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The Canonical List of Newton MessagePad Questions and Answers

This document is a collection of Questions and Answers about the Apple Newton family of products, consisting currently of the original MessagePad, MessagePad 100, and MessagePad 110.

This is an interim release. I just received my 110 today, so I have not been able to review it thoroughly or add a lot of new information about the new model. I have marked a number of the answers in the Question and Answers section as **(original MessagePad only)**. I will be adding information on the 110 just as soon as I can.

The companion document to this one, the Newton Bug, Gripe, and Wish list, will be available shortly (I'm in the process of adding a lot of new material, and I will be verifying bug reports with the new Newton model).

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Version

Version 1.3, Revised March 9, 1994.

Update Information

Please feel free to send me suggestions, comments, and additions so that I can make this list as informative and useful as possible. I can't keep track of everything Newton, so the success of this list depends almost entirely on you. Before sending me something to add, please scan through the list and see if there is already an item that covers what you're suggesting. That will save me time.

Where has the FAQ been?

If you've been wondering where the FAQ lists have been and why I haven't updated them since last winter, I apologize. For a while I was waiting for the release of 1.05; then, just after Christmas, I had a job interview, and one month later I was working for Pharos Technologies in Cincinnati. When I moved, I left behind most of my books, and no longer had access to a Macintosh, full Internet connectivity, or any free time. I still don't have much free time, but I have a new PowerBook Duo 250, and so the FAQ is going to become current once again. I'm looking into local SLIP providers to get full Internet connectivity again as well.

What are all those dot commands?

My apologies if you're reading this in Word or text-only format. I'm currently experimenting with turning this document into a Newton book. This will be cleaned up in a future release.

Latest News: New Newtons

The big news is the announcement of two new MessagePads, the MessagePad 100 and 110. At the time of this writing, the 110 is just beginning to find its way to retailers. Here's a quick summary:

New ROM

Both new Newtons have a new ROM, version 1.3, giving them important new capabilities. Most of the changes revolve around handwriting recognition. The new recognizer is greatly improved, and now has the following new features:

- The recognizer seems to be greatly improved. I can't give any kind of empirical data on this, especially after working with it for such a short time, but even without any training, it is working better on my writing than my 1.05 Newton does with a lot of training.
- Deferred recognition of digital ink (it even works on old ink notes that were written on my original MessagePad back in August, a technical feat which really startled me!)
- A new recognition toggle at the bottom of the screen. If you are about to write a word that you know the Newton might have difficulty with, you can tap this button to bring up a little floating palette that lets you tell the Newton to use character recognition or number recognition. That way, the recognizer is likely to come up with a closer match than it would if it just picked the closest matching word in the dictionary; if it doesn't get it perfect, it is usually at least close enough that you can figure out what the word was meant to be and edit it.
- When you double-tap a misrecognized word, the popup list of second choices that comes up has a button on it that lets you have the Newton try again using character recognition. Very useful.
- The recognizer preferences are simplified, and you can now tell the Newton to use character recognition just in Names, or everywhere.

Both new Newtons will come additional RAM, which provides a larger internal store for user data like notes and addresses, and a larger NewtonScript heap and system heap to improve recognition and help to prevent "out of memory" messages.

Before you ask: yes, existing MessagePad owners will be able to upgrade their Newtons. The price will be around \$100. I am not certain of the exact details of the upgrade.

Lindy (the MessagePad 110)

The MessagePad 110 is longer, narrower, and heavier. This is the model that was code-named "Lindy." Chief innovations: the screen is 16 pixels shorter; it uses AA batteries instead of AAA (giving it a longer battery life). Lindy has a flip-over cover that latches in either the open or closed position, and a new retractable pen with a round cross-section, that feels more like a normal pen. The silk-screened buttons are larger, making it easier to hit the scroll buttons and not accidentally tap the overview button. The contrast is controlled by a thumb wheel, instead of through software. The PCMCIA card slot is mounted on the side, and the speaker is actually mounted on the end. Lindy has a couple of external contacts which allow it to be dropped into a base that can act as a charger. This could be a convenient way to use the Newton at work and remotely, but I haven't actually seen the base unit yet. The NiCd battery pack design will have to be different, but I haven't seen one of those yet either.

Regarding the original MessagePad: there are currently units floating around with two ROM versions. ROM 1.0 is the original Newton ROM, and the most recent patch to this ROM brings the software to version 1.05. ROM 1.1 is the second ROM release, and this ROM shipped with one patch, which has not been updated, bringing it to software version 1.11.

To the best of my knowledge, a Newton running software version 1.05 should be nearly identical in all functions to one running 1.11, at least for the end user. (I would be happy to have any further detail here, but my contacts at Apple have been very lukewarm about the idea of releasing a list of changes with each ROM and patch level).

To see which version of the Newton software your MessagePad is running, open the Extras drawer and tap Preferences - the current software version is displayed at the bottom of the Preferences overview. The patch to version 1.05, for release 1.0 MessagePads, is currently available on most of the online services. If you own the Newton Connection software for Windows or the Macintosh, you can use it to install the patch. Installing the patch for 1.05 requires quite a bit of free memory in order to be successful (at least 32K; you should be sure you have more than that available before attempting installation).

If you have a fax modem for your Newton, you can call 1-800-NEWTON-9 inside the United States, or 707-226-8839 from overseas. Under Extras, open the In Box, select "Receive," then choose "Enhancement" from the popup, write in

the phone number, hit "Call," and the update will be installed. Installation should take about one minute. (Information from Apple and Mark Mitchell, mmitch@netcom.com).

The Newton will ask you to reboot; after rebooting, reboot again for good measure and you should be all set. If this doesn't work, reset your Newton and try again, or call 1-800-SOS-APPL for help. If you don't have the Newton Connection Kit or a modem, call 1-800-242-3374 to get a PCMCIA card with the software update, with a postage-paid envelope to return the card in. You will have to give a credit card number so that, if you don't return the card to Apple, you can be billed for it.

Connection Kit News: Apple has dropped the Connection Kit Pro and will add the features planned for the Pro kit to the standard version, beginning in version 2.0 (forthcoming).

I got most of this information from an Apple announcement, so if you have a question, don't call me, call 1-800-SOS-APPL; if you find out something that contradicts information I've provided here, drop me a line.

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Part 0: Suggestions and Warnings

Memory Cards

WARNING: If you're using a flash memory card (like Apple's 2 megabyte card, or a third party flash card), and you want to perform a long operation, such as backing up the Newton, you may want to plug in the AC power adapter. Writes to flash memory use an unusually large amount of power and a lot of them can wipe out an entire battery.

WARNING: Be careful with 3rd-party PCMCIA memory cards. Some of them are very unreliable with the Newton. You can't just go out and purchase any card labeled Type II and expect it to function correctly with the Newton; especially third-party cards for older machines like the HP 95LX. If you're interested in getting a non-Apple card to use with your Newton, you might want to call 1-800-SOS-APPL to see if the card has been tested with the Newton.

WARNING: An errata sheet with my Newton said that Apple doesn't recommend using PCMCIA memory cards greater than 4 megabytes in size. So, SunDisk or high-capacity Intel cards may not work; even if they work, the MessagePad hasn't necessarily been tested with these cards, and you may suffer severe performance problems.

Batteries (original MessagePad only)

All these tips only apply to the original MessagePad. The MessagePad 100 motherboard will use the same kind of batteries, but is not yet available, so I haven't heard any news about whether it has the power problems found in the original messagePad; the MessagePad110 uses different power circuitry, and so it remains to be seen if it shares any of the same problems.

The Newton MessagePad presents a unique challenge for batteries. Part of the way into the design of the hardware, Apple's engineers realized that they would not be able to achieve the original objective of making the MessagePad a 3-volt device, and they were not able to revise the original design from using AAA batteries to AA while retaining the MessagePad's small size. The MessagePad is thus the result of a series of careful compromises between cost and performance.

The ARM 610 CPU, if it ran continuously at full speed, would drain the battery pack completely in perhaps twenty minutes. Instead, the MessagePad stops the processor at every opportunity, and the entire system is designed to allow power savings whenever possible. The CPU even goes to sleep every time it has to wait for the pen's position on the screen to be converted from an analog to digital signal, eighty times a second, and when you are done writing a word, the processor comes on "full blast" to figure out what you wrote. The result is that the power consumption of the system is extremely dynamic, changing almost instantly from virtually no load to a full drain.

The upshot of all this is that the MessagePad's power system can be a little dicey. You may find that you don't get the battery life you hoped to; you may find that occasionally when you turn on your Newton, it reboots and tells you that it had to reset because of a power fault; you may sometimes not be able to get the Newton to turn on (the power manager occasionally becomes confused: to straighten it out, plug in the Newton and reboot). You may see the battery gauge behave erratically, due to the unusual load the Newton puts on the batteries. You may find that your 1.11 Newton is unreliable using alkaline batteries and works better using the rechargeable battery pack. My advice is to keep a spare charged rechargeable battery pack with you, and when you're at your desk or at home, plug the Newton in.

The good news is that the Newton has two batteries. The backup battery protects the content of memory in case the main battery goes dead, and a memory management unit works together with some very sophisticated software techniques to ensure that your data can't be corrupted or lost accidentally. Barring a hardware failure of some sort or removal of both batteries (made difficult by a hardware interlock), it's very unlikely that you'll ever accidentally lose data in your Newton (despite this, I still recommend keeping a backup on a memory card or to a Connection Kit for Windows or the Macintosh).

Funniest anti-Newton battery joke: a man goes into an electronics store and asks the clerk "can you give me four batteries for a Newton?" The clerk scratches his chin for a moment and then says "that seems fair..." (I need to find a credit for this joke)

Battery Warnings (original MessagePad only)

WARNING: When you get a rechargeable battery pack for your Newton, recharge them **fully** before using them for the first time. If you fully discharge a nickel-cadmium battery before fully charging it, it may not be able to hold a full charge.

WARNING: Don't remove both batteries. If you do this, you run the risk of losing all the data in your Newton, including the system patches. You may be able to get away with this for a few moments because the Newton uses static RAM, but it isn't safe to count on this. If you lose the contents of your Newton, you'll have to find a way to reinstall the system patches (start by calling 1-800-SOS-APPL).

WARNING: Don't use loose NiCd AAA batteries in the alkaline battery holder (tip from Robert Sadowski). If you do, the Newton will not trickle-charge them; you also might experience inaccurate battery gauge readings, power faults, or other problems.

WARNING: Remember that rechargeable batteries lose their charge quickly while in storage, and this happens much more gradually with alkaline cells. You might want to carry around a set of fresh alkaline batteries in case you get stuck in a situation where you can't keep your rechargeables freshly charged. (Suggested by Kent Borg, kentborg@world.std.com).

WARNING: Don't use RENEWAL batteries in the alkaline battery pack if you have modified it to make the Newton think it is a rechargeable battery pack. Recharging alkaline batteries takes a special charger, and they are very prone to leak or blow up if recharged otherwise.

WARNING: There are a couple of battery options you might be interested in trying, but according to users who have tried them, they aren't as effective as you might hope. I have heard that Millennium rechargeable batteries (and others) can't be used in the Newton, since the power level is too low (the Newton NiCd pack puts out more power than most commercially available NiCd batteries).

Danny Burstein (dannyb@panix.com) also reports that NiCd batteries don't have the exact shape of alkaline cells, and may not make good contact with the alkaline battery pack (the tip of the AAA cells may be too fat).

If you're going to try to use non-Apple NiCd batteries in the Newton, make sure they are 220 or better milliamp batteries (hard to find). Real Goods Inc. sells 240 ma batteries (1-800-762-7325). If you use 3rd-party NiCd batteries in your Newton, I don't recommend modifying the alkaline battery pack so that the Newton trickle-charges the batteries.

If you do this, you won't be able to safely use alkaline batteries in that pack, including the new rechargeable Renewal alkaline batteries, because when you then plug the Newton in, it will try to trickle-charge them, which is likely to cause them to leak or blow up (a NiCd batter charger can't be used to charge alkaline batteries). I've seen what leaking alkaline cells can do to a calculator, and it isn't pretty; the Newton costs a lot more than a calculator, so please, be careful with it!

Regarding Rayovac Renewal batteries: many users (myself included) have given up on using Renewals because they are not reliable with the MessagePad. The reason may be that Renewals have a higher internal resistance than the NiCd pack, and therefore can't meet the Newton's peak power demands when partially discharged.

There is a lot about battery technology that I don't understand, and a number of factors besides voltage that affect battery performance (temperature, internal resistance, and others). If you've got better information you'd like to share on the topic, please drop me a line.

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Part 1: Questions and Answers

What kind of cable do I need to connect the Newton to my PC?

To connect to a Mac, you will need an 8-pin serial cable. This is the same kind of cable sold for the ImageWriter or StyleWriter printers. You can also use a LocalTalk connector, although I'm not sure if the Connection Kit is as reliable using LocalTalk (the Development Kit isn't). For an IBM-compatible, you'll need something like the cables that come with MacLink PC; there are several different serial connectors for PCs. I presume the Windows connection kit will come with the appropriate cable options.

When I turn on my Newt, the screen looks bad, then improves. Why?

According to Andy Stadler at Apple (stadler@apple.com), when it is turned on, the Newton sets the screen contrast to a standard default value. The Newton then immediately goes to sleep. When you actually do something such as tap the screen, it wakes up and the screen driver code comes to life, adjusting the contrast. So, this is really caused by the fact that the Newton stays asleep whenever it can to save battery power.

I'm getting "Out of Memory" messages, but I have plenty left! Why?

Memory on the Newton is broken up into the object store, where things like enhancements, date book entries and notes are stored, and several heaps, one of which is analogous to the system heap on a desktop PC (information from John Brewer, jbrewer@wri.com). Running out of space in one of these heaps will yield an error message. This is an error message that popped up commonly in earlier versions of the system software when the Newton did a lot of handwriting recognition, but it can also result from installing a lot of programs in the Newton (especially public-domain or shareware programs that use memory poorly). Resetting the Newton will usually solve out-of-memory problems; if they persist, you may want to try removing some programs or contacting Apple or your third-party program's vendor.

The Newton turns on when I eject a card! Why?

This is normal. This was incorrectly reported by some users as a bug that occurred only in 1.00 machines, but it happens under all versions of the system software and is necessary. When a card becomes unavailable, the Newton needs to wake up in order to determine if it can get along without the card without running the risk of losing any unsaved data. If it can't, the Newton will tell you that it still needs the card. After you re-insert it, your open programs will close, and you should be able to eject the card.

How do I reset the Newton?

To do a reset, leave the Newton on, give it a chance to stop doing whatever processing it is currently doing, then take off the battery cover and press the reset button with the pen. Give it a moment to come back on. No data will be lost by this process. Check to make sure the clock is correct after resetting.

How do I erase all the memory?

Hold down the power switch, hit the reset button, and continue to hold down the power switch until you get a dialog box that asks you if you want to erase all memory. (You may have to try this a few times before it works; it can be a little tricky). Answer "yes" twice to erase all your Newton's memory. **MAKE SURE THAT THIS IS REALLY WHAT YOU WANT TO DO, SINCE ALL THE DATA STORED IN YOUR NEWTON WILL BE GONE, INCLUDING YOUR NAME, DICTIONARIES, HANDWRITING TRAINING, ETC.** Note: this procedure does not remove your system patches.

If I take out a flash memory card from my Newton, will it be erased?

No. Flash memory doesn't need power to keep it around. Static RAM, like Apple's 1 megabyte card, does require electrical power. When the card is in your Newton, it gets power from the Newton; when removed, the card is powered by a battery. This battery needs to be changed periodically: check with the instructions that came with your card. Some cards have two batteries; some have one, and should be in the MessagePad while you change the battery in order to prevent data loss. Most cards will retain their contents for a minute or two without the battery, but as always I recommend keeping a backup in case something goes wrong.

Have I used up the lithium cell? I left the switch on "replace main." (original MessagePad)

No. The switch just locks and unlocks the battery compartments. It doesn't switch the power from one to the other.

The Newton won't start up without a main battery. There was a rumor that if you left the switch set to "replace main," the Newton will power its internal memory entirely off the lithium battery. I'm not certain if this is true or not. In any case, after changing the batteries, you should set the MessagePad's battery switch to "in use" to lock in both batteries. If either the main or the backup battery is going dead, the Newton should warn you.

Can I make the Newton forget my handwriting and start learning from scratch?

Yes. Don't do this lightly - remember, it takes many hours to completely train a Newton. In the preferences, there are several "return to original settings" buttons. One just affects the speed of recognition, word spacing, and other options that are easily restored. The other will actually wipe out everything the Newton has learned about your writing, and start the learning process from scratch. This one has a dialog box that warns you to make sure that this is what you want to do. You might want to use this feature if you decided to switch from cursive to printing, or to give your Newton to someone else on a permanent basis.

If I let someone else write on my Newton, will it learn their writing?

The Newton doesn't automatically know who is using it, so the answer is yes. However, there is a check box in Preferences you can set entitled "configure for guest user." When the Newton is in Guest mode, it won't make changes to what it has learned about your writing based on whoever is currently using it. Your "guest" can add words to your dictionary, and can change the guest's settings for letter styles and recognition options.

Is it really necessary to fine-tune my letter styles in the Preferences?

According to Andy Stadler at Apple (stadler@apple.com), this shouldn't be necessary unless you are having "constant, repeatable problems." Stadler gives the following example: if the Newton consistently misrecognizes your lower-case cursive N as an R, you might want to try turning off that shape for the lowercase R. The reasoning behind this advice goes like this: "What we've found is that often, people don't really realize what their writing looks like, and [they] tend to overcompensate settings when they adjust this panel." This sounds reasonable to me; when I checked my letter styles against the Newton's strokes, I found that I had to write words on paper to see exactly how I made letters. Like tying your shoes, when you have to think about exactly how you do it, it becomes much harder.

If I back up the Newton, does everything get saved?

Yes. Your notes, dates, business cards, handwriting training, preferences, dictionaries, and system patches all get saved. (This means that, for example, when you restore a Newton, it also will restore the system patches, if the software revision you are restoring is more recent than the one currently installed).

What is the maximum size of a note on the Newton?

I am not sure. The maximum amount of text that I was paste into a note seemed to be about 5830 bytes, where drawings seem to max out at about 2000 bytes. Compression may affect this figure. Clearly the MessagePad isn't ready for word processing yet.

Can I use my (Brand X) modem with my Newton?

The MessagePad is designed to work with a particular Rockwell chip set (224ATF). Some 3rd-party modems use this chips set; I have a Supra v32.bis fax-modem that I have successfully used to send faxes and connect to NewtonMail, but in order to make it work, I had to put the string";F1DT" (yes, that's a semi-colon first) in front of the phone number in my mail setup.

Can I use my (Brand X) PCMCIA Modem card with the Newton?

Megahertz 14.4 fax modem PCMCIA card appears to work in the Newton, but it uses much more power than Apple's version and will eat batteries for lunch.

What about other accessories?

Before you go out and buy a non-Apple product to use with the Newton, I recommend contacting Apple to see if they have tested it with the Newton. This applies especially to memory cards. I had a bad experience using a card designed for an older HP palmtop computer; it worked most of the time, but a memory card that works most of the time is much worse than one that doesn't work at all.

Why can't I see some printers in the zones of my AppleTalk network?

If you have a large network, it may take a few seconds for the Newton to locate the relevant devices. Give the Newton some time to scope out the network, then use the "Change Zone" button to pick a zone and look at devices there. (Suggested by Trygve Isaacson, trygve@apple.com).

How can I get my Newton to dial my phone?

Here are some suggestions from Markus, 26ssvo\$05j@news.bu.edu: make certain that your country field is set properly. Make certain that your phone numbers entries in your phone book don't have ones or other special codes before the area code, since Newton tries to handle this by itself. Better quality phones tend to work better when dialing via Newton's speaker. Try holding the Newton at varying distances from the phone's mouthpiece. In some cases, holding the Newton speaker further away will make it work, because the handset microphone is in fact *too* sensitive, resulting in distortion (from Mike Yang, mikey@sgi.com). Some phones just won't work with the Newton's speaker to do tone dialing (Panasonic phones don't seem to work, for example). This isn't really the Newton's fault; pocket tone dialers are notoriously unreliable.

How can I get my Newton to phone home?

The Electronic Assistant uses the word "home" to modify names; it looks for their "home" phone number. So, if you type "phone home," the Newton won't know who to call. You can try "Phone Paul at home" and if the Newton knows who Paul is, it will pick out my home number. If you want the Newton to call your own phone, make sure you have a Names entry with your phone number in it, and tell the assistant to call <your name>.

In the datebook, how can I block out an event that lasts more than one day?

There is no simple way to do this, but here's a workaround: put in the first day of the event, open it, click "Frequency," highlight all the days in the week you want to block off, then put the last day of the event in the "no meetings after" field. (suggested by Josh Hodas, hodas@saul.cis.upenn.edu).

How can I move datebook items to or from a storage card?

Say you have them on the internal store, and you want them on a card. Put the card in, check "store new items on card," then open the datebook. Drag the item you want to move to the clipboard (sides or top of screen), then drag it back. It will now be on the card. To move items off a card, do the same thing with "store new items on card" turned off. Suggested by David Gillen, ds_gillen@pn1.gov). An easier way is doing a Find on the entries you move, and then using the routing button on the list of found items to move them to or from a card. You can use the popup "Look for" options to choose to find all dates before or after a given date; this can be very useful for archiving old dates to a card. [Does not work well for repeating meetings, though].

Why can't I get the "delete one character" gesture to work?

This gesture works best if you imagine that you are making the usual scrub gesture with four or more lines, but make it all in one vertical line right over the letter you are trying to delete, quickly, without lifting the pen. Correctly done, it will look like you've scrubbed a vertical blob of ink right over the letter you want to delete, and the letter will disappear. If you're having troubles with getting some of the Newton's editing gestures recognized, don't feel bad: you're not alone. It takes a lot of practice, and some of them are just not reliably recognized.

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Part 2: Newton Impressions

This section combines opinions, comments, and speculation.

I tried a Newton for ten minutes at a store. It was awful!

These items apply to the original MessagePad; according to a few early reports, the initial experience with the MessagePad 110 is much more positive because the recognition quality is greatly improved.

David Sternlight (strnlght@netcom.com) said it better than I could:

"Apple's problem is that that's the way the Newton works. It needs 2-3 weeks to train itself properly (and, to some extent to subtly train you) so that its performance is tailored to the way you write and operate, and you learn its little

quirks... In-store demos, particularly of recognizing a potential buyer's handwriting, are doomed to be disappointing or worse (if the machine is set up so that the last twelve Charlies have thoroughly confused the Newton's to what writing style it's expected to recognize... Thus, Apple needs to find a way to sell the Newton almost 'on faith.' That's not an easy trick, but if anyone can pull it off Apple can. Remember that they started John Q. Public hadn't the least idea if [the Graphical User Interface] was just a gadget or something that would make a profound difference to the usability of his Lisa or Mac."

A user who gave the Newton a chance (Eric Celeste, efc@wonder.mit.com) writes: "I've been using a MessagePad for a few weeks now and it is great. I've had very little trouble... I have lost no data, ever, even on the rare occasions when I've had to reset the pad (I still can't say that about other computers I use). I have found my ability to think about my time greatly enhanced by the calendar (especially the ability to glance quickly at weeks or months). I have been calling my friends more because their names and numbers are so easily accessible... And, finally, it is doing a great job with my handwriting. I can almost take notes in meetings! In short, I love it."

Isn't the Newton excessively buggy? (original MessagePad only)

I feel the Newton as first released was excessively buggy. I was surprised, for example, that it was released with system 1.02, which had such an obvious problem with handwriting recognition that a day's worth of use almost guaranteed that you would need to reset several times. In system versions 1.05 and 1.11, Apple has addressed most of the major bugs. I have still seen handwriting recognition freeze-up, but this condition and the out-of-memory error have become quite rare. There are many reasons that the first release of the Newton was buggy: political, financial, and technical. Long-time computer users have become accustomed to finding occasional problems in first-generation technology, whether it clearly identifies itself as a computer or not. I'm pleased that Apple is releasing revised hardware and software so rapidly and will provide an upgrade path for those that bought the original MessagePad.

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Part 3: Handwriting Recognition

Can I use the Newton to take notes in my meeting/class/lecture? (original MessagePad only)

Trying to use the Newton to keep up with a live speaker may prove quite frustrating, especially if you are trying to capture every idea. You will find several factors to be limiting: the speed of the handwriting recognizer, the maximum size of a note, and the limited dictionary. However, it works great to jot down short reminders and notes. The name of the first product is the MessagePad - that's really the size of document it was designed to work with: messages. If you want to just get things down as fast as you can, you can turn off both recognizers and just leave digital ink in your note, but that fills up notes pretty fast. (With the MessagePad 100 and 110, you'll be able to go back and recognize digital ink later). (From a suggestion by Robert Sadowski).

How come the original MessagePad can't do deferred recognition?

I'm a bit confused about this issue now, so if anyone has better information they would like to pass on, please do.

In the previous version of this list, I wrote about how the Newton only stored timing after it was written, in order to save space, and that the recognizer needed stroke timing information in order to function properly.

However, I just got my Lindy (MessagePad 110) today, which features deferred recognition. Ink notes written on the Lindy don't seem to take up any more space than they do on the original MessagePad, so it doesn't look like there is any more data being recorded. I even browsed through some notes that I wrote last September, on my original MessagePad, in ink, and the Lindy recognized them quite nicely, to my great surprise. So, clearly something is missing in my understanding of how ink and recognition work together. Maybe the Lindy recognizer is simply so much better that it doesn't need the timing information that the original recognizer needed.

There may be a quality of recognition issue to consider also: when people write ink, knowing that they don't have to write slowly enough for the recognizer to keep up with them or neatly enough for it to get good recognition, they don't; they write faster and messier. This makes recognition of the saved ink much more difficult, and would require a higher quality recognizer in order to make it usable.

How good is the handwriting recognition? (notes on the original MessagePad only)

Everything I have read in the trade press leads me to believe that the Newton's recognition is better than that of other products that do handwriting recognition. It works reasonably well with cursive and print out of the box, and seems to get better with training. Jonathan Bauer (jhbauer@panix.com) reported "dramatic improvement after two or three

days of use."

Kent Borg (kentborg@world.std.com) pointed out that the handwriting recognition on the Newton works best if you are willing to compromise a little. It will learn, based on a series of preset templates, the way you make letters, and will let you add words you commonly write to the dictionary to improve their recognition, but you also have to write fairly clearly. You can't teach it an arbitrary style of writing from scratch. If it misinterprets something I write, I first double-tap on the word to see if it lists a correct alternate interpretation. If that doesn't work, I try going back and writing it more carefully. As a last resort, I pop up the on-screen keyboard and tap out the word. I am constantly startled, though, by how often the Newton gets it right.

Best recognition is achieved by using dictionary lookup ("words in word lists"). The Newton is better able to distinguish long words (the longer the word, the sparser the search tree of possible matches becomes, giving the Newton a better chance at achieving a correct match. The original MessagePad occasionally chokes on very long words, though: even if I write the word "antidiscriminatory" to the dictionary, the Newton won't recognize it; it leaves it as ink. (the original MessagePad appears to fail to recognize words longer than 18-20 strokes).

Keep in mind that Newton does best with limited notes and common words. It can be very frustrating at times. You will get a lot of practice using the little keyboard. You will also find that you need to mess around with the different recognizer options in order to get the best results. You may want to change settings when writing different kinds of text; for example, if you are writing sentences, you may want to turn off number recognition so that Newton doesn't misrecognize words as numbers.

Also remember that a good deal depends on the text you are writing. When I tried writing out a part of Keats' "Ode to a Nightingale" on an untrained Newton, I got a lot of recognizer errors, especially on words that it did not know, like "faerie," "wast," and "thou." It helps to teach the Newton words that you will commonly use in your writing. After adding the words in the first verse of Lewis Carroll's "Jabberwocky," I just wrote the first verse and the Newton recognized it perfectly. ('Twas brillig, and the slithy toves / did gyre and gimble in the wabe / all mimsy were the borogoves / and the mome raths outgrabe).

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Part 6: Details

How long is the battery life? (original MessagePad only)

This varies greatly from user to user, and depends on how you use your Newton. (See the section on batteries above). I'll give my impressions. Alkaline cells do best, and have lasted me about three days of on-and-off use. However, alkaline cells, while they seem to be very reliable in my 1.05 MessagePad, may be unreliable in 1.11 systems. I have been using rechargeables, plugging the device in when possible, and I seem to get a good day of on-and-off use out of a recharge. Batteries charge much slower in the Newton than they do in the separate charger. The charger has a little light that comes on when you plug it in and seems to go off about five hours later. This is a nice feature intended to prevent you from "cooking" your batteries too long in the charger, which can shorten their life.

There are a number of things you can do to lengthen battery life: plug in the Newton when you can; when using rechargeables, they will be trickle-charged. Turn the sound volume down. Don't leave the "automatically receive beams" option on. Set the Newton to go to sleep after a few minutes of inactivity. Battery life varies greatly depending on how you use your Newton.

What are the best batteries to use in the Newton? (original MessagePad only)

Many Newton users feel that it is wasteful, not to mention expensive and detrimental to the environment, to use regular alkaline batteries in the Newton, even though they seem to give the best battery life, but it can be very annoying to have to swap NiCd packs every day. So, it may seem like there must be a better alternative to their short life, but in the original MessagePad I recommend using Apple's rechargeable packs over experimenting with alternatives.

How can you get by with only 150K of user memory?

This applies to the original MessagePad only, since the new MessagePad has much more storage space available (around 480K).

Newton uses memory remarkably efficiently. The entire operating system, from the lowest level to the application interface, is designed to minimize memory usage (sometimes the MessagePad's speed is compromised by the need

to save memory). Data in user memory is transparently compressed and decompressed by the Newton operating system, giving compression of up to 6:1 on text (Newton text is stored in Unicode, which means that characters are 16 bits wide instead of eight, so this will amount to a savings of about 3:1 over the space that the ASCII text would use, which is typical for desktop computer's text compression ratios).

There is a lot of confusion regarding the amount of available memory and the role of the various patches in reducing this. I'll try to give a few details, although this is not well-documented, so I don't claim 100% accuracy. The MessagePad has 640K of static RAM, of which (prior to 1.05 or 1.11) 448K is used for the system heap, handwriting recognition, and other information. Newton memory apparently consists of a bank of 512K and an additional 128K chip. One reason why more RAM wasn't included is because SRAM is considerably more expensive than DRAM, and margins on the Newton are rather slim. With memory cards, you can use more memory on a "pay per K" basis.

In the MessagePad, a block of memory is set aside for patches. This space is protected against writing by the Newton's memory management unit, and so can be considered pseudo-ROM (Read-only memory). I've heard that this area is about 32K. When users heard that 1.11/1.05 Newtons would have less memory available for user data, they assumed that the patches were taking up the extra space (some even vocally demanded that Apple replace their ROM so that the patches would not use RAM). As far as I understand it, this is not the case. Instead, the extra memory from the user object store is added to the system heap, and allows the Newton to better handle recognition without running out of RAM or suffering from memory fragmentation problems.

The MessagePad 100/110 motherboard provides a megabyte of RAM instead of 640K, providing more memory for the user object store, the NewtonScript heap (where running programs store their data), and the system heap (where recognition is performed). This should help to alleviate the complaints users had about the limited RAM in the original MessagePad, but users who need to store a very large number of notes, names, or addresses in their Newtons should factor the price of a RAM or Flash memory card into the cost of a Newton.

How tough is the MessagePad? (original MessagePad only)

I did an impromptu and accidental "flying Newton" test by tripping over the power cord. It seemed to hold up fine (landing on a carpeted surface). I don't recommend trying this yourself though - the screen has glass in it and could be cracked pretty easily.

I took my Newton camping in Michigan's Upper and Lower Peninsulas for a week. How did it fare? Well, I was careful to keep it away from wetness and grit (it is NOT waterproof); I found it useful to put the MessagePad in a zip-loc bag and write on the outside of the bag.

The biggest enemy of the Newton was cold. It got down to near-freezing at night, and when I woke the Newton up in the morning it would usually reset and tell me that there had been a power fault. But, when I kept the Newton warm, it was fun to keep a diary of our travels in ink notes stored on a flash memory card, and I think it is very likely that my Newton was the first ever to travel to Sleeping Bear Dune, Tahquamenon River Falls, Whitefish Point, Pictured Rocks, and Sault Saint-Marie. Maybe next year I'll get it all the way up to Copper Harbor and Houghton.

Batteries of any type experience drastic power loss in very cold temperatures, as I found out when attempting to start my car on a 22-degree-below-zero day in Ann Arbor this past winter, and alkaline batteries suffer a particularly large drop in power. If you take your Newton skiing or camping, you might consider keeping the Newton, or just a battery pack, in an inside pocket where it can stay warm, and keep a recent backup of your data on a flash memory card just in case. Be careful not to take your Newton from a very cold environment into warm, more humid air, or moisture condensation may cause problems; if this happens, you might want to take out the main battery, plug in the Newton, and let it sit turned off until the moisture evaporates.

Won't the screen become scratched from writing on it all the time?

The top layer of the screen on the Newton is made out of Mylar (according to MacUser), which is a pretty tough plastic. However, it does pick up slight scratches, and it is easy to accidentally get a tiny piece of grit on the screen and then drag it around with the pen, producing a horrible little scraping sound and a nice visible scratch. You may want to get in the habit of dusting off any visible grit from the screen before writing on it.

I'm not sure how the Newton will fare in very dusty or dirty environments such as on a farm; I'm hoping that Apple will come up with a simple method for replacing the top layer of the screen when it becomes very scratched.

Can you use your finger to write on the Newton?

It would be difficult to write accurately with your finger. It is too blunt an instrument, but it is easy to operate the user-interface and do simple actions like closing windows, checking the battery, or changing the sound volume with a fingernail, if you don't want to pull out the pen.

What's the best way to get drawings into the Newton?

One cute trick is the following: if you have a small line drawing you want to put into the Newton, and it is printed on thin paper, try turning off both recognizers and tracing the drawing right on the screen! Remember you can't make it too complicated, or you will exceed the maximum size of a single note.

Are there any ergonomic problems with using the Newton MessagePad?

If you are prone to eyestrain like I am, you may find the Newton difficult to use for a long period of time. People unused to writing a lot may start to suffer from writer's cramp. In some lighting, the reflected glare from the screen makes it very hard to read. These are some factors you may want to consider before buying a Newton.

For my job, I've been spending as much time staring at the Newton screen as I used to spend staring at a CRT, and I do get eyestrain and a stiff neck. If you're going to be using the Newton a lot, I recommend some kind of stand to prop it up at a comfortable viewing angle, and a good very bright, non-glaring light. If you have a large amount of data to enter into the Newton, I recommend typing it into a Mac or PC and using the Connection Kit to synchronize it.

Will Apple release a ROM upgrade to Newton MessagePad owners?

The long-sought-after ROM upgrade that some original MessagePad owners have wanted will come in the form of an upgrade turning an original MessagePad into the equivalent of a MessagePad 100. I don't have details about this upgrade yet.

Can I use my Newton as an alarm clock?

Yes! You can set alarms for items scheduled in your appointment calendar. The Newton can even wake up from the "off" (actually, asleep) state, play sounds, and put up a notice. It may not be loud enough to wake you up, though.

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Part 4: MessagePad Easter Eggs

Here are a few cute Newton tricks:

- Go into Preferences, select the Personal item, cross out your country name, and type in Graceland as your country. (You will have to type it, since it isn't in the country dictionary). When you turn your Newton on and off or reset it, instead of the light bulb logo, you'll see a Newt. If you have a password set, you can see it longer. (contributed by jesse_devine@gateway.qm.apple.com). (NOTE: this no longer works in the MessagePad 110).

Note: this will have some side effects; the Newton will now think you are dialing from the Graceland area code of the United States, which will give strange results if you're not actually there, so you might want to set it back if you're going to do phone dialing or faxing.

- Write "Find Elvis" on the note pad, highlight it, and click Assist. (This still works in the 110, but it simply adds the location of the King to the list of found items).

- Write "About Newton" and do the same thing.

- Tap on the clock icon and hold it down. You'll see the date, time, and battery gauge pop up. After a couple of seconds you will see the temperature! it is actually the temperature in the battery compartment, which doesn't make it tremendously useful, except to the Newton. To see the thermistor, take out the battery and look for a small white-tipped blue component poking into the battery case. The Newton uses this to know when it should turn off battery charging (information from Nigel Ballard, nigel@dataman.demon.co.uk). (NOTE: this no longer works in the MessagePad 110).

- If you get a Newton error message, you can click on the up-and down- arrows to see the last four system messages. (suggested by Robert Sadowski, robert@world.std.com).

- Reset the Newton. After the Newton reboots, tap the Undo button. You will see an error message that says there is

nothing to undo. Tap the overview dot between the two arrows at the bottom of the screen. You should see two errors listed, both as "Newton." Tap on the topmost one - it will say "Welcome to Newton." Hold the stylus down on the little information symbol (i) for more information. The date will be shown as July 20, 1969, with the time that a human first landed on the moon. (This still works in the MessagePad 110).

- Open the Extras drawer, then tap on the very upper-left corner of the rectangle that bounds it, then in the upper right. You'll see a dialog box asking you to select a connection for a built-in serial debugger. (To see what is going on, connect your Newton to a terminal program). I have no idea what this is good for to an end-user, and it isn't documented for developers, either. (This still works in the MessagePad 110).

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Part 5: Newton Resources

Is Apple listening to feedback about the Newton on the networks?

According to Andy Stadler (stadler@apple.com), Apple employees do follow Newton discussions on the Internet and on many commercial services, often on their own time. (For example, many PIE DTS engineers actively answer questions on the Usenet group comp.sys.newton.programmer). However, since they don't have the resources to officially support users on forums other than on AppleLink or via 1-800-SOS-APPL, if you want to be certain that your message goes directly to Apple, use one of those methods.

Where can I get more information from Apple?

Call 1-800-365-3690 extension 100 for MessagePad availability information. Call 800-7-NEWTON for a recording advertising Newton to non-technical customers. For technical questions you can try Apple Customer Assistance Center at 800-SOS-APPL. You can get the Newton Toolkit from APDA at 800-282-2732. (from Anthony J. Stieber, anthony@csd4.csd.uwm.edu).

Where can I get Newton accessories?

The Apple Catalog (1-800-795-1000) did provide Newton accessories at non-discounted prices; the Apple Catalog is going out of business, though. Mail-order services like MacWarehouse and MacConnection also carry Newton products; you should also be able to order anything Apple carries through your Apple dealer.

Other Newton Resources

NOTE - I currently don't have full Internet access including support for ftp, so I have not been able to verify or update this information for some time.

The primary Newton FTP site is located at newton.uiowa.edu. To contact the moderators send mail to ric-mommer@uiowa.edu or david-rarick@uiowa.edu. For European users, a mirror to this site is going up at ftp.uni-erlangen.de in the directory /pub/Newton; send mail to Dirk.Husemann@informatik.uni-erlangen.de. The Manitoba Mac Developers Association has set up some space on ftp.cc.umanitoba.ca in the /Mac-Develop/Newton directory; contact David A. denBoer, denboer@cc.umanitoba.ca.

There are four Newton-related Usenet groups available: comp.sys.newton.announce (moderated), comp.sys.newton.programmer, comp.sys.newton.misc, and comp.binaries.newton (moderated).

ftp to csd4.csd.uwm.edu in /pub/Portable for PCMCIA-related information.

If you have a CompuServe account, type GO NEWTON

From Jack S. Cuniff (jmac@world.std.com) comes more data on the Boston Computer Society's Mac BBS: The Boston Computer Society's Mac BBS is reachable at 617-864-3375. It is a First Class BBS, with 14.4 Kbps modems and free guest access (limited to 30 minutes per day per user). The BCS is the home of the Newton Programmer's Collective, which is working on a few shareware products for the Newton. The first Newton shareware, Mr. Advisor, made its debut there.

ftp to archive.umich.edu and look in the /newton directory; via gopher, look for gopher.archive.merit.net 70; afs access is available at /afs/umich.edu/group/itd/archive/newton.

The Apple Higher Education gopher server has Newton information at info.hed.apple.com.

FTP to sumex-aim.stanford.edu and look in info-mac/newton. A World Wide Web server is going up at http://www/uth.tmc.edu/newton_info

The TidBITS electronic magazine has been printing Newton information: this is available on the Usenet group comp.sys.mac.digest, via ftp or gopher on sumex-aim.stanford.edu, and searchable via WAIS as "macintosh-tidbit.src" on cmns.think.com.

One of the primary third-party resources for Newton developers is PIE Developer magazine, published by Creative Digital Systems, 293 Corbett Avenue, San Francisco, CA 94114. Contact them at (415) 621-4252, or at cds@netcom.com (AppleLink: cds.sem, CompuServe, 72722.3225; America Online, cds sem). A one-year subscription costs \$60 in the U.S. and Canada.

This list is posted most frequently on the comp.sys.newton.misc news group, and also distributed to CompuServe, America Online, various ftp sites, and whoever else I can think of.

END of Question and Answers List