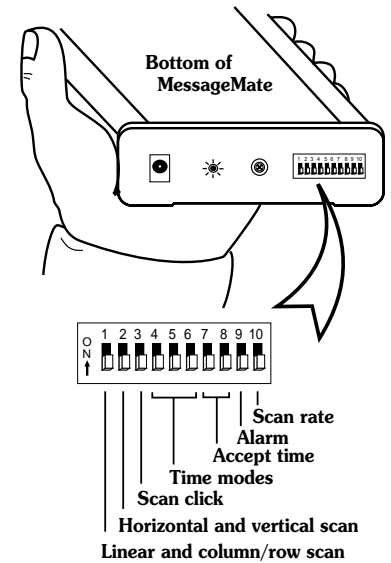
Number of keys: 40

Total recording time:	Model
	40/150: 150 seconds total
	40/300: 300 seconds total
	40/600: 600 seconds total

- Key size: 3/4" x 3/4" (1.9 cm x 1.9 cm)
- Key sensitivity: 6.4 oz (approx. 180 gr) - somewhat more with optional clear plastic stiffener
- Keyguard: Optional
- Materials: Aluminum, fiberglass, and high-impact plastic
- Language: Sample overlays/Optional Mayer-Johnson or Imaginart™ stickers or Blissymbol™ icons
- Scanning switch modes: 1 switch interrupted, 2 switch directed
- Scan patterns: Linear or column/row
- Scan rate: 1/8 second per step to 10 seconds per step
- Auditory scanning: Stepping tone and
3/4 second recorded cue
- Switch accept time: 0 seconds, 1/4 second, 1/2 second, 1 second
- A/C Charger Specifications: 12VDC to 35VDC 300 mA
2.1 mm female coaxial plug
Polarity: + or B (MessageMate is designed to accept either).

3 Operation

You will find that the MessageMate is very easy to use. Take your MessageMate out of the box, turn it on (with the volume control), and press any key to produce speech output using the sample messages loaded in at Words+. This section describes how to make the MessageMate produce messages. Section 4 describes how to record them.



Master Power and Volume Control

The thumbwheel-style volume control also contains the master ON/OFF switch, which operates like many radios. You should feel and hear a “click” when the power switch is activated. When the switch is OFF, you cannot move the thumbwheel without turning it back ON. When it is ON, moving the thumbwheel controls the volume level of the speaker and allows you to turn the unit off.

Battery and AC Adapter

Note that you need not turn the unit off in normal use. MessageMate automatically goes into a sleep mode between messages. In the sleep mode, a fully charged battery powers the unit for nearly two months. Actual battery life between charges depends on how often you use the unit. You should be able to generate more than 5,000 messages on a full charge. Turn the thumbwheel to the OFF position when you won't be using the MessageMate for several days or when you pack it for shipping (so that if something presses against the keys while MessageMate is packed, it won't run the battery down).

MessageMate requires 10 to 15 hours for a full charge. When the batteries are low, the unit makes a special sound (beep, beep, bop) after each message to alert you. The rechargeable NiMH batteries inside the MessageMate should be completely discharged before being recharged. It is best to use the unit until it gives a low-battery warning sound. If the unit is constantly charged, the batteries lose their ability to hold a charge. If this happens, go back to using the unit until it gives its low-battery warning sound and then recharge it. After a few charges and discharges, the batteries should recover the ability to hold a charge.

If your AC adapter should be lost or broken, to avoid violating the warranty, it is best to call Words+ for a replacement. However, most AC adapters (either 50 or 60 HZ) providing output of 12VDC to 35VDC and at least 300mA should work fine. The connector on the adapter must be a 2.1mm female coaxial plug. The MessageMate is designed so that either positive or negative tip is acceptable.

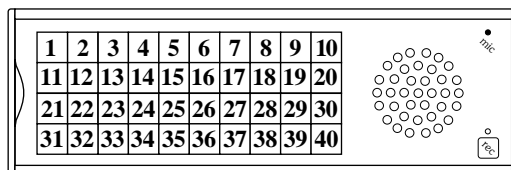
Keyboard Time Adjustments

The amount of time allotted for each key on the keyboard is adjustable to best suit your needs and can be changed whenever necessary. Set the DIP switches for the following adjustments:

Single-Level Mode

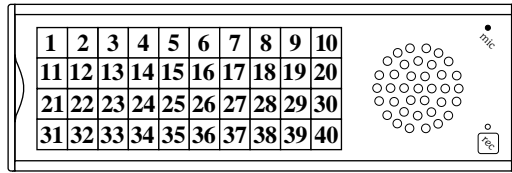
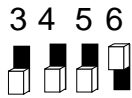
40 Keys (Long and Short)

40/150 40/300 40/600



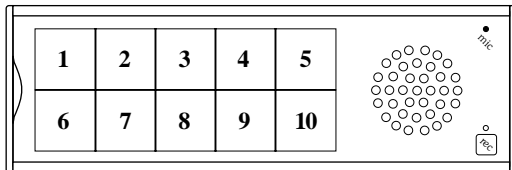
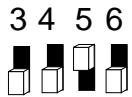
Keys 1-20	2	3.75	7.5
Keys 21-30	4	7.5	15

40 Equal Keys



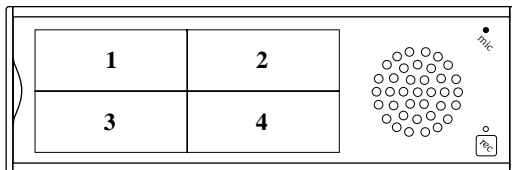
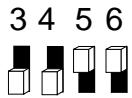
Keys 31-40	7	15	30
	40/150	40/300	40/600
Keys 1-40	3.75	7.5	15

10 Big Keys



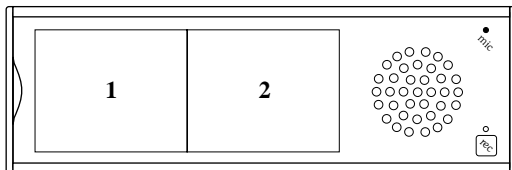
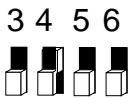
	40/150	40/300	40/600
Keys 1-10	15	30	60

4 Big Keys



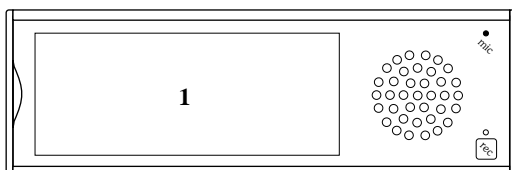
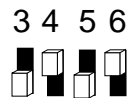
	40/150	40/300	40/600
Keys 1-4	37.5	75	150

2 Big Keys



	40/150	40/300	40/600
Keys 1-2	75	150	300

1 Big Key



	40/150	40/300	40/600
Keys 1	150	300	600

Playing Messages with the Keyboard

Your MessageMate was shipped from Words+ with a sample set of messages and a sample overlay containing 40 picture and word symbols (Figure 3-1). Additional Mayer-Johnson and Imaginart picture stickers are available from Words+. You may need to cut the corners of these stickers to expose the LED lights that are within each key on the keyboard.

Turn the volume control/ON-OFF switch to on and set the volume to about the middle of the range of free movement on the control. Now press the “yes” key on the keyboard. The unit should say “YES.” Now try the other keys. Each one should produce the message shown on the key. That’s how easy it is to use the MessageMate!





















I	YOU	WE	HE	SHE	THEY	CAN	DID	DO	GO
HAVE	HOW	IS	KNOW	LIKE	NOT	THAT	WANT	WHAT	WHY
hello 	yes 	no 	maybe 	I don't know 	please 	thank you 	good 	more 	goodbye 
my name is 	what is your name? 	glad to meet you 	I like that 	I have to go now 	I dont like that 	how much is it? 	it's not on my talking device 	I have a question for you 	I talk with this device 

Figure 3-1

Adjusting the Keyboard





There are two adjustments you can make to change the “feel” of the keyboard: (1) the accept time for the keys and (2) the amount of pressure required to activate a key.

Keyboard Accept Time

For some users, keys may be activated accidentally when the user brushes against other keys while moving toward the desired key. When this happens, the keyboard accept time may need to be adjusted.

The accept time is the amount of time the user must hold a key pressed before the MessageMate accepts it. For example, if the accept time is set for a half second and the user brushes against a key briefly (less than a half second), the MessageMate ignores that key. If the user holds the key for more than a half second, the MessageMate accepts the key and produces the corresponding message.

Keyboard accept time is adjusted easily using the DIP switches on the left end of the MessageMate. The DIP switch settings are as follows:

SWITCH POSITIONS FOR KEYBOARD ACCEPT TIME		
	7 down and 8 down	0.0 seconds
	7 down and 8 up	0.25 seconds
	7 up and 8 down	0.5 seconds
	7 up and 8 up	1.0 seconds

Keyboard Pressure

The standard amount of pressure required to operate the MessageMate keys is about 6.4 oz. (180 grams). This assumes that only a single sheet of paper with symbols is placed under the plastic pocket window. For some users, standard pressure is too light and keys are accidentally activated. To increase the amount of pressure required to activate the keys, insert an optional, clear plastic stiffener sheet underneath the overlay.

An optional keyguard is also available to fit the MessageMate. This clear plastic sheet of material, which has holes in it for the keys, is mounted and supported so that the user can rest his or her hand on the keyboard without activating any keys. The user then must reach through the holes to push the appropriate keys. Unlike other keyguards that have small, round holes, this keyguard has square holes with rounded corners to accommodate larger fingers.

Playing Messages By Scanning

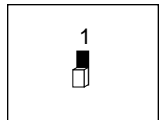
With the MessageMate, scanning is selecting a message by operating one or two switches. You operate the switch(es) based either on LED's that light up next to the keys or by listening to the auditory "scan click" sound produced as the MessageMate steps from one LED to the next.

If you plug only one switch into either of the switch jacks on the right end panel, the MessageMate automatically performs an "interrupted" scan when the switch is operated. If you plug two switches into the switch jacks, the MessageMate performs a "directed" scan. These methods of scanning are described in the one-switch and two-switch scanning paragraphs below.

Within one- or two-switch scanning, the MessageMate also offers the option of either a linear or a row-column pattern for scanning.

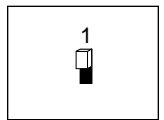
Linear Scanning

Linear means "in a line." If you set DIP switch 1 to the down position, the MessageMate uses a linear scan, lighting the LED's one at a time across the top row and then across the second, third, and finally the bottom row. When your message is lit, activate your switch again and your message will be spoken. This scan will go through all forty keys twice.



Column-Row Scanning

If you set DIP switch 1 to the up position, the MessageMate uses a column-row (or row-column) scan, lighting the four LED's in the first column, then the second and third until the tenth and last column. When the LED's in the column that contains your message are lit, activate your switch and the LED's will then alternate between the four LED's in that row. When your message is lit, activate your switch again and your message will be spoken. This scan will go through all ten columns twice. When the column is selected, the scan will go through the four keys five times and if no selection is made, the scan will go through all ten columns again, twice.



One-Switch Scanning

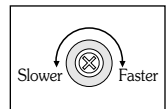
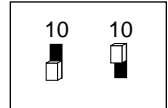
In one-switch scanning, the MessageMate uses an interrupted (sometimes called automatic) scan. At first, all LED's are off while the unit is in the sleep mode to save battery power. When you operate your switch, the MessageMate begins to light the LED's, using either the linear or the row-column pattern described above. Each LED lights up for a certain amount of time before stepping automatically to the next LED. When you operate your switch to interrupt the scan, you are selecting the lighted LED(s). In linear scanning, when you select an LED, the message stored under the corresponding key is played back. In column-row scanning, you first select a column of LED's and then operate the switch again to choose one of the LED's in the column. Then the recorded message is played back.

Two-Switch Scanning

In two-switch scanning, the MessageMate uses a directed (sometimes called inverse) scan. At first, the LED's are off while the unit is in the sleep mode to conserve battery power. One of your two switches serves as a "step" switch and the other as a "select" switch. When you press the step switch, the MessageMate begins to step from one LED to the next (or from column to column if you are using row-column scanning). When you reach the LED you want to select, release the step switch and press the select switch. It is preferable to leave all the LED's off when you are finished using the unit to conserve battery power. To do this, simply complete the selection without starting another scan until you are ready. If you do leave an LED on, don't worry. The MessageMate can run for many hours before it needs to be recharged.

Selecting the Stepping Rate

The stepping rate is adjusted in two ways: the range switch and the rate knob. DIP switch number 10 selects either the fast or the slow range of speeds. With DIP switch 10 down (fast), the speed ranges from about .1 second per step to about 1 second per step. With DIP switch 10 up (slow), the range is from about 1 second to 10 seconds per step. The actual speed within either range is set using the white scan rate adjustment knob in the left end panel next to the DIP switches. Turn the control to set the speed at a comfortable level.

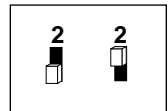


Rate Knob

Turning the Scan Click On or Off

For many users, it helps to have the MessageMate produce an audible "click" at each scan step. This auditory feedback, which enables some users to scan at higher speeds than with visual feedback alone, provides a rhythm to the scanning process, making it easier to learn.

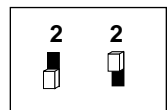
MessageMate 40's with less than 120 seconds of recording time produce such a scan click. The scan click rises in pitch to help indicate the scan-stepping process to visually impaired users. The scan click is turned ON or OFF with DIP switch number 3 on the left end of the MessageMate. When the switch is up, the click is ON, and when it is down, the click is OFF.



Auditory Scanning

Many users need more auditory feedback than a simple scan click described above. For these users, it helps to have the MessageMate play a short recording at each step. This short recording contains a "cue"—just a word or two you record—that reminds the user of the longer phrase that will be spoken if he or she selects that key.

MessageMate 40's with 120 or more seconds of recording time have auditory scanning with recording cues in place of the scan click described above. The auditory scan is turned ON or OFF with DIP switch number 3 on the left end of the MessageMate. When the switch is up, the auditory scanning is ON, and when it is down, the auditory scanning is OFF. When switch 2 is ON, the MessageMate speaks the first 3/4 of a second of the recording that you make for each key, then it scans ahead to the next key. This 3/4 second message serves to cue the user and to help him select the key he wants. Once the user selects a key, the full length of the recording is played.



First, review the sections in this manual on recording and playing messages with the keyboard and become comfortable with recording and playing regular messages. The auditory scanning messages are only slightly different. When you record the message for each key, assume that the first 3/4 second that you speak is used as the auditory cue, and the rest of the recording is the actual message.

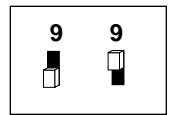
When you make the recording, choose a word or two that serves as a good verbal cue, reminding the user what the rest of the recording says. Hold down the record button and the key you want to rerecord, then speak the cue word(s) and the full message.

For instance, with a pause in your voice, record “question...I have a question for you.” When you start the auditory scanner, you hear it say “question” then step to the next key. Once the user selects this key, the full message “question... I have a question for you” is spoken. Although it is slightly inconvenient to have the cue repeated when the user selects the key, this compromise makes recording and checking your message very straightforward. With a little practice, you will be able to put the pause in the right place so that only the cue word is spoken during the scan.

Notice that the cues and full recordings both come out of the speaker. It is not possible to send the cues to an earphone and the message to the speaker.

Built-In Alarm

MessageMate has a built-in, attention-getting alarm. Holding any message key or switch input down long enough (5-20 seconds depending on the accept time you have selected) activates the alarm. If you want a full-volume, emergency-type alarm, set the alarm switch to ON by placing DIP switch 9 in the up position. If the alarm switch is OFF with DIP switch 9 in the down position, the MessageMate will make a clicking noise to remind you to release your switch.



Recording Messages

Recording new messages under each of the keys is a straightforward process. Messages (or any other sounds) are stored by recording through the built-in microphone.

The amount of recording time available under each key depends on the particular model of MessageMate 40 that you purchased, and the setting of the time mode switches 4-6 (see keyboard time adjustments, pg.4).

To record, perform these simple steps:

1. On the right end panel, move the RECORD/LOCK switch up to RECORD.
2. In case of a Multi-Level MessageMate, you may need to change levels (further procedure described on pgs. 14-15).
3. To record a message for any key, press and hold down the RECORD key. (The RECORD LED on the front of the unit should be lit as long as the RECORD/LOCK switch is in the RECORD position and the RECORD key is held.) Press and hold a message key while holding the record key. Place yourself approximately 6 inches (15 cm) away from the microphone and begin speaking loudly and clearly. (Try not to get too close or talk too loudly. You may want to experiment a little to achieve the best distance and volume.) As soon as you press the key to be recorded, the recording process begins. The LED next to the key remains lit during the recording process, until the allotted time for that key is used up, or until the key is released. For keys with short recording times (such as 1/2 second), you must be prepared to speak right after you press the key. Experiment a few times to develop a feel for the recording process.
4. When you are done recording, be sure to set the RECORD/LOCK switch back down to the LOCK position. Then test each of the keys. If any do not sound correct, rerecord those keys.

Resetting MessageMate

If you feel that you have accidentally reprogrammed or deprogrammed some or all of the settings on MessageMate, don't worry. Resetting the unit is as easy as 1-2-3.

1. Turn unit off.
2. Hold the record key for at least 5 seconds.
3. Turn unit back on.

The unit is now reset. Messages and DIP switch settings are not lost. Units having version 1.03 or later (see back panel for version number) make a unique reset sound; older units can be upgraded for a nominal fee.

4 Programming Suggestions

This section presents several examples to show how you can achieve the most efficient communication with only 40 messages. The MessageMate is not intended to be a powerful communication system. It is a basic communication system. Here are some ideas to help you make the most efficient use of your MessageMate.

Basic Message Approach

The Basic Message Approach involves determining the most important basic messages for the user. Some examples are:

- | | |
|-------------------|------------------------------------|
| 1. "YES" | 11. "I'M IN PAIN" |
| 2. "NO" | 12. "I FEEL FINE" |
| 3. "MAYBE" | 13. "HOW ARE YOU?" |
| 4. "I DON'T KNOW" | 14. "I'M TIRED" |
| 5. "THANK YOU" | 15. "I'M HOT OR COLD" |
| 6. "MORE" | 16. "I'M HUNGRY OR THIRSTY" |
| 7. "GOOD" | 17. "I HAVE AN ITCH" |
| 8. "NOT" | 18. "I WANT TO TELL YOU SOMETHING" |
| 9. "HELLO" | 19. "PLEASE COME AGAIN SOON" |
| 10. "GOODBYE" | 20. "I LOVE YOU" |

These 10 short messages can be recorded on the third row of 3 second keys on the MessageMate 40/120 when "40 keys long & short" is selected.

These 10 longer messages can be recorded on the bottom row of 6 second keys on the MessageMate 40/120 when "40 keys long & short" is selected.

By using the top two rows of keys for short items and the bottom two rows for longer items, the storage capacity of each is used most efficiently.

Building Block Approach

A second example is to use half of the keys as building-block words for messages, so that many more than 40 messages can be generated by selecting groups of keys. One set of 20 building blocks is shown below.

With these 20 building blocks, you can generate all of the following messages (and more):
Messages based on "DO"

I	YOU	WE	HE	SHE	THEY	CAN	DID	DO	GO
HAVE	HOW	IS	KNOW	LIKE	NOT	THAT	WANT	WHAT	WHY

“ I (you, we, they, he, she) can do that”
“ I (you, we, they, he, she) cannot do that”
“Can I (you, we, they, he, she) do that”
“How can I (you, we, they, he, she) do that”
“What can I (you, we, they, he, she) do”
“Why can I (you, we, they, he, she) not do that”
“I (you, we, they, he, she) like to do that”
“I (you, we, they, he, she) do not like to do that”
“I (you, we, they, he, she) want to do that”
“I (you, we, they, he, she) do not want to do that”
“Did I (you, we, they, he, she) do that”

Messages based on “GO”

“I (you, we, they, he, she) like to go”
“I (you, we, they, he, she) want to go”
“I (you, we, they, he, she) do not like to go”
“I (you, we, they, he, she) do not want to go”
“Can I (you, we, they, he, she) go”

Messages based on “HAVE”

“Can I (you, we, they, he, she) have that”
“Do I (you, we, they, he, she) have that”
“Why can I (you, we, they, he, she) not have that”

Messages based on “KNOW”

“I (you, we, they, he, she) know (that)”
“I (you, we, they, he, she) do not know (that)”
“I (you, we, they, he, she) did not know (that)”
“How can I (you, we, they, he, she) know (that)”

Messages based on “LIKE”

“I (you, we, they, he, she) like that”
“I (you, we, they, he, she) do not like that”
“How do you (we, they, he, she) like that”

Messages based on “WANT”

“I (you, we, they, he, she) want that”
“I (you, we, they, he, she) do not want that”
“Do I (you, we, they, he, she) want that”

As you can see, the number of possible messages from only 20 building blocks can be quite large. The choice of which 20 items are best for any individual varies. You may wish to use some or all of the items suggested above, changing a few keys to better match the user's needs and situations. The key to achieving maximum messaging capability with a small number of keys is to provide as many basic language elements as possible. One example is to use the word “NOT” to produce two meanings from each of several other single keys. For example, instead of the following 6 keys:

“GOOD” “BAD” “MORE” “LESS” “DO” “DON'T”

you can use the following 4 keys and achieve the same number of messages:

“GOOD” “MORE” “DO” “NOT”

“NOT GOOD,” “NOT MORE,” and “DO NOT” take the place of “BAD,” “LESS,” and “DON’T.” Also, using the word “DID” in a similar way, you can achieve past tenses of several other verbs (e.g., “DID SAY” for “SAID,” “DID GO” for “WENT,” “DID KNOW” for “KNEW,” etc.).

All 40 keys also may be used as building-block words in order to produce hundreds of possible combinations, or you can use half the keys for complete messages and the other half for the building-block approach. In any case, you should have enough components to produce anything you need to say.

5 Multi-Level MessageMate

The Multi-Level MessageMate 40 has the capability of both single level or four different levels of operation, providing up to ten minutes of total recording time and up to 144 messages that are ready for playback at the touch of a finger or through switch scanning.

Description and Specifications

Please refer to sections 1 and 2 for the physical description and specifications of the MessageMate as these also apply to the Multi-Level MessageMate 40 .

Operation

Please refer to Section 3 for the guidelines of operation and various features. These features still apply to the Multi-Level MessageMate 40; however, the Multi-Level MessageMate 40 requires more power, so the unit may last about two weeks as opposed to the average of one month for the single-level unit.

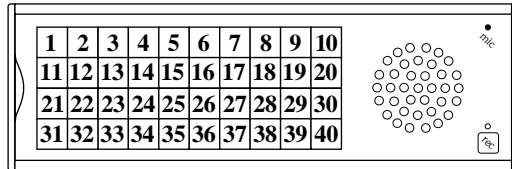
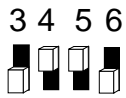
Keyboard Time Adjustments in Multi-Level Mode

The Multi-Level MessageMate 40 can be operated in both the single-level and multi-level modes.

Please refer to pg. 4 for keyboard time adjustments for the single-level mode of operation.

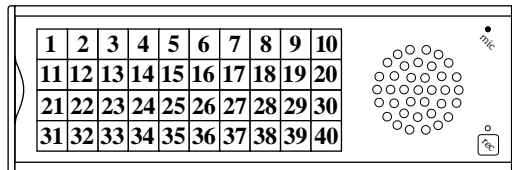
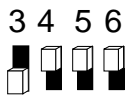
To operate in the multi-level mode, set the DIP switches to the following settings :

40 Long and Short Keys



Level Keys	Keys	40/300	40/600
1, 11, 21, 31	2-10	1	2
1.5 sec	12-20	1	2
	22-30	2	4
	32-40	4	8

40 Equal Keys



Level Keys	Keys	40/300	40/600
1, 11, 21, 31	2-10	2	4
1.5 sec	12-20	2	4
	22-30	2	4
	32-40	2	4

Level Keys

Figure 5-1 shows a sample overlay for Multi-Level Mode of Operation. Please note the large one, two, three and four keys. These are the level change keys. (The remaining thirty-six keys are the message keys.) The 1 represents Level One and 4 represents Level Four. When you press the Record Key (the Lock RECORD/LOCK Switch must be off), one of the LED lights on the Level keys will light up, showing the level that is currently selected. To change levels, simply press one of the other numbers. There is a small amount of recording time on the Level keys to have a speech message assigned. A suggestion may be: "Level 1". We ship the Multi-Level MessageMate with the words seen in figure 5-2.

1	a about again all	but by call can	eat feel find first	her him home hope	left let's light like	no not now of	really remember right said	this those thought to	way well were what
2	a lot an and any	can't car chair clean	fix foot for four	how I I'd if	long lunch maybe me	OK on only or	she so stand tape	today tomorrow tonight turn	when who why you
3	anything are at bag	could day didn't dinner	from get give go	I'm in is it	mean mom more much	other out over pants	tell thank you that that's	under up use used	
4	battery be because been	do doing don't down	good has have help	it's I've kind last	my never new nice	people please pleased pretty	the them then they	very walk want was	

Figure 5-1

Recording in Multi-Level Mode

Follow the instructions on pg. 9 for recording.

By pressing level one, the unit is now ready to record level one. When finished, press level two and so on.

Playing Messages in Multi-Level Mode

To play your messages, select the level where your message is located and select the message. Assuming your Multi-Level MessageMate 40 is using the overlay in figure 5-2, you could speak phrases such as "I want to eat now."

"2," "1," "3," "WANT," "4," "TO," "1," "EAT," "3," "NOW."

In using this type of overlay, you may not want to use a speech message on the level keys.

Another type of overlay may have 36 pictures/symbols and the 4 level keys (see figure 5-2). In this situation, you will want an overlay for each level. Note that each overlay may have a level key highlighted; this lets you know at which level the messages are stored. If a different level of messages is desired, simply pull out that overlay and insert the one needed under the keyskin. Then select the level where those messages are stored. If for some reason the current level is unknown, simply press the RECORD key and the current level key LED will light up. The RECORD/LOCK switch must be in the UNLOCK position.



Figure 5-2

Locking Levels

If there is a desire to lock the Multi-Level MessageMate 40 in a certain level, press key 2 (first row, second key) and key 40 (last row, last key) simultaneously and you should hear a short "bleep". This locks the Multi-Level MessageMate 40 into the current level. Simply press the same keys simultaneously again to unlock. The same warning sound notifies you that the unit is unlocked.

6 Message Builder

This feature gives the MessageMate user the ability to build messages from one or more presses of the MessageMate's recorded-message keys, and then to play back the complete message with a single key press. This feature is available in the MessageMate 40/150, Multi-Level MessageMate 40/300, Multi-Level MessageMate 40/600 and to be included in all future MessageMate 40 models.

6.1 Message Builder Operation

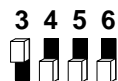
The MessageMate 40/150 can be operated in either the Single-Level operation or the Message Builder operation. The Multi-Level MessageMate can be operated in the single-level mode, the multi-level mode or Message Builder mode of operation. When the multi-level unit is in Message Builder mode, then it is also in the multi-level mode.

Note: *It is not possible to operate the Multi-Level MessageMate in single-level mode and Message Builder mode at the same time.*

6.2 Switch Settings for Message Builder Modes

To operate the unit in the Message Builder mode, set the DIP switches as shown below:

40 keys
(with echoing)



10 big keys
(with echoing)



40 keys
(without echoing)



10 big keys
(without echoing)



These DIP Switch settings are for both the Single Level and Multi-Level MessageMates.

The time allowed for each key is the same as on pgs. 4-5.

6.3 Message Builder Keys

Message Builder mode dedicates the right-most column of keys (four keys in 40-key modes and two keys in 10-key mode) to the Message Builder function at all times and on all levels.

In the 40 key modes, the four keys in the right column, from top to bottom are as follows:

Speak: Plays the collection of keystrokes (up to 30) as a single message.

Back: Removes the last keystroke from the message being built.

Clear: Removes all the keystrokes from the message being built.

Repeat: Repeats the last complete message that the Speak Key said.

In 10-key mode, the two big keys in the right column, from top to bottom are Speak and Clear and behave as stated above.

Each of the Message Builder keys can also have a speech message for auditory scanning purposes.

6.4 Echoing Modes

With Echoing - As the user selects keys to build a new message, the full recording for each key is played, (not the keys auditory prompt). The Message Builder keys do not echo; instead, a small key click sound is made.

Without Echoing - As the user select keys to build a new message, the keys are not echoed; instead, a small click sound is made.

6.5 Scanning

The Message Builder feature is consistent with all scanning and multilevel modes of the current MessageMate.

6.6 Clearing the Speak Key

The Speak key will not lose its message, even if the user waits a very long time between keystrokes to build his message. Turning the unit off and on again does not clear the message in the Speak key. Turning the unit off and on again while holding the record button to perform a reset does remove the message.

6.7 Instant Keys

In MessageMate 40-key modes, the message keys on the bottom row of the top level only (except for the level keys in the first column in Multi Level modes and the Message Builder keys in the last column) are Instant Keys. These keys play their messages immediately and have no effect on the message being built. In the 10 key mode, there are no instant keys, since this would leave only 4 keys for message building.

7 Troubleshooting Guide

This section provides a guide for troubleshooting your MessageMate in the event you experience problems. Because your MessageMate has been designed to be simple and rugged, you may never need this section; however, take a few minutes to familiarize yourself with the items listed below. If you ever do encounter difficulty, you may remember that a solution exists for you in this section.

Problem: No response to keyboard, no sound, no LED lights.

Cause: ON/OFF switch is in OFF position.

Solution: Turn ON/OFF switch until it clicks on, then turn halfway up for medium volume.

Cause: Battery dead.

Solution: Charge battery. Unit operates while battery is charging, without slowing down the charging process.

Problem: LED's light when keys are pressed, but no sound is produced.

Cause: Volume control is all the way down.

Solution: Turn volume control up.

Cause: Something other than a speaker is plugged into the external speaker jack, or a non-operating speaker is plugged into the external speaker jack.

Solution: Unplug the item from the external speaker jack and try again. If sound is then produced, check the item that was plugged into the external speaker jack.

Problem: After speaking, MessageMate makes a beeping sound.

Cause: Battery is nearly dead. The sound you hear is the low-battery warning.

Solution: Charge battery. You can use the unit while it is charging.

Problem: The sound stored under a key has been erased.

Cause: This can happen if the RECORD/LOCK switch is left in the unlocked position, and the RECORD key and MESSAGE key are pressed without recording new sounds.

Solution: Rerecord the sound and set the RECORD/LOCK switch back to the locked position.

Problem: No response to switch(es), but responds to keys.

Cause: Switch accept time higher than expected.

Solution: Adjust accept time as required.

Cause: Switch failure.

Solution: Replace switch.

Problem: No response to keys, but responds to switches.

Cause: Key accept time higher than expected.

Solution: Adjust accept time as required.

Cause: Keyboard failure.

Solution: Replace keyboard (factory repair).

Problem: Record light does not come on when RECORD/LOCK switch is placed in the UNLOCK position and record key is pressed.

Cause: LED failure.

Solution: To replace LED, call Words+

Problem: Sound quality is less than desired.

Cause: Recording too far away or too close to microphone.
Recording too loudly or too quietly.
Air flow from speaking is blowing directly into microphone.
Volume control set too high, causing distortion.

Solution: Use better recording technique. See pg. 9.

Cause: Microphone malfunctioning.

Solution: Replace microphone (factory repair).

Problem: Sound volume is not loud enough.

Cause: Recording too far away or too quietly.
Volume control set too low.
Battery is weak.
External speaker required.

Solution: Use better recording technique. See pg. 9.
Charge battery.
Use external speaker.

Problem: Scan speed is too fast or too slow.

Solution: Speed setting needs to be changed. See *Selecting the Stepping Rate*, pg. 8.

Problem: User cannot see LED's for scanning.

Cause: Undesirable viewing angle.
Ambient light.
Unit at inappropriate distance from user.

Solution: Reposition unit so that it more directly faces the user.
Reposition unit so that strong direct light is not on the LED's.
Provide shading to prevent strong light from hitting face of unit.
Move unit closer to user.

Problem: Battery does not hold charge.

Cause: Low capacity due to continuous charging.

Solution: Charge battery until fully charged (overnight). Use MessageMate until battery almost discharged. Continue cycle several times.

Cause: Battery failure.

Solution: Replace battery (factory repair).

Problem: Can't change to a different level.

Cause: The level is locked.

Solution: Unlock the level by pressing key number 2 and 40 at the same time. The unit should beep when the level is unlocked.

Problem: The level is still unlocked. How can I lock the level?

Cause: Proper keys haven't been pressed correctly.

Solution: Try pressing the number 2 and 40 keys at once. You should hear a distinct beep if level is locked. Try pressing the same keys to unlock the level.

Problem: Only Single-Key messages are being spoken, and no messages are being built.

Cause: DIP switches are not set correctly.

Solution: Select an appropriate Message Builder mode. Then set the DIP switches as shown on the back panel to select the Message Builder mode. Leave the DIP switches on these settings.

Appendix 1: Instruction to the user

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications; however, there is no guarantee that interference will not occur in a particular installation.

If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

In order to maintain compliance with FCC regulations, shielded cables must be used with this equipment. Operation with non-approved equipment or unshielded cables is likely to result in interference to radio and TV reception. The user is cautioned that changes and modifications made to the equipment without approval of the manufacturer could void the user's authority to operate this equipment.

Appendix 3: Warranty & Repair Service

Warranty

All Words+ manufactured products and all batteries are warranted to be free from manufacturing defects for a full year from the date of purchase. This warranty includes all parts and labor required to restore defective products to serviceable condition. The Freedom 2000 computer-based communication systems come with a three-year warranty on parts and labor. Items that have been damaged by accident, abuse, or misuse are not covered under the warranty. For terms and conditions of warranties covering specific products, please call.

Words+ recognizes that when a person's communication system is not working, that person's quality of life is greatly reduced. For this reason, we have always assigned repairs top priority. In the unlikely event that your system needs to be sent in for service, we will make every effort to see that it is repaired and returned to you as soon as possible. This policy applies whether or not your equipment is under warranty. All out-of-warranty repairs must be paid for in advance or by C.O.D. return delivery. Please see the Words+ Repair Service below for more information.

Repair Service

In the unlikely event that your system needs to be sent in for service, we will make every reasonable effort to see that it is repaired and returned to you as quickly as possible. This policy applies regardless of whether your equipment is under warranty. All out-of-warranty repairs must be paid for in advance or by C.O.D. return. If you think an item should be sent in for repair, call us first. Many times the problem can be corrected over the phone, saving you time and expense. If your unit must be returned, please be sure to do the following:

1. Call (800) 869-8521 for a Return Merchandise Authorization (RMA) number. Items returned without RMA numbers will not be accepted.
2. Write the RMA number on the outside of the package.
3. Use at least 2-3" of packing material around the item, and pack it in a strong box using sealing tape. Do not use paper or string on the outside of the box. Insufficient packing material may cause extreme damage to your equipment.
4. Enclose a note with RMA number describing the problem. Include a daytime phone number and the street address where the item is to be returned.
5. Ship by UPS. The item will be returned by the same means of delivery used to send it to us (excluding Next Day Air). If you wish to have the item returned using faster delivery, you must pay the difference. If the item is under warranty, it will be returned free of charge. If not, it will be returned C.O.D., unless prepayment has been made.
7. Insure each individual item for full replacement value.