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Magic Cap 3.1 User Interface Specification

documents the Magic Cap^{TM} user interface
through Magic Cap 3.1 (Rosemary)

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Magic Cap 3.1 User Interface Specification

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Icras, Inc.

955 Benecia Avenue	Tel.:	408 530 2900
Sunnyvale, CA 94086 USA	E-mail:	info@Icras.com
	Fax:	408 530 2950
	URL:	http://www.Icras.com/

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Introduction

This section provides an introduction and describes the organization of this specification.

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Introduction

Magic Cap

The Magic Cap® software provides the foundation for personal intelligent communicators. Because these communicators must be small and inexpensive, they have limited computing resources. To meet the challenges of these limited resources, Magic Cap is compact and efficient, but also rich and flexible enough to support a wide variety of sophisticated software packages. Magic Cap is highly user-customizable, in order to reflect each user's individual personality and tastes. Because communicators must be usable by people who aren't familiar with computers, Magic Cap presents an interface that makes it far easier to use than even the friendliest personal computer. Magic Cap has been designed with an architecture that allows it to run on various hardware configurations and remain a viable platform for many years.

About this specification

This specification documents the Magic Cap user interface through Magic Cap 3.1 (Rosemary). Magic Cap 3.1 (Rosemary) is the Magic Cap software release that follows Magic Cap 1.5. This document, which describes the reference version of Magic Cap 3.1 (Rosemary) rather than any specific licensee's version, describes only those features of Magic Cap that are visible to users. In addition to enhancements

and bug fixes, Magic Cap 3.1 (Rosemary) has been internationalized and localized for Japanese. Where the user interface is different for a localized version, this specification documents those changes.

Note: Final implementation of Magic Cap 3.1 (Rosemary) may require changes to the user interface and/or features that are described in this specification.

Organization of this specification

This specification is organized as follows.

- Part I Introduction – this section

- Part II Deltas summary – summarizes the new features, enhancements, and bug fixes made to Magic Cap in the Magic Cap 3.1 (Rosemary) release

- Part III Compatibility with previous versions of Magic Cap – lists compatibility issues between previous versions of Magic Cap and Magic Cap 3.1 (Rosemary)

- Part IV Magic Cap user interface description – describes in detail the user interface features of the Magic Cap software through Magic Cap 3.1 (Rosemary)

- Part V Application Programmer's Interface (APIs) – describes the Application Programmer's Interface for the Internet services configuration and communications, and the Magic Cap mail framework

- Part VI MIME formats used in Magic Cap – discusses MIME formats used in Magic Cap 3.1 (Rosemary)

- Part VII Modularization of Magic Cap – describes modularity and how the user interface is affected by it

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Note: The specification entitled *Internet Mail and Web Access Specification* is now incorporated into this specification.

Deltas summary

This section lists features that were added or changed in the Magic Cap software since version 1.0, bugs in previous versions of Magic Cap that were fixed, and features or functionality that was removed since version 1.0.

Chapter 2 Summary of changes in Magic Cap 1.5

Chapter 3 Summary of changes in Magic Cap 3.1 (Rosemary)

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Summary of changes in Magic Cap 1.5

Here is a list of changes, bug fixes, and features or functionality removed in Magic Cap 1.5. This section is provided as a historical reference only. Some of the changes to features in Magic Cap 1.5, as presented in this section, are superseded by Magic Cap 3.1 (Rosemary). See the following section, "Summary of changes in Magic Cap 3.1 (Rosemary)", for more information.

AT&T PersonaLink access numbers

Note: The PersonaLink building and all its features were removed in Magic Cap 3.1 (Rosemary).

Cleanup performance improved

Enhancements and bug fixes

- Sped up cleaning by removing slow check of all name cards every time.

- Various speedups to cleaning.

Collecting mail at regular intervals

New features

- Added In box rule to collect periodically within time range. (See page 210.)

Credit card dialing improved

New features

- Added support for US Direct dialing from overseas. (See page 103.)

- Added support for dialing a toll free access number for calling cards. (See page 123.)

- You can now specify whether to dial your long-distance calling card number and secret code number before or after dialing the telephone number.

Credits

Enhancements and bug fixes

- Replaced individual names in credits with company info.

Data packages, manipulating individual items

In Magic Cap 1.0, when you touch a package in the Storeroom and then touch *contents*, you see a list of the items in the package, including a very short description of the item and, for some items, a date. But you can't sort the list, and you can't file, delete, or view individual items in the list. In Magic Cap version 1.5, touching a package takes you to a Package contents scene, where you can do these things.

New features

- *Option*-touching a *checkbox* in the Package contents scene selects or deselects all items in the list.

Datebook

New features

- Added daylight savings time on and off appointments for the UK.

- Made invitation message include location and ending time.

- Made low memory lists offer viewables left in Datebook.

- You can now file an individual appointment, all appointments that occur in a given time range, or all scheduled appointments. To do so, go to the view that you want to file from, touch the *Magic lamp*, and touch *file*.

  Because Datebook appointments aren't cards, they can't be filed into the File cabinet. For this reason, the destination choice list in the File window won't include the File cabinet when there are Datebook appointments among the items to be filed.

  In Magic Cap 1.0, appointments can't be filed or moved from one data package to another.

- Added a *phone call* appointment type.

  A *phone call* appointment can consist of a name, subject, and date, and includes a checkbox used to indicate if the call has been placed yet. The person's telephone numbers are listed on the appointment so users can place the call directly from the appointment.

  phone call

- Added an *eat out* appointment type. Eating out appointments are created in the same way as *meeting* and *general* appointments.

  eating out

- Made the Datebook alarms window display absolute alarm date and time below the chooser which shows the selected setting.

  alarm ◀ 30 minutes early ▶
  (today at 6:30 p.m.)
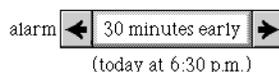
- Made touching a *day* in year view go to day view rather than month view.

- The week view has been modified to display the appointment text (rather than just its image), even if it doesn't have a time associated with it.

- When you add a note to an appointment and add scribbles, lines, or text fields to it, an erase button appears in the title bar of the Notes window. Touch this erase button to erast the last item, or option-touch it to erase all items of the types listed.

  erase

  Touching *erase* removes scribbles and lines but not typed text. In Magic Cap

version 1.5, the *erase* button no longer erases enclosures, stamps, or shapes. Drag these items into the Trash truck to remove them.

- You can now print or fax an entire day's schedule, or a week's or month's worth of daily schedules. The printed form will look just like the day view, only stretched tall enough to fit all information on that day (even if this requires multiple printed pages). A simple header is printed on top of each page that shows the sender's name, date, and time. Stamps, scribbles, and other viewables that are in the day view will be printed at the correct position.

  When invoked from the Magic lamp in the day view, the *print* or *fax* command will print or fax that day's schedule. The week view is printed as eight daily schedules. The month view is printed as a month's worth of daily schedules. However, the year view can be printed or faxed only as the year view. That is, it appears just as you see it on the screen, not as a year's worth of daily or monthly schedules.

  In Magic Cap 1.0, the only choice when printing or faxing from the day, week, month, or year view is to print exactly what appeared on the screen, so if the daily schedule is too long to fit on the screen it can't be printed or faxed. In Magic Cap version 1.5, you still have the option of printing or faxing exactly what is displayed on the screen, but you aren't limited to that view, except in the year view.

Enhancements and bug fixes

- Made week view show as many appointments as will fit.

- Sped up displaying repeating appointments in week and month views.

- Fixed bug where user couldn't slide schedule bar to no duration.

Dialing improved

New features

- Added Manual dialing phone location type. (See page 122.)

- Added Countries dialing codes book to Library, allowing you to add new international phone locations for countries. (See page 102.)

Enhancements and bug fixes

- Added support for dialing calling card number and secret code number before phone number.

  This feature lets you bill communications to long distance calling cards that don't work the same way as AT&T calling cards. AT&T calling cards require you to dial the carrier access code and the telephone number you are calling, then enter your calling card number and secret code number. Other long distance calling

cards require you to dial the carrier access code, calling card number and secret code number, and then dial the telephone number you are calling. In Magic Cap 1.0, this type of calling card isn't supported.
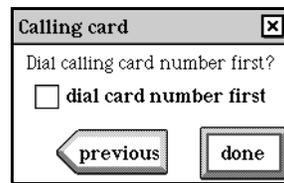
When setting up a calling card in the Dialing location window, a new window appears after you enter the carrier access code. This window contains a check box that sets whether or not the card number and secret code number should be dialed first.

Faxing and printing

New features

- You can now print or fax an entire day's schedule, or a week's or month's worth of daily schedules.

Enhancements and bug fixes

- Made page counts for faxing and printing multiple and long cards be accurate.

- Made it possible to readdress and then re-send failed faxes.

- Fixed bugs where faxing multiple cards messed up sizes and positions.

File window

New features

- The File window now remembers your most recent destination choice. (See page 149.)

- It is now possible to file items into Built-in storage. (See page 148.)

- The File window now has a button, *new package* or *new file*, that opens a window that lets you create a new folder or package. (See page 149.)

- Made File window list folders and packages in alphabetical order.

Enhancements and bug fixes

- Made "nothing to <file, beam, mail>" message fill entire window.

Forward original or a copy of messages

Enhancements and bug fixes

- This rule has been enhanced so that you can now choose to send a copy or the original message when automatically forwarding a message to the specified recipient.

☐ 5. Forward a copy of all messages to Acme Corporation.

Using the choose recipient button, you can select the recipient and the method of delivery. This rule is switched off by default. In Magic Cap version 1.0, you could only forward the original message, not a copy.

Note: This rule was removed in Magic Cap 3.1 (Rosemary).

In box

New features

- Touch *extract name cards* in the Magic lamp to selectively add name cards from the messages you receive. You then select to extract either the sender's name card or name cards for the sender and other recipients of the message. (See page 209.)

- Touch *format text* in the Magic lamp to manually reformat an Internet message, making it more readable. (See page 210.)

- In the list of In box messages, touch any of the *index column headings* to sort the index according to that heading: Image, From, When, or About. (The Image column, which is the leftmost column, is unlabeled.) *Option*-touching a *column heading* sorts backwards.

- Touch *report* to request a report of messages waiting in the service mailbox. (See page 224.)

- A new *track* button was added to take you to the Tracking reports scene. (See page 234.)

Note: Internet mail services offer minimal support of the tracking feature.

- New rules in the Magic lamp lets you reformat all incoming Internet messages automatically, file all messages from a particular sender, and collect your mail at regular intervals. (See page 210.)

- *Reply*, *forward*, *show envelope*, and *file* buttons were added for enclosures. (See page 209.)

Removed features/functionality

• The clear command has been removed from the Magic lamp.

• The summary command was removed from the Magic lamp. It was replaced by the *report* button in the In box scene.

Mail command

The mail command is available in the Magic lamp. It enables users to mail the card or page currently on the screen.

Enhancements and bug fixes

• The mail command now operates in the following order: when you touch *send* in the Mail window, it opens a blank message and the Address to window appears. In Magic Cap version 1.0, after touching *send* you would first select a recipient and then touch *send* again before you saw the blank message.

Mail: miscellaneous

New features

• Added timed forwarding-or-deletion feature for PersonaLink.*

• Added tracking stamp to allow tracking of sent messages.* (See page 231.)

• Added *web site* and *Other pager* stamps to e-mail drawer. (See page 106.)

• Added *reply*, *forward*, and *show envelope* buttons to enclosures. (See page 209.)

• Made *option*-touching *addresses* button show or hide envelope.

• Added ability to manually format incoming Internet messages. (See page 210.)

• Added "re" and "fwd" prefixes to subjects when replying or forwarding.

• Allowed filing enclosures by adding *file* button to single card scene. (See page 209.)

• Added *report* button to In box to take user to Mailbox report scene. (See page 206.)

• Added *mail stats* book to PersonaLink Center.*

Note: Features marked with an asterisk ([*]) are no longer available in Magic Cap 3.1 (Rosemary) or have limited functionality.

Enhancements and bug fixes

- Made text fields retain their color when mailed.

- Fixed bug where some tools could not be mailed successfully.

- Fixed bug where time of "postmark" would change when sent.

- Made *reply to all* send only one copy back to sender, even if sender is on cc: list.

Removed features/functionality

- Removed agent welcome card.

- Removed the bell from PersonaLink Center.

Mail: rules

Note: In Magic Cap 3.1 (Rosemary), the rules for PersonaLink were removed along with all of the other PersonaLink features.

New features

- Made "confirm rules" and "edit rules" messages come back in same connection with status.*

- Added rule to notify user by another means when new PersonaLink mail is received.*

Enhancements and bug fixes

- Made In box rules play at most one sound for a message.

- Fixed bug that was causing mail collection rules and alarms to not work.

Note: Features marked with an asterisk (*) are no longer available in Magic Cap 3.1 (Rosemary) or have limited functionality.

Mail: stationery

New features

- Added *memo* and *from the desk of* stationery types. (See page 194.)

- Made L-shaped body field for postcards. (See page 194.)

- Added choice box for choosing default stationery, reply stationery, and the default font used for new messages. (See page 196.)

Mailbox summary

Enhancements and bug fixes

- Made mailbox summaries reusable. (See page 225.)

- Displayed mailbox summaries in Mailbox report scene instead of in In box messages. (See page 224.)

- Enabled forwarding of messages from Mailbox report scene.*

- Make collecting under low memory conditions collect as many messages as possible, then update the Mailbox report and send notification of the update to the In box.*

Note: Features marked with an asterisk (*) are no longer available in Magic Cap 3.1 (Rosemary) or have limited functionality.

Mailing lists

Note: Mailing lists were removed in Magic Cap 3.1 (Rosemary).

New features

- Added support for mailing lists. Services name cards have been replaced by mailing list cards.

Memory conservation

Enhancements and bug fixes

- Reduced the number of reference objects.

- Rolled in many "unshadowing" fixes from memory tune-up.

- Fixed many other memory leaks and unnecessary shadowing problems.

Memory management improved

New features

- Added Storage map scene to Storeroom.

Note: The Storage map feature was removed in Magic Cap 3.1 (Rosemary).

Miscellaneous

New features

- Limited length of auto-completion lists in Typing and Text book and elsewhere. (See page 104.)

- Made *option*-touching list view *column titles* sort backwards.

- Added an *erase* button to sticky note window and Datebook Notes window.

Enhancements and bug fixes

- Made *erase* button only affect non-automoveable viewables.

- Made stamp on beaming cover page always say "Beam."

- Allowed renaming of snapshots with text coupons.

- Made "sort by image" In box and folders put unseen cards first.

- Allowed snapshots to go to particular card of modal scene.

- Made most announcements vanish when the scene changes.

- Made many small wording changes.

- Improved several images.

- Made several changes to which sounds play when.

- Supported advance-with-return-key for all attribute steps.

- Prevented beaming to communicator that's at password scene.

- Added more cities so virtually every time zone in the world is covered.

- Added support for drawing the screen upside-down.

- Fixed bug where user sometimes couldn't get past password scene.

- Fixed various problems with "delete old items" rules.

- Prevented different parts of name bar from overlapping.

- Disallowed users from skipping many confirmation dialogs.

- Prevented user from trying to send received mail.

Name cards

New features

- When changing information on your own name card, you can now indicate whether to keep the information unlisted.*

- Services name cards have been replaced by mailing list cards.*

- Made *option*-touching *arrows* at top of screen go to next index card.

- Added *web site* address label.

- An *Other pager* stamp has been added to the e-mail drawer of the Stamper.

Note: Features marked with an asterisk (*) are no longer available in Magic Cap 3.1 (Rosemary) or have limited functionality.

Enhancements and bug fixes

- Made deleting a name card also remove it from group name cards.

- Allowed multiple cards for same person at same time.

- Fixed bug where faxing group name card could cut off short.

Name cards, collecting and merging

New features

- Added Magic lamp command for manually extracting name cards from incoming messages. (See page 209.)

Enhancements and bug fixes

- Added heuristics for merging name cards automatically in ambiguous cases. (See page 112.)

- Made name card merging smart about preserving old labels. (See page 112.)

- Made icon of the Name card file on the Desk swallow minicards. (See page 209.)

- Made minicards merge properly when dropped onto the Name card file. (See page 209.)

- Made auto-collect name cards rule default to *only from sender*. (See page 113.)
- Made mail address labels swallow and release mini name cards. (See page 209.)

New items go here

Enhancements and bug fixes

- Made Phone log respect New Items Go Here.
- Made receiving packages respect New Items Go Here.
- Made Out box filing rules respect New Items Go Here.
- Fixed bug where Phone speed-dial buttons didn't work with NIGH.

Notebook

New features

- Made touching a Notebook list item put insertion point at end. (See page 116.)

Enhancements and bug fixes

- Fixed bug where note cards in packages would lose text styles.
- The *erase* button that appears at the right side of the screen no longer erases enclosures, stamps, or shapes.

Out box

New features

- The new *track* button is used to view tracking reports. (See page 234.)
- Touch an *index column heading* in the Out box to sort the list of outgoing messages according to that heading: Image, To, or About. (The Image column, which is the leftmost column, is unlabeled.) *Option*-touching on a *column heading* sorts backwards.

Rule framework

New features

- Added comprehensive Rules book to the Library. (See page 104.)

Enhancements and bug fixes

- Fixed bug where text of certain rules would be corrupted by cleaning up.

- Made copied rules fire in the right order.

- Made rules created with the copy tool work properly.

Rules with means

Note: In Magic Cap 3.1 (Rosemary), the PersonaLink rules were removed along with all of the other PersonaLink features.

Enhancements and bug fixes

- Made all forwarding rules let the user select means.

Searching

Enhancements and bug fixes

- Moved Sniffy to the left so he doesn't block the scroll-down arrow.

- Made Sniffy find animals and animations from any of their images.

- Allowed Sniffy to work prior to personalizing.

- Made Sniffy search for text inside sticky notes.

- Fixed bug where Sniffy would loop between an envelope and its card.

- Fixed bug where Sniffy would disobey the *skip this scene* command.

Size qualified auto-forward rule

Note: In Magic Cap 3.1 (Rosemary), the PersonaLink rules were removed along with all of the other PersonaLink features.

New features

- Added mailbox rule to the Magic lamp that forwards messages based on size.

Sticky note stamp

New features

- An erase button now appears when you scribble with a pencil tool or place a text field in the Note window of a *sticky note* stamp. (See page 181.)

Storage card insertion performance improved

Enhancements and bug fixes

- Sped up insertion of storage card.

Storeroom

New features

- Two new commands were added to the Magic lamp: suggestions for discarding and storage map.[*]

Note: The storage map feature was removed in Magic Cap 3.1 (Rosemary).

- Added "miscellaneous" box to Storeroom.

- Sped up repeated low memory interactions by caching purge list.

- Changed low memory user interface to use new Suggestions for discarding scene. (See page 140.)

- Made storage card not forget folders when inserted into a different communicator.

- Added *copy* button to package scenes. (See page 120.)

- Made storage boxes appear in Storeroom directory window.

- Sped up entering Storeroom.

- Added new buttons, *new package* and *new folder*, to File windows. (See page 149.)

- Enabled filing of Datebook views. (See page 8.)

- Enabled filing into Built-in storage. (See page 148.)

- Made File window remember last destination choice. (See page 149.)

- Eliminated problem leaving Storeroom with packages in trash. You can now leave the Storeroom scene even if there is a storage box in the Tote bag or Trash truck,

but you can't use the Tote bag or Trash truck to remove a storage box from the Storeroom.

In Magic Cap 1.0, if you leave a storage box in the Tote bag or Trash truck and then try to leave the Storeroom, the storage box hops out of the Tote bag or Trash truck back onto a shelf, and an error message appears on the screen.

Enhancements and bug fixes

- Made default setting of package-hopping Storeroom rule be off.

- Improved speed of emptying trash when it contains a backup package.

- Fixed bug where sending a package wouldn't show the package's name.

- Some technical terms were renamed in the system. For example, "main memory" is now called "Built-in storage," and "ROM" is now called "Built-in packages".

- Help has been added to all package scenes, including system storage boxes, data packages, software packages, and backup packages.

Telephone

New features

- Made non-US area codes be suggested more consistently. (See page 102.)

- Made *option*-touching *Telephone* icon show Phone line connected window. (See page 129.)

- Distinguished local, long distance, and toll-free calls for hotel locations. (See page 123.)

- Added *airplane* dialing location. (See page 122.)

- Added *manual dialing* dialing location. (See page 122.)

Enhancements and bug fixes

- Made dialing control panel show up without construction mode.

Note: The *dialing* button no longer appears in Magic Cap 3.1 (Rosemary). All of the dialing controls now reside in the Telephone and are controlled by touching *options* in the dialing location scene.

- Fixed bug where dialing from name card would sometimes time out.

- Fixed several problems with storing/dialing particular numbers.

- Made telephone logging rule be off by default. (See page 132.)

Text and typing

New features

- Made uppercase letters appear on Keyboard dynamically when *option* key is pressed. (See page 150.)

- Made caps lock require *option* key.

- Made text styles in some input fields resize dynamically.

- Typing accented characters has also been simplified. (See page 151.)

Enhancements and bug fixes

- Made closing keyboard not scroll card to top.

- Made text selection window not zoom open and closed.

- Made scroll arrow appear above Keyboard when viewing card.

- Removed restriction about typing when style window is open.

- Fixed bug where typing quickly could give multiple capitalized letters.

Text styles

New features

- Added monospaced Typewriter 10 font.

  Because it is monospaced, Typewriter 10 can be used to create documents in Magic Cap whose layout depends on constant character widths. It can also be used to accommodate existing information services or networks that use older computer terminals on which all characters are of equal widths.

  The coupon for Typewriter 10 appears in the fancy drawer of the *text styles* category in the Magic hat.

Timed delivery

Note: The timed delivery feature was removed in Magic Cap 3.1 (Rosemary).

New features

- Added timed forwarding-or-deletion feature for PersonaLink.

Tracking reports

New features

- Added Tracking reports scene. (See page 234.)

Unlisted address labels

New features

- Allowed unlisted address and phone labels.

Note: The "unlisted" address label is not applicable for mail sent via the Internet and so was removed in Magic Cap 3.1 (Rosemary).

3

Summary of changes in Magic Cap 3.1 (Rosemary)

Here is a list of many of the changes, bug fixes, and features or functionality removed in Magic Cap 3.1 (Rosemary).

AT&T PersonaLink

The AT&T PersonaLink Service building, name card, message in the In box, rules, and e-mail stamp, as well as all references in the Magic Cap software were removed in Magic Cap 3.1 (Rosemary).

Backup command

New features

- An announcement that the backup is in progress replaced the spinning hat, and the user cannot change scenes until the backup is complete.

- The backup process now does a pre-flight to determine if there is enough room on the storage card and then displays an announcement if there is not.

Beam command

Removed features/functionality

- Magic Cap 3.1 (Rosemary) communicators cannot beam data to Magic Cap version 1.0 and 1.5 communicators.

- Beaming a name card to another Magic Cap 3.1 (Rosemary) communicator no longer beams all of the data on the name card; the name card now includes the name and e-mail addresses only.

Clock

Enhancements and bug fixes

- Touching the *Clock* in the Clock and Calendar display page now causes the *set time* button to flash as well as display the page for setting the time.

- Touching the *Calendar* in the Clock and Calendar display page now causes the *set date* button to flash as well as display the page for setting the date.

Removed features/functionality

- The rule about synchronizing the Clock was removed.

Commands window

Enhancements and bug fixes

- The *find* button was renamed *search,* and searching was enhanced. (See page 176.)

Controls

Removed features/functionality

- The *dialing* button no longer appears in Magic Cap 3.1 (Rosemary). All of the dialing controls now reside in the Telephone and are controlled by touching *options* in the dialing location scene.

Datebook

New features

- It is now possible to schedule an appointment that crosses midnight.

- Two new repeat options were added: repeat T/TH and repeat M/W/F. "Repeat T/TH" sets the appointment to repeat on Tuesdays and Thursdays until the date specified by the until button. "Repeat M/W/F" sets the appointment to repeat on Mondays, Wednesdays, and Fridays until the date specified by the until button.

- These new special days are now in the Datebook: first day of spring, Mother's Day, Father's Day, first day of fall.

Enhancements and bug fixes

- The *alarm ringing* and *alarm not ringing* images were enhanced so that they are more distinguishable on poor-contrast screens.

- Touching in the left column of an appointment in the day view now opens the Alarm and other details window in which you can use the choosers to set or change the appointment's alarm, priority, and status. In previous versions of the Magic Cap software, users had to first open an appointment and then touch the *alarm+* button to see the Alarm and other details window.

Removed features/functionality

- Removed the vernal and autumnal equinox appointments from the non-Japanese builds. Replaced with first day of spring/fall appointments.

- Removed the daylight savings time tasks for Europe and the UK.

Downtown

Removed features/functionality

- The AT&T Building was removed in Magic Cap 3.1 (Rosemary).

Favorite places window

New features

- Added the Favorite places window in which users can add shortcuts to the scenes and places they frequently visit. Accessible by o*ption*-touching the *Desk*. (See page 91.)

Faxing

Enhancements and bug fixes

- The Fax options window was enhanced in Magic Cap 3.1 (Rosemary) to include full page faxing and to allow text comments on the cover sheet. (See page 146.)

Fax receive

New features

- Added the ability to receive faxes on a communicator. (See page 130.)

Find command

The Find command was renamed Search. (See page 36.)

Getting started

- A stop sign image was added to the stop lesson confirmation window.

Hot text

New features

- Hot text is a new feature in Magic Cap 3.1 (Rosemary) that offers an appropriate action when the user touches text that the software recognizes and interprets as something that it can do something useful with. For example, touching an e-mail address offers to open a new pre-addressed message. (See page 56.)

In box

New features

- The default stationery for incoming Internet messages was changed from the plain letter to the memo stationery.

- When connecting to an Internet service provider, Magic Cap 3.1 (Rosemary) will prompt for a mailbox (POP) password if the setting, "ask when connect", is switched on. (See page 218.)

- When connecting to an Internet service provider, Magic Cap 3.1 (Rosemary) will prompt for a dialup (PPP) password if the setting, "ask when connect", is switched on. (See page 219.)

- When an enclosure is sent from a non-Rosemary mail program, and Magic Cap can't "decode" it (convert it to some viewable format), it will display as a placeholder. (See page 208.)

Removed features/functionality

- The In box no longer initially contains a message from AT&T PersonaLink about joining PersonaLink. A button on this message was used to request the registration packet from AT&T PersonaLink.

- The rule, "Keep a copy in the AT&T PersonaLink Services mailbox of the last few messages collected", was removed.

Internet Center

The Internet Center is a new feature in Magic Cap 3.1 (Rosemary). It is used to add and configure connections and services for Internet Service Providers (ISPs). (See page 212.)

Keyboard

- Improved performance of tapping quickly on the Keyboard.

- Provided for entry of Japanese characters in Japanese Magic Cap. (See page 153.)

- Added the "a@b" mode to the Keyboard for typing e-mail addresses and URLs. (See page 152.)

Library

New features

- The Controls page was added to the Word Lists book. It contains controls used to disable these text features: hot text, word completion, auto caps. (See page 104.)

- A lesson was added to the Getting Started book which describes the process for signing up for an ISP and changing the configuration settings.

- A new book entitled Mail Stats was added. It contains a monthly record of the messages sent and received from the communicator. This book replaces the book was in the PersonaLink Center.

- Three new word categories and a *limit* button have been added to the Typing & Text book. These new word categories have been added: App'ts-all-day, App'ts-multi-day, and App't places.

Enhancements and bug fixes

- The "personalize" lesson was updated so that it forces users to personalize after following the lesson to create their name cards. In Magic Cap version 1.0 and 1.5, the "do you want to personalize" confirmation dialog did not appear.

- The "set up dialing" lessons were updated to reflect the enhancements to calling locations in Magic Cap 3.1 (Rosemary).

- The Word Lists book was renamed Typing & Text.

- Added 3 pages to the Countries book: China, Korea, and Taiwan.

- AT&T's US direct number was removed from the Countries book.

Removed features/functionality

- The lesson *Sign up for the PersonaLink service* was removed from the Getting Started book.

Mail: receiving

New features

- Implemented a user interface for undecoded parts. (See page 208.)

- *Option*-touching *stop* in the Communicating window now cancels the queued connections to all service providers.

Enhancements and bug fixes

- The scene the user sees when viewing a name card received in the mail was changed from "Directory Lookup" to "New name card."

- Mail collection now keeps track of how many messages weren't collected because of rule filters, and displays a notice if no messages were collected.

- The Communicating no longer reports the total number of messages in the mailbox when collecting mail. It reports that it's checking for new messages, and then reports how many new messages there are.

Mail: sending

New features

- When mailing a code package, the chooser appears in the Mail window to allow the option of mailing the package with or without (default setting) changes.

- Implemented a "reply to" feature that allows the sender to direct replies to a message. (See page 227.)

- When addressing a message using a group name card, the names of individuals in that group are displayed in the addressing portion of the message instead of the group name. This also eliminated the need to *option*-touch the group name in order to display the addressees.

- *Option*-touching *stop* in the Communicating window now cances the queued connections to all service providers.

Removed features/functionality

- The time limit stamp was removed.

Mail: stationery

Enhancements and bug fixes

- Messages received from the Internet appear on the memo stationery instead of the plain letter stationery.

Mailbox report

New features

- *Option*-touching a *checkbox* in the Mailbox report scene now selects or deselects all items in the list. Note that multiple selection also works in the Package contents scene and in the Suggestions for discarding scene.(See page 224.)

- It is now possible to collect and delete a message in one step.

- The list of messages is now sorted by date and time.

Removed features/functionality

- The Message report scene, accessible by touching an item listed in a mailbox report, was removed.

- The ability to forward a message using a mailbox report was removed.

- Magic Cap 3.1 (Rosemary) no longer automatically retrieves a mailbox report when collecting mail under low memory conditions.

Memory management

Enhancements and bug fixes

- The Suggestions for discarding scene was enhanced so that the user can see items as they are added to the list, scroll the list, stop the search at any time, and select more than one item in the list at a time. (See page 140.)

- The Suggestions for discarding scene now displays a message indicating how much reclaimed memory is needed.

- Low memory handling now targets the current container used for storage of new items.

Removed features/functionality

- The Storage map feature was removed.

Miscellaneous

New features

- *Option*-touching a *checkbox* selects or deselects all items in the list. This new multiple selection feature works in the Mailbox report scene, Package contents scene, and the Suggestions for discarding scene.

Enhancements and bug fixes

- The category chooser that appears at the top of the name chooser windows was removed.

- The eraser's performance was improved and it is more accurate.

- Performance of tapping quickly on the Keyboard was improved.

- Text selection was enhanced so that it automatically scrolls beyond what is displayed on the screen if you drag below the bottom or above the top of the visible area of text.

Name cards

New features

- A new "note" address label was added to the Main drawer of the Stamper so users can add arbitrary information to name cards. (See page 111.)

- A new "more lines" checkbox was added to the Street address window when adding and changing an address. It gives users more room to enter street addresses that are longer than one line. (See page 110.)

- The window that prompts for country when adding and changing an address now appears before the other addressing windows so that entering information for a country other than the US and Canada can be entered in one window rather than leading the user through windows with fields that don't apply (i.e., zip codes). (See page 110.)

- Added a new rule that allows users control over the prompt for country when adding and changing postal addresses. (See page 115.)

- The window that appears when editing an address' description was renamed to "Heading".

- A newly created name card now comes with these stamps: work address, home address, work phone, work fax, home phone, Internet e-mail address. The text of the message about using the Stamper to add additional stamps was shortened to allow enough room for the Internet e-mail address stamp.

Enhancements and bug fixes

- A new name card architecture was implemented to store information more efficiently. You can now fit a lot more name cards in the same amount of memory, and many tasks involving name cards are faster.

- The window in which you could choose the type of name card (person, company, group, or mailing list) was removed. In its place is a check box that allows you to switch between person and company while you are in the process of creating a new name card.

- Group name cards are now created using the "new group" button in the Magic lamp from the Name card scene.

- The image used in the Favorite Places scene is now the same multiple name cards image used when filing all name cards in the Name card file.

- The announcement, "Now personalizing your Magic Cap™ software for [name]. This will take a moment or two" was removed because the performance is now much faster. Also, the confirmation window that appears before personalizing no longer contains the phrase "This may take a minute or two."

- If a name card is associated with a group name card, discarding the individual name card now updates the group name card so that it no longer lists the member.

- The labels for some of the name card stamps were renamed for clarity.

- The MCI stamp in the Stamper for the Name card file was replaced with a newer version of the company's logo.

Removed features/functionality

- The stamps visible from the Name cards scene in the Stamper were rearranged. These stamps were removed: Prodigy, ATTMail, SkyTel, X400. (See page 108.)

- The mailing list name card type was removed.

- The option to allow unlisted addresses and phone numbers on name cards is not applicable for mail sent via the Internet, so it was removed.

- The code that draws the "certified" sash on name cards was removed because it is no longer relevant.

Name chooser/people picker window

- The chooser that once appeared at the top of the name chooser windows was removed. It allowed you to list the names by the category to which they were assigned, as defined by the group name cards and other groupings: All, Co-workers, Companies, Family, Friends, Groups, People, Services.

New messages scene

New features

- A new rule was added to the New messages scene that enables the user to control whether or not the Keyboard opens when a new message is created. (See page 232.)

- A framework was added that allows any mail application to support rich Magic Cap content. (See page 230.)

- A data conversion framework was implemented for converting messages sent from Magic Cap 1.0 or 1.5 devices to Magic Cap 3.1 (Rosemary) devices.

- The *send* button will change its image to indicate that the message contains rich elements. (See page 230.)

Removed features/functionality

- Removed the C.O.D. stamp from the messages stamp drawer and rearranged the remaining stamps.

Notebook

New features

- A new rule was added to the Notebook scene that enables the user to control whether or not the Keyboard opens when a new notebook page is created (See page 118.)

Out box

New features

- When connecting to an Internet service provider, Magic Cap 3.1 (Rosemary) will prompt for a mailbox (POP) password if the setting, "ask when connect", is switched on. (See page 218.)

- When connecting to an Internet service provider, Magic Cap 3.1 (Rosemary) will prompt for a dialup (PPP) password if the setting, "ask when connect", is switched on. (See page 219.)

Package contents scene

New features

- *Option*-touching a *checkbox* selects or deselects all of the items in the list.

Enhancements and bug fixes

- The performance of unpacking packages was improved.

- The performance of filing an item into a package was improved.

Web Browsing

The web browser software allows you to download web pages via the Internet. (See page 237.)

Printing

Enhancements and bug fixes

- Added the ability to format the text of a message or notebook page so that it can be printed on a 8.5" by 11" page. (See page 174.)

In Magic Cap version 1.0, when the text of a message or notebook page printed, its boundaries were restricted to those of the communicator's screen.

Revert

The revert feature was removed.

Rules

New features

- Opening a rule to edit it automatically switches the rule on if it was off.

Searching

Enhancements and bug fixes

- The Search window (previously named Find) and the searching feature itself were enhanced to improve performance and to make it easier to use. (See page 176.)

- The Search dog now displays a list of the items as they are found, allows the user to stop the search, and touch an item in the list to look at it.

- The go button was replaced with the start button. It changes to a stop sign when a search is in progress.

- Searching now finds items in cards (was not functioning on the Macintosh simulator), cards inside folders in the File cabinet, and folder names.

- Searching now plays the *magic* sound when the search completes successfully.

- When the Search dog finds a match of a folder or card, the place name flashes at the top of the screen to draw the user's attention.

- Visiting a folder or card in the File cabinet sets the step-back pointer to match what you would see had you navigated there manually.

Removed features/functionality

- The *faster* option was removed. It allowed the user to speed up the search by disabling the animation.

- The checkbox which allowed you to search only the current scene was removed. Now it always searches the current scene first.

Sound stamp

Enhancements and bug fixes

- A new sound compression algorithm for voice stamps was implemented. A 5-second voice stamp now takes only 9K instead of 30K of RAM.

Storage cards

Storage cards formatted on Magic Cap 3.1 (Rosemary) devices cannot be used on Magic Cap version 1.0 or 1.5 devices. Data stored on storage cards formatted on Magic Cap version 1.0 or 1.5 devices is translated into Magic Cap 3.1 (Rosemary) format when inserted into a Magic Cap 3.1 (Rosemary) device, but not all data is transferable.

New features

- When a storage card that contains Magic Cap version 1.0 or 1.5 data is inserted into a Magic Cap 3.1 (Rosemary) device, a confirmation window appears in which users can touch a button to translate the data into Magic Cap 3.1 (Rosemary) format. (See page 137.)

Storeroom

New features

- *Option*-touching a *checkbox* in the Package contents scene selects or deselects all items in the list.

- We have added a framework to move data from the communicator to a personal computer and back to the communicator. We call this framework PC Connectivity (previously referred to as PC Link.) This framework is now ready for client application development. In the past, the company Intellilink (recently purchased by Puma) provided the Magic XChange client; however, they are not providing a client for this version of Magic Cap. Icras, Inc. has written a simple client to run on the Unix environment for testing and development purposes. This client is not meant to be production quality software and is merely for demonstration purposes.

  The PC Connectivity framework allows for: tapping the PC image in the Storeroom to connect to the host PC; dragging packages in the Storeroom onto the PC image to upload the package to a host computer; downloading packages from the host to the communicator.

Enhancements and bug fixes

- Performance of unpacking packages was improved.

- The performance of filing an item into a package was improved.

- Made the *show hidden packages* feature 25 times faster.

- The *discard* button in the Package contents scene always appears, even when no item is selected. If the user touches *discard* and no item is selected, an announcement appears. In Magic Cap version 1.5, the *discard* button only appeared when an item was selected.

- The *view* button in the Package contents scene only appears for selected items that can be viewed. In Magic Cap version 1.5, the *view* button always appeared when any item was selected, and it would sometimes honk when touched.

Removed features/functionality

- Because all packages in RAM, including debug packages, must have names and can no longer be hidden, the Storeroom rule about showing hidden packages was removed.

- The Storeroom rule about controlling the hopping behavior of packages in the Storeroom was removed.

Telephone

New features

- The Dialing location scene is a new feature designed to streamline adding a new dialing location by making phone control options settable per location. (See page 124.)

- The Dialing options window now includes a checkbox for *don't dial national access locally.* This checkbox appears only when the *always dial area code* checkbox is switched on. This feature enables users to control whether a national access code ("1" for USA) is dialed. For example, Houston is switching to a new mode of dialing where the area code must always be dialed but the national access code must not be dialed.

Enhancements and bug fixes

- The *setup* button in the Telephone scene and Phone line connected window was renamed *location* and its image was changed*.

- The *services* button now appears only when there are services installed, such as fax receive.

- The performance of dialing with the keypad when offhook was improved.

- The Phone status window (the window that opens when the communicator dials) was rearranged so that the *hang up* button is easier to find.

- The speed dial buttons are now labelled with generic labels instead of being blank.

- Added 3 pages to the Countries book: China, Korea, and Taiwan.

- The images of these calling location stamps were changed: home, work, hotel.

- The rule in the Magic lamp for logging telephone calls automatically is now turned off by default.

- The dialing country object "United States" was renamed "USA" to be consistent with the way countries are used with postal addresses.

- All occurrences of text "billing method" were renamed "calling card".

Removed features/functionality

- Removed the AT&T calling cards from the system. (See page 124.)

Time limit stamp

The time limit stamp was removed.

Text and typing

New features

- Added the auto scroll feature allows you to select text beyond what is displayed on the screen. (See page 56.)

Text and typing

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Compatibility with previous versions of Magic Cap

This section of the specification lists those compatibility issues between Magic Cap 1.0, Magic Cap 1.5, and Magic Cap 3.1 (Rosemary) that were known when this specification was compiled.

Chapter 4 Compatibility issues

4

Compatibility issues

The compatibility issues exist mainly between the first generation of communicators, versions 1.0 and 1.5, and the second generation, Magic Cap 3.1 (Rosemary). Magic Cap 1.0 and Magic Cap 1.5 are almost completely compatible with each other. Between the first generation and second generation communicators, there is a high degree of compatibility. Many objects in data packages will be able to move from Magic Cap 3.1 (Rosemary) communicators to 1.0 communicators transparently to the user. A conversion package included with Magic Cap 3.1 (Rosemary) will translate objects in data packages from their 1.0 formats to Rosemary format (primarily users data such as namecards.

Developers of packages intended to work with 1.0 communicators can update them to work with Rosemary communicators. The Rosemary developer kit will include documentation and tools to help developers convert their source code.

Beaming

Beaming is not compatible between first generation and second generation devices. The new IRDA beam hardware in the Magic Cap 3.1 (Rosemary) hardware reference design complies with existing industry standards and is not compatible with the IR standard used in the 1.0 reference design.

Library

Rule book

The Rule book can be sent to a Magic Cap version 1.0 communicator from a 1.5 communicator, but the receiver can't open it.

Mail

Sending messages

Magic Cap 1.0 and 1.5 devices send ICF wireline encoded messages; Magic Cap 3.1 (Rosemary) devices will send MIME encoded messages. This will allow for a broader range of main compatibility with popular systems.

Rich content

Across platforms, only the text portions of messages will be readable; rich content, such as stamps and scribbles, will not.

Tracking stamp

Tracking stamps disappear from messages that are sent from Magic Cap 1.5 devices to Magic Cap 1.0 devices.

Name cards

Collecting name cards from incoming messages

Entity coupons are obsolete in version 1.5, so if a Magic Cap version 1.0 device sends one to a Magic Cap version 1.5 device, it will be stripped out.

Mailing list cards

Significant between 1.0 and 1.5. Magic Cap version 1.5 uses new classes not present in Magic Cap 1.0 name cards. At present, if you send a Magic Cap 1.5 mailing list name card to a Magic Cap 1.0 communicator, it shows up blank. In Magic Cap 3.1 (Rosemary), the mail list name card type was removed.

Unlisted addresses and telephone numbers

Magic Cap version 1.0 devices will be able to receive the data from 1.5 devices indicating that a label is unlisted, but will not display that property to you, nor allow you to change it.

Packages

Packages are not compatible. 1.0 and 1.5 packages will not run on a Magic Cap 3.1 (Rosemary) device, and Magic Cap 3.1 (Rosemary) packages will not run on 1.0 and 1.5 devices. Objects of package classes are not compatible because package object code is not compatible.

Backup packages

Objects stored in backup packages can not be converted from Magic Cap 3.1 (Rosemary) to their 1.0 or 1.5 equivalents. The same objects can be converted if they are stored in data packages instead of backup packages.

Stamps window

Sticky note

If you try to send a Magic Cap version 1.5 sticky note to a Magic Cap version 1.0 communicator from a 1.5 communicator (or transfer it in a package on a storage card), the recipient will receive the sticky note but not be able to open it.

Storage cards

Storage cards will not be backwards compatible. Storage cards formatted with Magic Cap 3.1 (Rosemary) will not be readable in 1.0 or 1.5 devices, but Storage cards formatted with Magic Cap 1.0 or 1.5 will be readable in Magic Cap 3.1 (Rosemary) communicators.

Text styles window

Typewriter 10

The text style, font description, and bitmap font for Typewriter 10 could not be added to the interchange lists that account for all such objects in Magic Cap 1.0, because these lists offer no mechanism for versioning.

If you send a message using Typewriter 10 to a Magic Cap version 1.0 device from a 1.5 communicator, that communicator will substitute the default font for Typewriter 10 in the message. If you then forward the message to a Magic Cap version 1.5 device, the message will once again use the Typewriter 10 text style.

Platforms that perform font substitution when printing should substitute an appropriate font, such as Courier 12, for Typewriter 10.

Magic Cap user interface description

This section of the specification describes in detail the features that are visible to the user.

Chapter 5 User interface concepts and elements

Chapter 6 Personal information management features

Chapter 7 Internet features

Chapter 8 Localized versions of Magic Cap

5

User interface concepts and elements

This section describes fundamental principles of the Magic Cap user interface that are found in many parts of the software.

Touch the screen

Users touch the screen to operate the Magic Cap software. Touching some items, such as buttons, performs a specified action, such as going to a scene. Some items can be manipulated directly, allowing users to slide them around on the screen to reposition them.

Magic Cap distinguishes two kinds of touch: tap and slide. The user taps by touching the screen and releasing the touch at the same screen location, as if operating a push button. The user slides by touching the screen, moving across the screen while still touching, then releasing the touch, as if sliding an object aside. In some cases, touching without moving simulates repeated taps, as on a scroll arrow.

The first time the user touches the screen after a complete power shutdown, three touch targets appear to ensure that the screen is calibrated.

Slide

Many items can be moved or operated by users touching them and then sliding them along the screen. This slide technique is used to perform several different kinds of actions:

• Moving items to a new position on the screen.

- Moving items into a container, such as the Tote bag, the Trash truck, or a drawer.

- Moving items to an entirely different scene, such as dropping an item into a door in the Hallway to move it to that door's scene.

- Changing the appearance or behavior of objects by dropping items – usually coupons or stamps – on them.

Scenes and navigation

Magic Cap users look at information and perform actions by moving through scenes in the software that are modeled after places and objects in the physical world. There are three main scenes (or places) in Magic Cap: the Desk, a Hallway that provides access to other rooms, such as the Library and a Storeroom, and Downtown, which allows users to work with remote information services. Within these three main scenes users will see other scenes when they touch certain objects. They will also manipulate objects and navigate through windows, card stacks, and books.

Buttons, icons, and gadgets

Many features are activated when users touch on small images. These images are usually buttons, icons, or gadgets. All of these controls perform an action for the user; the distinctions are subtle and will probably be missed by most users (and many programmers).

- Buttons act according to their scripts or perform a predetermined action. When the user presses a button, the button tracks the user's touch, highlighting while the button is pressed and removing the highlighting if the user slides outside the button or releases the touch.

- Each icon is associated with a destination, such as a scene or card. When the user presses an icon, the icon highlights; if the touch is released while still on the icon, the user goes to the destination that's associated with the icon.

- Each gadget is associated with a window. When the user presses a gadget, the gadget highlights; if the touch is released while still on the gadget, the gadget's window opens (or closes if it's already open).

Windows
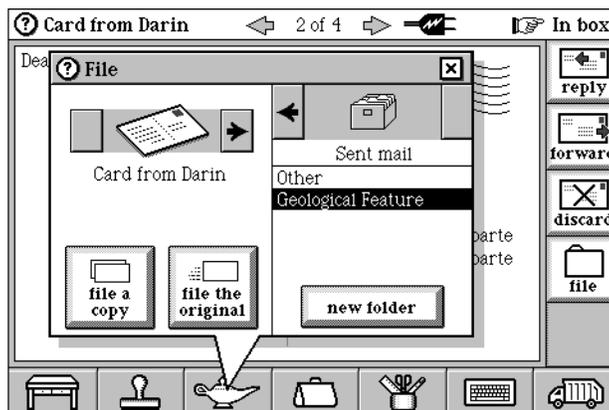
Some Magic Cap features must be made available without taking the user to a new scene and changing the main part of the screen. To accomplish this, windows appear that are layered on top of the current scene. Windows usually open when users touch particular items; for example, touching the Trash truck image at the bottom of the screen opens a window that shows the contents of the Trash truck.

- Windows can be layered atop each other.

- Most windows have a title bar at the top that displays a circled ? and the window's name on the left edge, and a closer (an X in a box) on the right edge.

- Touch the *circled ?* to see information about that window.

- Touch the *closer* to close the window.

- Some windows have no title bar and no buttons or other items to touch. Touch anywhere in one of these windows to close it.

- Slide the title bar to move the window.

- Many windows have a tail pointing to the item that was touched to open the window. Touch that item again to close the window.

Announcements
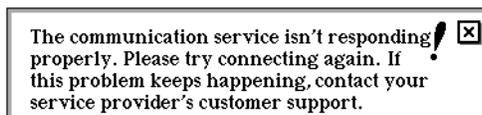
The Magic Cap software makes announcements in public address windows to inform the user of important events or situations that require attention, such as an error in sending a message or an out of memory condition.

- Ongoing announcements and one-time announcements that can't be displayed immediately are represented by images at the top of the screen. If more than one kind of announcement is ongoing, their images rotate.

- Touch the image at the top of the screen to see the current announcement, or a list of announcements if more than one is ongoing.

Confirmation dialogs

Magic Cap uses confirmation dialogs in windows to ask the user to confirm destructive or irreversible actions, such as throwing away a name card. Confirmation dialogs are displayed if "more warnings" is set in the general controls.

The "hot text" confirmation dialog windows appear when the user touches on text that the Magic Cap software recognizes and interprets, and for which it can offer an appropriate action. When the user touches "hot text", a confirmation dialog window appears offering to do something useful, or allowing the user to edit the text instead.

Information windows

Information about a scene or window is available by touching the *circled ?* in the title bar next to the window or scene name. The text is generic enough to remain true for windows that change their names and scenes that change their behavior.

- Touch the *circled ?* in any scene or window to see informational text in a window.

Visual effects and sounds

Magic Cap uses standard visual effects and sounds to provide familiarity and comfort to users while operating the system. All sounds can be customized, and there's an easy way to turn off the volume when quiet operation is needed.

Visual effects

- When the user presses a button, the button tracks the user's touch, highlighting while the button is pressed and removing the highlighting if the user slides outside the button or releases the touch. Buttons highlight by displaying an alternate image.

- When the user presses an icon, the icon highlights; if the touch is released while still on the icon, the user goes to the destination that's associated with the icon. Icons highlight by displaying a halo.

- When the user presses a gadget, the gadget highlights; if the touch is released while still on the gadget, the gadget's window opens (or closes if it's already open). Gadgets highlight by displaying an alternate image.

- Some newly created objects hop to their position.

- Many items hop to the Trash truck when they're deleted.

- Many items zoom open when they fill the screen.

Sounds

These are the names of the 12 standard sounds that are used to indicate system actions: contain, copy, door, error, dismiss, keyboard, magic, ring, no mail, swallow, switch, touch. Unless otherwise noted, sounds are played for these actions:

- contain: move an item out of its container, move an item into a new container, and *option*-touching in the *title bar* of windows that have additional options.

- copy: make a copy of an item, either with the copy tool or in another way, such as getting an item from the Stamper and Magic hat or *option*-sliding from the Tote bag.

- door: enter or leave a room in the Hallway.

- error: try to slide an object that can't move.

- dismiss: close a window.

- keyboard: touch keys on the Keyboard.

- magic: receive a message.

- ring: the Telephone is ringing.

- no mail: no messages are waiting in the service mailbox.

- swallow: drop an object inside a container to perform some action.

- switch: touch a switch to flip its state.

- touch: press an item on the screen.

- A system sound can be changed by dropping a sound coupon from the Magic hat onto one of the sounds.

Folders

The user can create folders in the File cabinet to hold messages, notebook pages, and other items. Although these folders are used primarily in the In box, they can also be used to help carry collections of items from place to place.

Choice boxes and lists
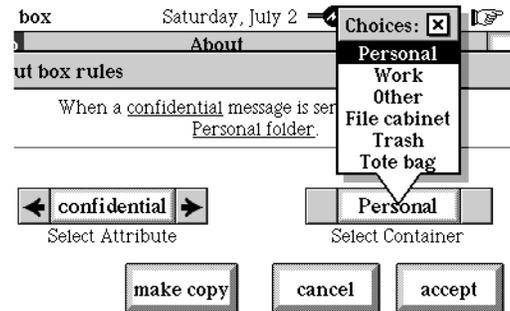
Choice boxes provide a way for users to select an item from a list.

- Touch a *choice box* to see a window listing the choices.

- Touch an item to select that item and close the window.

- Slide to an item and release to select that item and close the window.

- If all the items don't fit in the window, scroll through the list by sliding past the top or bottom or by touching the arrows.
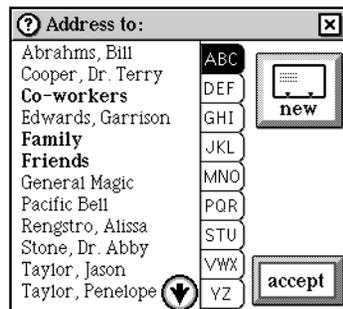
- Touch the selection window's *close box* to continue without making a selection.

Current contact

Communication is at the heart of the Magic Cap software's features. Magic Cap keeps track of the last person, group, or company that was contacted, and of the last means of delivery for sending messages. This current contact is then suggested as the default the next time the user makes a contact.

- The current contact is set by any of these actions: send a message, make a phone call, make an appointment, add a new name card, look at a name card, select a name from any list of names.

- The current contact is offered as the default when the people picker opens and when the user touches the *contact* button in the Magic lamp.

Customizing

Users can customize their scenes by adding items from the Stamper, writing with tools, dropping items from the Magic hat, and using other techniques. Unless otherwise noted, all scenes allow users to perform the functions described in this section.

Coupons

Coupons provide a tangible way to work with otherwise untouchable attributes of objects. Coupons allow users to control many features of objects, including labels, colors, frames, shadows, sounds, text styles, and several more.

- Users create a text coupon by holding down the option key and touching the *Keyboard* image to open the Labelmaker. After typing the text coupon, the user slides it over the object to be renamed.

- Get coupons from the Magic hat when construction mode is turned on.

- Drop coupons onto items to change their attributes.

- An item highlights with a starburst when a coupon is hovering to show that the item can accept that coupon.

Construction mode tools

- The "components" tools are available from the Magic hat when construction mode is enabled.

- The coupons available from the Magic hat are: colors, sounds, borders, text styles, shadows, line styles.

- The stamps normally found in the Stamper are also found in the Magic hat.

Stamps

Magic Cap users can decorate their scenes and messages with stamps, which are small pictures featuring symbols, animals, holiday decorations, and many other images. Most stamps are decorative; others have special meanings that imply or perform some action.

Option key

Magic Cap communicators include exactly one physical key: the Option key. This key is used to modify what happens when users perform actions in Magic Cap. As its name suggests, the Option key is used to perform alternate functions. For example, holding down the Option key while sliding out of the Tote bag produces a copy of an item in the Tote bag.

Manipulating text
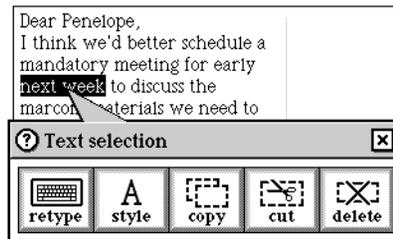
- Touch in a text field to select a word. Release the touch to leave a typing point and open the Text selection window and the on-screen Keyboard.

- Slide in a text field to select more words. Release the touch to open the Text selection window.

- In the Text selection window, touch *retype* to remove the selected text and leave the typing point in its place, touch *style* to open the Text style window, copy to copy the selected text into a new text coupon that hops to the Tote bag, cut to remove the selected text and place it into a new text coupon that hops to the Tote bag, delete to remove the selected text.

See "Text Styles Window" on page 196.

- *Option*-touch in a *text field* to select the text between the typing point and the touch location.

Summary of changes to manipulating text

- Text selection was enhanced so that it automatically scrolls beyond what is displayed on the screen if you drag below the bottom or above the top of the visible area of text.

Hot text

Hot text is a new feature in Magic Cap 3.1 (Rosemary) that offers an appropriate action when the user touches text that the software recognizes and interprets as something that can do something useful. A confirmation window which shows the recognized text in boldface along with a message instructing you of the options

available. The buttons in the window are used to invoke an action. Magic Cap 3.1 (Rosemary) recognizes the following categories of text and offers the corresponding action.

Type of text	Action offered
e-mail address	Offers to open a new message addressed to this e-mail address, or you can simply edit the text.
	penelope@acme.magic.com looks like Penelope Taylor's Internet e-mail. Would you like to write a message or just edit the text you touched? [to:] [write] [edit]
	If there is not a name card in the Name card file with this e-mail address, Magic Cap gives the additional option of creating a new name card that contains the e-mail address.
	noaht@acme.magic.com looks like a mail address. Would you like to write a message, save it on a name card, or just edit the text you touched? [to:] [write] [save] [edit]
	When creating a name to put on the new name card, Magic Cap uses the text to the left of the underline (if present) to be the given name and the text to the right of the underline to be the surname. Otherwise, it uses the entire user name as the given name. The Name window opens automatically for editing.
Internet web addresses (URLs)	Offers to link to the web page that this URL represents, create a new name card if there is not one already in the Name card file, or edit the text.
	http:/www.genmagic.com looks like a web link. Would you like to show the web page, save it on a name card, or just edit the text you touched? [link] [save] [edit]
	Touch *link* to go to the web page, touch *save* to create a new name card, or touch *edit* to open the Keyboard and edit the text you touched.
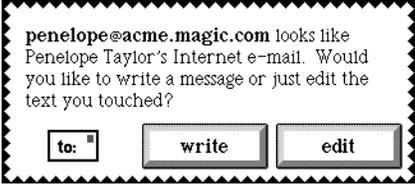
Type of text	Action offered
telephone numbers	Offers to dial the telephone number or edit the text.
	415 555-8888 looks like Kevin F. Letterman's home phone number. Would you like to call the number or just edit the text you touched? [call] [edit]
	If there is not a name card in the Name card file with this telephone number, the software gives the additional option of creating a new name card that contains the telephone number.
	408 666-7777 looks like a phone number. Would you like to call the number, save it on a name card, or just edit the text you touched? [call] [save] [edit]
	Note that a telephone number must be at least 7 digits in order for hot text to recognize it as a telephone number.
names in the Name card file	Offers to open the Contact window in which you can call, compose a message, or look at the person's name card, or you can edit the text.
	David Henry looks like a person's name. Would you like to contact the person or just edit the text you touched? [contact] [edit]
dates (of the following formats) "today" "tomorrow" "yesterday" "February" "February 1997" "February 2" "2/22/87"	Offers to go to the date in the Datebook or edit the text.
	tomorrow looks like a date. Would you like to see any appointments for that date or just edit the text you touched? [datebook] [edit]

To temporarily disable hot text, hold down the *option* key when touching text that Magic Cap would normally recognize. The hot text feature can be disabled using the checkbox on the Controls page of the Typing & Text book in the Library.

Japanese Magic Cap: Japanese support of hot text

Magic Cap Japanese recognizes e-mail and web addresses only. The Japanese version does not recognize phone numbers, dates or names.

Busy indicator

- When the Magic Cap software is busy for a moment, a spinning Magic Cap hat appears at the last touch point.

Top and bottom of the screen

This section describes the items that are always visible at the top and the bottom of the screen.

Top of the screen

| ⑦ Desk | Friday, September 27, 1996 | ☞ Hallway |
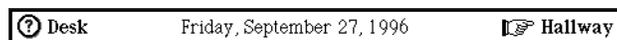
The top of the screen provides users with an indication of where they are, a means for getting information about the current scene, and a quick way to get to a related scene, such as the last scene visited or the scene that contains the current place.

Japanese Magic Cap: Top of screen

In Japanese Magic Cap, the top of the screen looks like this:

| ⑦ デスク | 1998年6月25日 木曜日 午後10:59 | ☞ 廊下 |
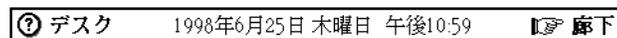
- The left edge shows the name of the current scene. If help information is available, a circled ? appears to the left of the scene name.

- These items appear if the corresponding check box in the general controls is set: battery level, today's date, current time.

- If the battery level is displayed, touch the *battery* to see the battery information window.

- Arrows appear at the top of the screen when the current scene is a collection of items, such as the name cards or the in box index. These arrows allow navigation from card to card.

- Images appear at the top of the screen representing ongoing announcements, such as mail being sent or a low battery.

- Items in packages or on storage cards display a package or storage card image at the top of the screen. Touch this image to copy the item into main memory after a confirmation dialog.

Information

- If the circled ? is showing at the top left edge, press the circled ? or scene name to see an information window that describes the scene.

Step back

- Touch the *scene name* or the *pointing hand* at the top right edge to go to that scene.

- *Option*-touch the *scene name* or the *pointing hand* to see a list of scenes recently visited. Touch a scene's name in the list to go there.

Bottom of the screen

The bottom of the screen provides functions that are useful everywhere in the MagicþCap software.

The Desk image at the bottom of the screen always takes the user to the Desk. *Option*-touching the *Desk* from any scene other than the Desk scene opens the Favorite Places window in which you can add a shortcut to the current place. When at the Desk scene, just touch the *Desk* image to open the Favorite Places window.

The Stamper provides access to the Magic Cap software's endless supply of stamps, coupons, and construction mode materials. It usually appears as a Stamper. If construction mode is turned on, its image changes to a Magic hat.

Japanese Magic Cap: New Stamper image

Japanese Magic Cap uses a new Stamper image.

The Magic lamp opens a window that gives access to various commands and rules. Some commands and rules are available everywhere; scenes can add their own commands and rules to the Magic lamp.

The Tote bag provides a holding area for items. The user can drop items into the Tote bag, then remove or copy the items. Because the Tote bag is always available, it's especially useful for moving items between scenes.

Users can use the Tool holder to choose various tools that modify the effect of touching the screen. For example, the pencil tools allow the user to write notes and draw pictures, the text tools create text fields on the screen, and the copy tool makes duplicates of viewable objects.

The Magic Cap software includes an on-screen picture of a keyboard that can be used for typing text. Users can enter typed text by touching the keys on this Keyboard. The Keyboard usually appears automatically when Magic Cap expects typed text from the user.

The Trash truck provides a way for users to get rid of items they no longer want. Putting items in the Trash truck and emptying it removes the items and frees memory in the communicator.

See the Windows section of this document for more information on the windows opened by the Stamper/Magic hat, Magic lamp, Tote bag, Tool holder, Keyboard, and Trash truck.

• These items are at the bottom of the screen: Desk, Stamper/Magic hat, Magic lamp, Tote bag, Tool holder, Keyboard, Trash truck.

Desk

• Touch the *Desk* button to go to the Desk.

• *Option*-touch the *Desk* image from anywhere (or just touch the *Desk* if you are in the Desk scene) to open the Favorite Places window.

Keyboard

• Touch the *Keyboard* to show the on-screen keyboard. If there's a typing area on the screen, a typing point is placed after all the text in that area.

• *Option*-touch the *Keyboard* to show the extended keyboard with label maker.

Japanese Magic Cap: Software keyboard

In Japanese Magic Cap, there are additional keyboards. These keyboards allow input of Japanese characters.

Magic lamp

• Touch the *Magic lamp* to show or close its window.

• *Option*-touch the *Magic lamp* to show or close the Quick controls window. In the Quick controls window, use the slider to set the speaker volume or touch the *controls* image to go there.
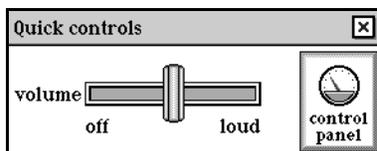
Stamper/Magic hat

This item changes appearance and function depending on whether construction mode is turned on.

- Construction mode turned off: appears as a Stamper and opens the Stamps window when touched.

- Construction mode turned on: appears as a Magic hat and opens the Magic hat window when touched, with access to the following: stamps, components, colors, sounds, borders, text styles, shadows, line styles/extras.

- *Option*-touch the *Stamper/Magic hat* to open to the page that was visible when the Stamper/Magic hat window was last closed.

Tool holder

- Touch the *Tool holder* to open or close the tools window.

- *Option*-touch the *Tool holder* to see the tool set that was visible the last time the tools window was open.

- Tool holder image changes to show the currently selected tool.

Tote bag

- Touch the *Tote bag* to open or close its window.

- Slide items to drop them into the Tote bag.

- Slide from the Tote bag to remove the last item added to the Tote bag.

- *Option*-slide from the Tote bag image to slide a copy of the last item added to the Tote bag.

- Tote bag image changes to show whether Tote bag is empty or contains items.

Trash truck

- Touch the *Trash truck* to see its window and all items inside.

- Slide items to the Trash truck to drop them in.

- Slide out of the Trash truck to pull out the last item thrown away.

- Trash truck image changes to show whether Trash truck is empty or contains items.

- *Option*-touch *Trash truck* to empty the Trash truck, which removes the items from memory.

- As items are added to the Trash truck, older items are removed according to a rule. See the Trash truck window's section for more information.

6

Personal information management features

This section describes in detail the personal information management (PIM) features for Magic Cap 3.1 (Rosemary), namely scenes and windows. These descriptions are ordered alphabetically, and the information is presented as follows:

- **Actions** lists the various actions the user can invoke from the scene or window.

- **Commands in the Magic lamp** lists the commands available to the user from the scene or window.

- **Rules** lists the rules available in the Magic lamp that further control actions invoked from the scene or window.

- **Customizing** lists ways that a scene or window can be customized from construction mode.

For information about the communications-related features of the Magic Cap software, see "Internet features," on page 203.

Scenes

The various scenes in the Magic Cap software are what users navigate through to look at information and perform actions. The three main scenes in the software—the Desk, Hallway, and Downtown—are modeled after places and objects in the

physical world. Within these three main scenes users will see other scenes when they touch certain objects. The Library scene appears when the Library door in the Hallway is touched, for example. These are the scenes in the Magic Cap software:

Desk	Hallway	Downtown
Calculator	Library book	Internet Center Internet provider: services Internet provider: connections Internet provider: locations
Clock display world set time set date	Controls general screen sound power privacy signature	
Datebook today week month year appointment	Storeroom memory view stored information package	
File cabinet folder sorting stamps	Game room Clock (same as from Desk)	
In box mailbox report tracking reports	Credits	
Name card file name card index card		
Notebook notebook page index		
Out box tracking reports		
Phone keypad names log services location		
Message show letter show envelope		
Web browser		

Each scene may have its own commands and rules in the Magic lamp and stamps in the Stamper. The scenes in the Magic Cap software are described below.

Calculator
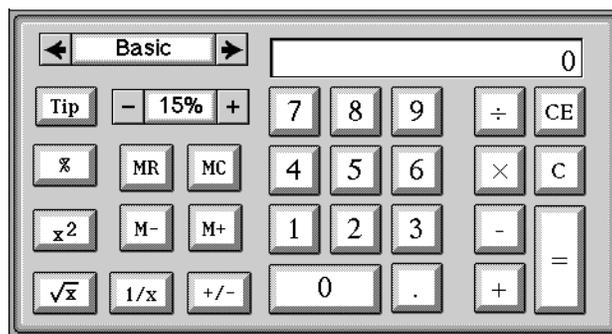
A calculator is provided to replace the old-fashioned kind. The calculator includes scientific functions, a paper tape, and even a tip computer.

Actions from the Calculator

• Use the choice box to select one of the three modes: Basic, Paper Tape, Scientific.

Basic

• Touch the *choice box* to select the tip percentage, then touch the *Tip* button to calculate that percentage of the current value.

• Touch the memory function buttons: MR for memory recall, MC for memory clear, M- to subtract from memory, M+ to add to memory.

• When the value in memory is not zero, an M appears in the calculator display.

• Touch buttons to calculate percentage, square, square root, inverse, or negative of current value.

Paper tape

• Slide the tape up and down to see different parts of it.

• *Option*-slide the paper tape to copy the contents of the paper tape to a coupon, then drop the coupon into a container.

• Touch *Erase* to clear the paper tape.

• The paper tape accumulates information whether it's visible or not.

• The paper tape holds the 100 most recent lines of information.

Scientific

• Touch buttons to calculate sin, cos, tan, x root y, y^x, pi, log, ln, ex of current value.

• Touch *arc* to calculate sin1, cos1, tan1.

• Touch the *switch* to select radians or degrees.

Calculator commands in the Magic lamp

None.

Calculator rules

None.

Customizing the Calculator

None.

Clock
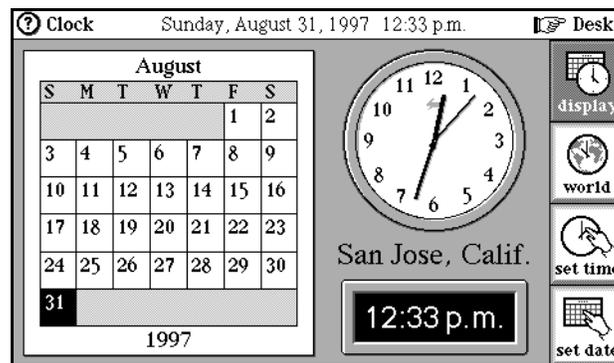
The Clock maintains the time and date settings for the communicator. Clock images change to display the time.

Japanese Magic Cap: Changes to the Clock scene

In Japanese Magic Cap, the Clock scene looks like this:

Actions from the Clock

- Display the time.

- Touch any *Clock* to see the Clock scene.

- Touch *display* to see the Clocks and calendar.

- Touch *world* to see the world clock scene.

- Touch *set time* or touch *Clock* in the Clock and Calendar display page to see the scene where you can set the time.

- Touch *set date* or touch *Calendar* in the Clock and Calendar display page to see the scene where you can set the date.

Setting the time
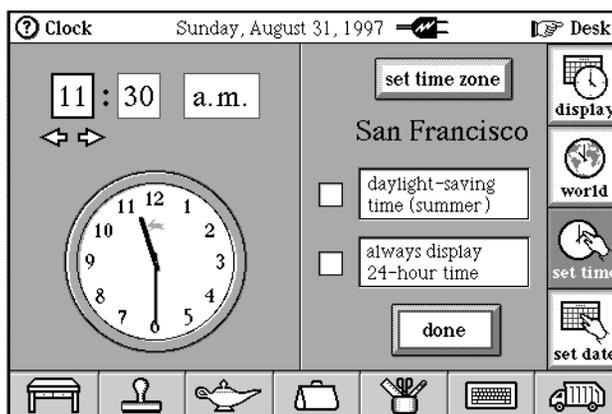
Touch *set time* to see the page for setting the time. Alternatively, touch the Clock in the Clock and Calendar display page; the *set time* button flashes a couple of times and then the page for setting the time appears.

Japanese Magic Cap: Set time scene

In Japanese Magic Cap, the scene you see when you set the time looks like this:
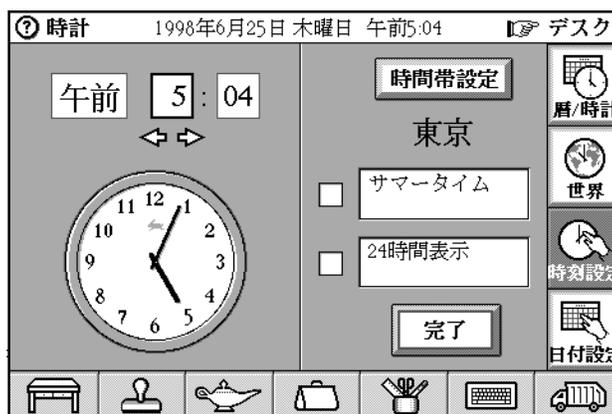
- Slide the analog Clock's hands to set the time.

- Touch the *hour* or *minutes* to select that box, then use the arrows to set the time.

- Touch *a.m.* or *p.m.* to switch from one to the other.

- Touch *set time zone* to choose a city in your time zone. The Clock time is adjusted according to the time zone.

- Touch the *check box* if the city is currently observing daylight saving time.

Japanese Magic Cap: City names

All city names that appear in the city picker windows have been translated into Japanese and are represented in Katakana (for non-Chinese/Japanese/Korean cities) or Kanji (for CJK cities). "Pusan" (釜山) was added to the list. Tokyo and Osaka are the two Japanese cities that appear in the list. City names are sorted by the Japanese reading. The city picker window looks like this:
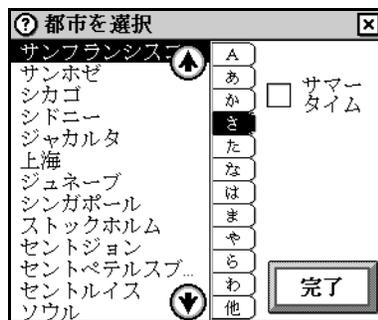
Japanese Magic Cap: Daylight saving time, Set time scene

"Summer Time" in Katakana サマータイム" is used instead of "daylight saving time."

- Appointments are entered into the Datebook to automatically turn daylight savings on at 2:00 a.m. on the last Sunday in April and off at 2:00 a.m. on the last Sunday in October.

- Touch the *check box* to always display 24-hour time in digital Clocks.

- Touch *done* to return to the Clock and calendar display.

Setting the date

Touch *set date* from the Clock scene to see the page for setting the date. Alternatively, touch the Calendar in the Clock and Calendar display page; the *set date* button flashes a couple of times and then the page for setting the date appears.

 Japanese Magic Cap: Month and year formats

The month display uses the format
1月、2月、3月、....、10月、11月、12月. instead of January, February, etc.
The year display uses the Gregorian year, 1995年(, for example.

- Touch the *month arrows* to select the month, touch the *year arrows* to set the year, then touch the *day* to set the date.

- *Option*-touch the *year arrows* to move 10 years at a time.

- Touch *done* to return to the Clock and calendar display.

World clock
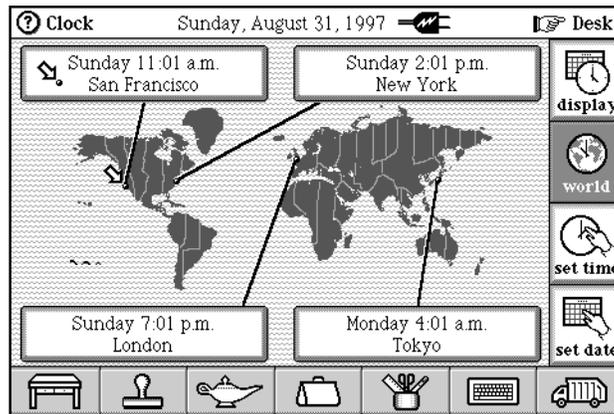
Touch *world* from the Clock scene to see the world clock.

Japanese Magic Cap: World clock scene

In Japanese Magic Cap, the world map shown in the World clock scene is Pacific centered:
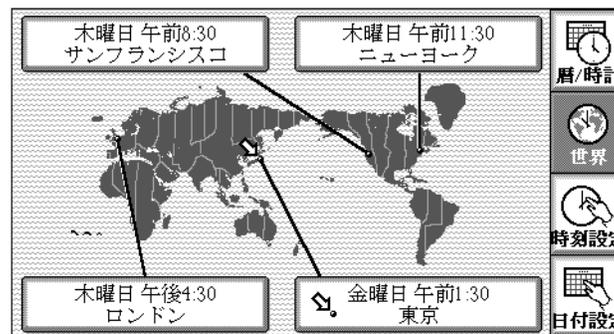
The day and time displayed in the city boxes uses the format 木曜日午後12：47F. All city names have been translated into Japanese and are represented in Katakana (for non-Chinese/Japanese/Korean cities) or Kanji (for CJK cities).

• An arrow points to the current city on the map and appears in the appropriate city box.

• *Option*-slide on the map to pick the city nearest where you pressed and put it in a city box.

• Touch a *city box* to see the Choose a city window.
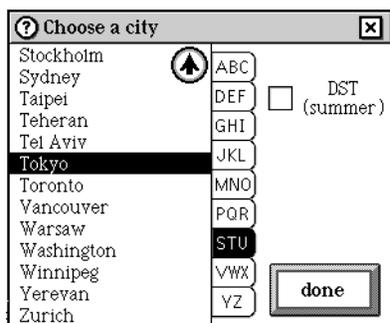
• Select a city for that box and select its Daylight Saving Time setting.

Japanese Magic Cap: Daylight saving time, World clock

"Summer Time" in Katakana サマ－タイム" is used instead of "daylight saving time."

• Touch the *letter tabs* and *arrows* to find a city in your time zone.

• To set the local time for the system, touch the *name of a city* in your time zone, then touch *done* to close the City Chooser.

• *Option*-touch a *city box* to set your time zone to that city.

Clock commands in the Magic lamp

None.

Clock rules

None.

Customizing the Clock

None.

Controls
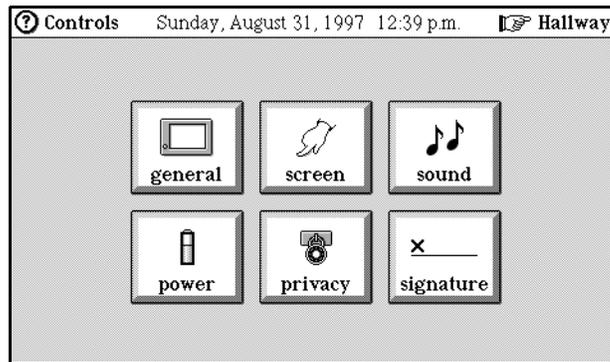
The Controls allow the user to change various settings in the Magic Cap software. There's a wall panel in the Hallway that leads to the Controls.

Japanese Magic Cap: Controls panel

In Japanese Magic Cap, the Controls panel looks like this:
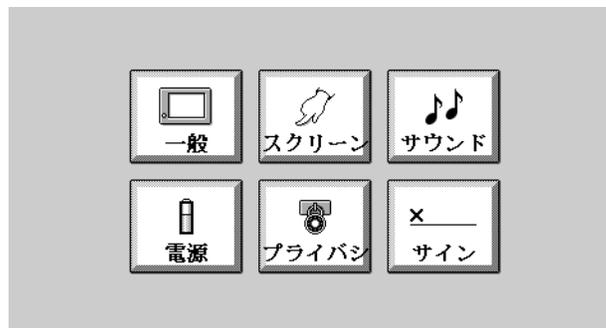
Actions from the Controls

- Touch a button to go to a page of controls. The buttons are: general, screen, sound, power, privacy, signature.

General
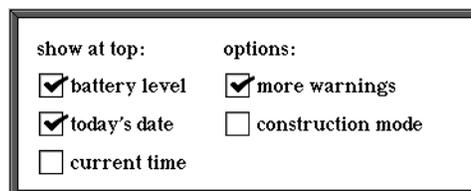
- Use check boxes to select items to display in top bar: battery level, today's date, current time.

- Use construction mode to turn construction mode on and off.

- Use more warnings to select whether confirmation dialogs appear before performing potentially destructive commands.

Power
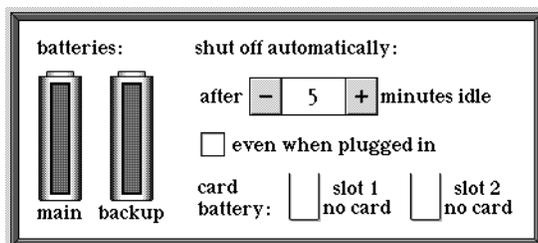
- Battery images show level of main and backup batteries.

- Use after minutes idle and even when plugged in check boxes and meter to select idle time before automatically shutting off.

- Before the communicator automatically shuts off, it may clean up memory by removing objects that are no longer used and posting an announcement about the cleanup process. Touch *option* to interrupt the cleanup process. If the communicator is low on free memory, cleanup will take place the next time the communicator shuts off automatically or the user presses the power key.

- If a battery-powered storage card is inserted, its battery level is displayed.

Privacy
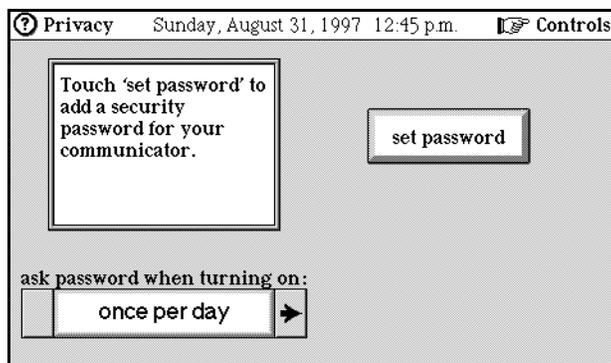
- Touch *set password* to display the keypad for setting the security password. Type the new password on the keypad, touch *enter* and confirm it by typing it again.

- Use ask password when turning on choice box to set the frequency of the password confirmation request: once per day, once per hour, every time. When the password is requested after the power has been switched on, type the password on the keypad. Entering the wrong password four times causes the communicator to shut off.

- Touch *clear password* to remove the security password. Type the current password and touch *enter* to confirm.

Screen
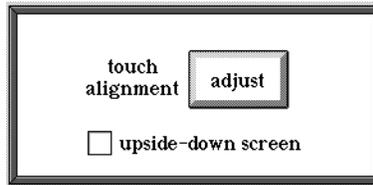
- Touch *adjust* to display the three targets that align the touch screen.

- Touch *upside-down screen* to flip the orientation of the communicator's screen 180 degrees. This feature was added to enable ease of use for left-handed users of a right-handed communicator.

Signature
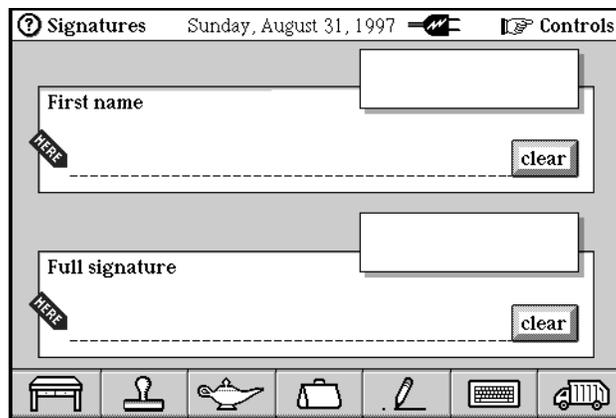
Japanese Magic Cap: Signatures

In Japanese Magic Cap, two signature fields are supported: "Simple signature" and "Full signature".
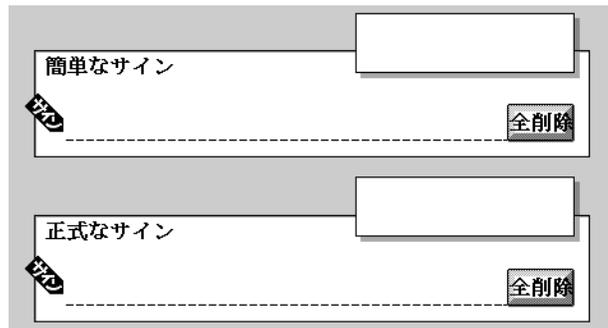
- Sign first name and full signature. The signature appears in the preview window.

- Touch *clear* to sign again.

- *Option*-touch *clear* to erase just the last stroke you made.

- Touch *done* to add the signatures to the Messages drawer of the Stamps window.

Sound
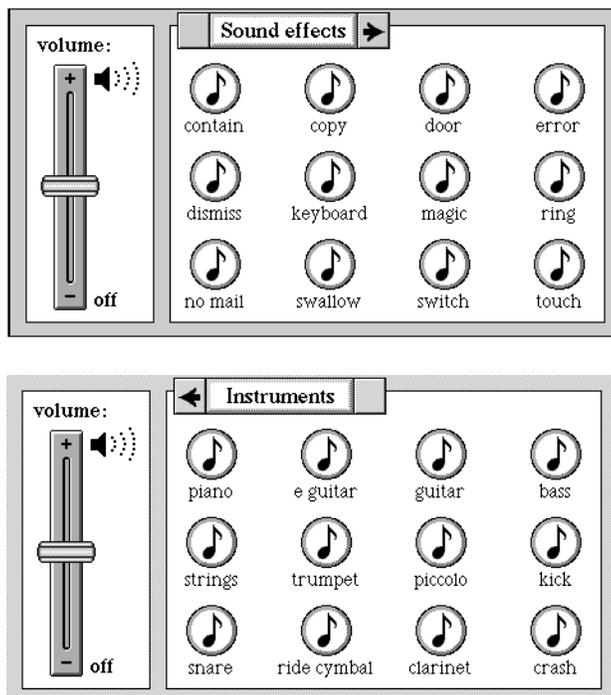
- Use the choice box to select a set of sounds: sound effects, instruments.

- Touch a *sound* to hear it.

- Touch or slide the *volume control* to set the sound volume.

- Drop a song stamp or sound coupon from the Magic hat onto a sound to change the sound.

- Touch *restore default sounds* in the Magic lamp to return sounds to factory settings.

Japanese Magic Cap: **Input button**

Note: The following information has changed and has not been updated in this chapter of the specification. For the latest version, please see "Japanese Feature Enhancements in the November Release."

The input button is used to control the which keyboard is used as the default. The default is originally set for the Kana keyboard.
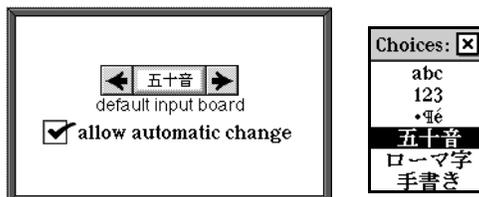
For context sensitive keyboards, Magic Cap will override the default setting.

The allow automatic change setting allows you to control whether the default keyboard type can be changed any time a keyboard type other than the default specified in this window is selected. If this option is switched on and a keyboard type is selected, that keyboard type overrides the current default and becomes the new default. If this option is switched off and another keyboard type is selected, the default is unchanged.

Controls commands in the Magic lamp

None.

Credits

• Touch the Magic Cap *plaque* in the Hallway to see company info.

Datebook
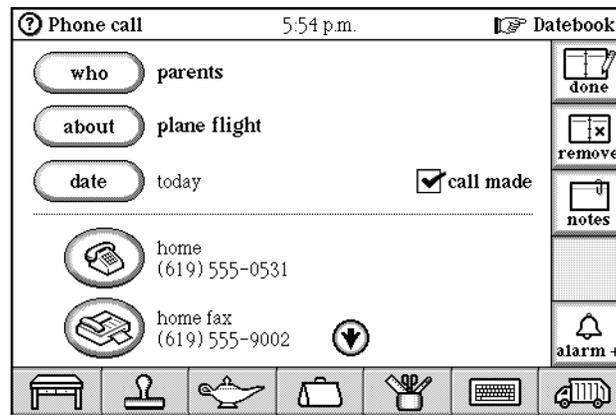
The Datebook provides features for scheduling appointments, tasks, and holidays, as well as other calendar browsing operations.

• The first time you open the Datebook each day, that day's appointments are shown.

• These events are pre-scheduled in the Datebook: New Year's Day, Valentine's Day, First day of Spring, Taxes due, Mother's Day, Father's Day, Independence Day (US), Halloween, First Day of Fall, Thanksgiving, Christmas. For each month, symbols representing a new moon, waxing half-moon, full moon, and waning half-moon appear. Daylight savings time on and off appointments appear for users in the UK, Europe, Ireland, North America.

Japanese Magic Cap: National holidays and other special days

The Japanese national flag icon is used for all national holidays except New Year's Day. These events are pre-scheduled in the Datebook for Japanese Magic Cap.

Date scheduled	Name and symbol used
January 1	New Year Day:
January 17	Seven Grasses:
January 15	Coming of Age Day:
February 11	National Foundation Day:
February 14	Valentine's Day:
March 3	Girls' Day:
3 days before the vernal equinox	Spring Higan:
day of the vernal equinox	Vernal Equinox Day:
April 29	Greenery Day:
May 1	May Day:
May 3	Constitution Memorial Day:
May 4	Legal Holiday:
May 5	Children's Day:

Date scheduled	Name and symbol used
Second Sunday in May	Mother's Day:
Third Sunday in June	Father's Day:
July 7	Star Festival:
July 15	O-Bon:
July 20 (beginning in 1996)	Marine Day:
August 15	Kyuu-bon:
September 15	Respect-for-the-Aged Day:
3 days before the autumnal equinox	Fall Higan:
day of the autumnal equinox	Autumnal Equinox Day:
Full moon in September	Juugoya:
October 10	Sports Day:
November 3	Culture Day:
November 23	Labor Thanksgiving Day:
December 23	The Emperor's Birthday:
December 25	Christmas:

Actions from the Datebook
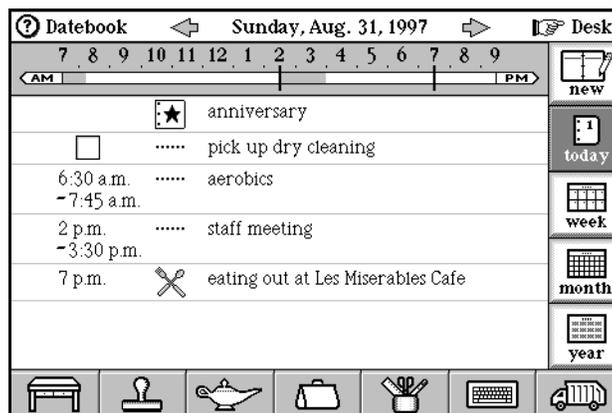
- Touch *today* to see the day view for today.

- Touch an appointment to look at its details.

- Slide an appointment to move it to a container, such as the Tote bag or Trash truck.

- Slide an appointment out of a container, such as the Tote bag, and drop it on a day in the day, week, or month view to move the appointment to that day.

- *Option*-slide an appointment to drag a copy of it to a container.

- Slide an appointment to the new button or to the Choose an appointment window to make that appointment a choice whenever a new appointment is created.

- Touch either end of the schedule bar to show one hour more at that end of the bar.

- Touch *week* to see the week view (Sunday through Sunday).

- In week view, touch a day to see that day's appointments.

- Touch *month* to see the month view.
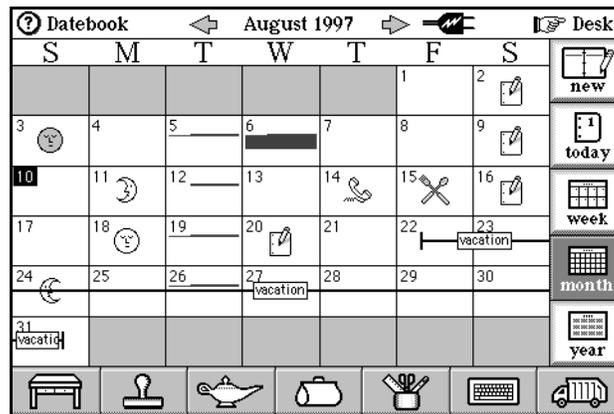
- In month view, touch a day to see that day's appointments.

- Touch *year* to see the year view.
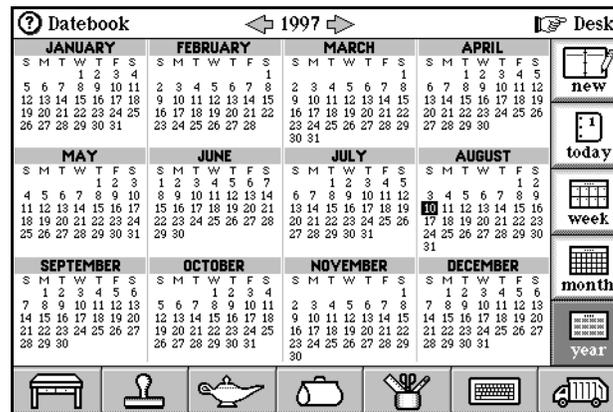
- Touch an *arrow* to see the next or previous day, week, month, or year.

- *Option*-touch an *arrow* to move farther in that direction: a week in day view, 2 weeks in week view, a year in month view, 10 years in year view.

- Touch *date* to open the Choose a date window and set the appointment's date.

See "Date chooser windows" on page 145.

- Touch *time* to open the start/end Time Chooser to set the appointment's time.

- Touch in the *schedule bar* to set the appointment's time.

- Touch or slide in the schedule bar to change the appointment's start time or end time, whichever is closer to the touch location.

- Touch in the *description box* to type the appointment's description, or touch *what* to select a description from the Choose a description window. In the Choose a description window, touch *remove* to remove a description from the list, or touch *new* to add a description to the list.

Japanese Magic Cap: Sorting of appointment descriptions

In Japanese Magic Cap, new appointment descriptions are not sorted as they are in the reference version of Magic Cap 3.1 (Rosemary). Therefore, the tabs are removed in the Choose a description window and any new descriptions are appended to the end of the list.
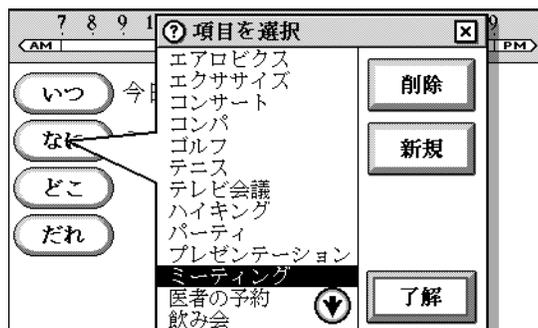
- Touch *done* to save the appointment and return to the day view.

- Touch *remove* to remove the appointment (after confirmation).

- *Option*-touch *remove* to delete the appointment without seeing the confirmation window (doesn't work for repeating appointments).

- If the appointment is a repeating appointment, touch *delete all* in the Delete options window to delete all appointments in the series, or touch *delete one* to delete the current occurrence of the appointment.
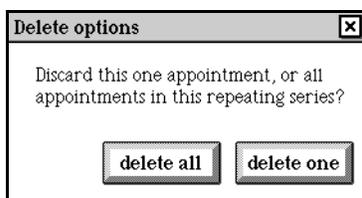
- Touch *notes* to open the notes window and select the pencil tool.

- Touch *repeat* to open the Repeat options window. The repeat options are: no repeat, every day, every weekday, repeat T/TH, repeat M/W/F, weekly, biweekly, monthly by date, monthly by day, yearly by date, yearly by day.
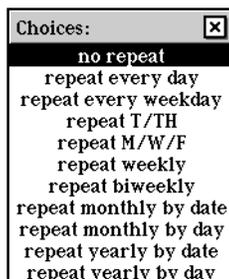
Japanese Magic Cap: Repeat button

In Japanese Magic Cap, the repeat button was localized; it looks like this:

- The repeat options for special days are: no repeat, repeat yearly by date, repeat yearly by day.

- If an instance of a repeating appointment is modified, only that appointment is changed. The changed appointment is called an exception.

- Only certain elements of exceptions can be changed. These are date, time, duration, location, participants.

- Touch *from* and *until* buttons to open the Date chooser to set the start and end of the repeating appointment.

- Touch *alarm +* or touch in the *left column* of an appointment listed in the day view to open the Alarm and other details window. Use the window to set alarm (none, at time of event, 5 minutes early, 15 minutes early, 30 minutes early, 1 hour early, 1 day early, 1 week early), priority (low, normal, high), and status (confirmed, tentative).
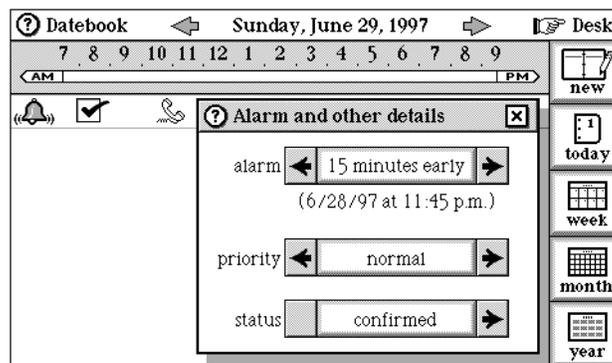
- Change the date of an appointment by editing it or by sliding it to the Tote bag, going to another day's view, then sliding it out of the Tote bag.

- Touch an *appointment* to open it for editing. The kinds of editors are: general appointment, simple appointment, special day, multi-day, to do, birthday, phone call.

Schedule an appointment

- Touch *new* to open the appointment type window and then touch one of the appointment images in the Choose an appointment window. Appointment types

---

are: simple, meeting, eating out, general, to do, phone call, birthday, special day, business trip, vacation, multi-day.
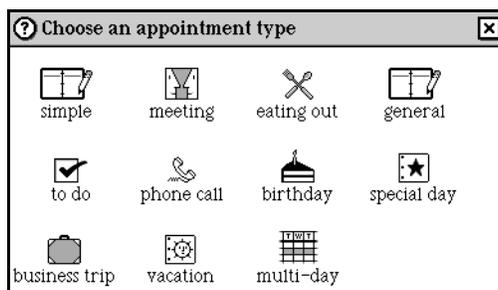
Japanese Magic Cap: Localized appointment types

In Japanese Magic Cap, the labels for appointment types are localized, and these images are localized: special day, vacation, multi-day.
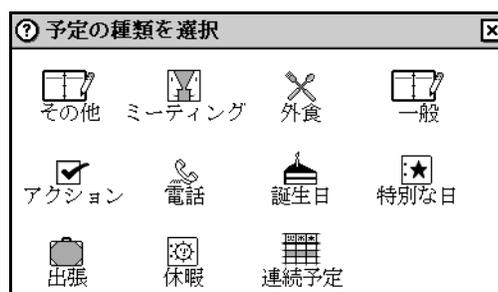
- Touch the *schedule bar* to create a simple appointment starting at that time. The Keyboard automatically opens for typing the appointment's description.

- Touch and slide on the schedule bar to create a simple appointment with that starting and ending time. The Keyboard automatically opens for typing the appointment's description.

- Touch the *Keyboard* and type text to enter a to do item.

- Touch the *Keyboard* and type a time, then the description to create a simple appointment at that time.

Appointment types

Appointment types are: simple, meeting, eating out, general, to do, phone call, birthday, special day, business trip, vacation, multi-day.

Birthday appointment
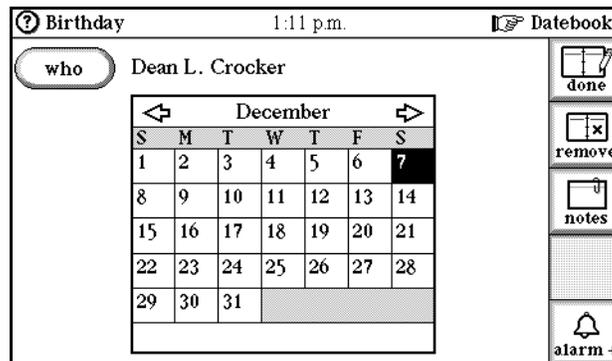
- Set the date and name.

Business trip appointment

- Set the start date, end date, and description.

Eating out appointment

- Added an *eat out* appointment type. Eating out appointments are created in the same way as *meeting* and *general* appointments.

eating out

General appointment
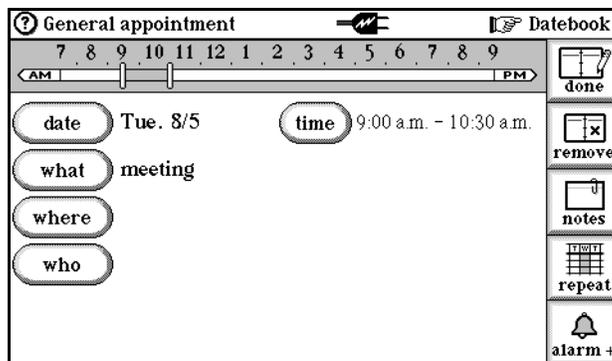
- Set the appointment's date, time, description, location, participants.

- After choosing the participants, an invite button appears. Touch *invite*; a confirmation dialog appears.

- In the confirmation dialog, touch *yes.* A new meeting request message appears in the message scene.

- The meeting request message includes text about the meeting, buttons to respond yes or no, and a copy of the meeting itself. Touch *send* to send the card to the invitees.

- When receiving a meeting request message, touch *yes* to add the appointment to the Datebook, or no to reject the appointment. Touching either button will create and send a response message to the meeting requester.

Meeting appointment

Meeting appointments use the same buttons as general appointments but they differ in that they use the meeting icon.

Multi-day appointment

• Set the start date, end date, and description.

Phone call appointment

• Added a *phone call* appointment type.

  To create a *phone call* appointment, choose a name, subject, and date. The telephone numbers listed on the name card of the person to call are shown on the appointment so you can place the call by touching the *appointment* in your Datebook.

phone call

Simple appointment

• Set the appointment's date, time, and description.

Special day appointment

- Set the date and description.

To do appointment

- Set the task's start date, deadline, description, and completion status.

Vacation appointment

- Set the start date, end date, and description.

Datebook commands in the Magic lamp

None.

Datebook rules

-

> ✔ 1. Use the <u>Alarm</u> sound for appointment reminder alarms.

-

> ✔ 2. Display an announcement for appointment reminder alarms.

-

> ✔ 3. Suggest discarding appointments more than <u>a week</u> old, unless they are marked with a save stamp.

-

> ✔ 4. Show moon phases in monthly calendar.

Customizing the Datebook

- Drop a stamp on an appointment in the day view to change its image to the stamp's image. Drop this new appointment on the new button to add it as an appointment type.

- Drop a song stamp or a recorded sound stamp on an appointment that's open for editing. The stamp's sound will be played at the appointed time.

- Drop a save stamp on an appointment to prevent it from being automatically deleted in a low memory situation. This overrides the Datebook's automatic deletion rule.

Desk

The Desk provides a convenient place to get to the main user features of the MagicþCap software. From the Desk users can create messages, go to the In box and Out box, open the Datebook, Notebook, and Name card file, and perform most other important functions.

Japanese Magic Cap: Changes to objects on Desk

The Japanese Magic Cap Desk scene looks like this:

Actions from the Desk

The following actions can be performed from the Desk scene. For information on features of a particular object on the Desk, refer to its section of this specification. Some actions can be invoked using an object without entering its scene—dragging an item into the Out box, for example. These actions are included below.

Clock

• The Clock displays the current time

• Touch the *Clock* to see its scene.

Datebook

• Touch the *Datebook* to see its scene.

• Slide an appointment's image (one received with a message, for example) onto the Datebook to add it to the Datebook.

Desk accessories drawer

• Touch the *Desk accessories drawer* to see its window.

• The image of the Desk accessories drawer changes when it is touched or when an item is dropped into it.

• Slide an item into the Desk accessories drawer to drop it in.

Favorite places

- *Option*-touch the *Desk* image from anywhere (or just touch the *Desk* if you are in the Desk scene) to open the Favorite Places window.
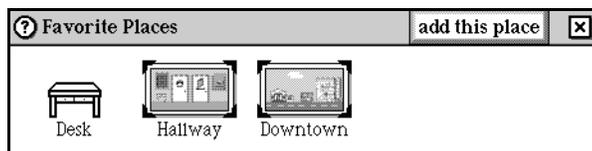
- The first time you open the Favorite Places window, the help text window appears.
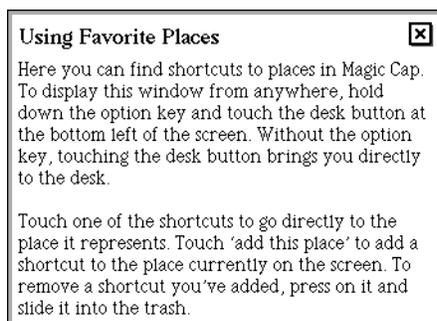
- In the Favorite Places window you'll see snapshots and images that are shortcuts to other places and scenes in Magic Cap.

- Touch an *image* in the Favorite Places window to go directly to the place or scene it represents.

- Touch the *add this place* button in the title bar of the Favorite Places window to add a shortcut to the current place. The button will flash if a shortcut to the current place exists already.

- To remove a shortcut from the Favorite Places window, slide it into the Trash truck.

File cabinet

- Touch the *File cabinet* to see its scene.

- Slide a minicard (name card, message, notebook page) onto the File cabinet to file it.

In box

Name card file

- Touch the *Name card file* to see its scene.

- Slide a minicard of a name card onto the Name card file to add it to the Name card file.

 Japanese Magic Cap: Changes to Name card file image

Japanese Magic Cap uses this image for the Name card file:

New message stationery

- The new message image on the Desk shows the default stationery type, which will be used for new messages.

- Touch the *new message stationery* to see its scene.

- To change the default stationery, slide the desired new default from the Stationery drawer, and drop it on the new message image while holding down the Option key. Or in Magic Cap version 1.5, use the choices button.

Notebook

- Touch the *Notebook* to see its scene.

- Slide a minicard of a notebook page onto the Notebook to add it to the Notebook.

 Japanese Magic Cap: Changes to Notebook image

Japanese Magic Cap uses this image for the Notebook:

Out box

- The Out box changes to show whether it contains items. There are different images for 0, 1, 2, and 3 or more items. The number of items is also displayed on the image.

- Touch the *Out box* to see its scene.

- Slide minicards (of addressed messages) from the Desk into the Out box to send them (according to Out box rules)

- Slide a minicard out of the Out box so that it is not sent when connecting to a service.

- *Option*-touch the *Out box* to connect to the service and send mail.

Japanese Magic Cap: Changes to the Out box image

Japanese Magic Cap uses this image for the Out box:

Phone

- Touch the *Phone* to see its scene.

Stationery drawer

- Touch the *Stationery drawer* to see its window.

- The image of the Stationery drawer changes when it is touched or when an item is dropped into it.

- Hold down *option* and slide a minicard into the Stationery drawer. It will be converted to stationery and added to the drawer.

- Slide out of the Stationery drawer to pull out the last item dropped in. Items can't be pulled out if they're set to "can't move", as are all built-in stationery items.

Desk Commands in the Magic lamp

- With construction mode switched on, touch *tidy up* to return all Desk items to their original locations if you previously moved them.

Desk Rules

None.

Customizing the Desk

- Drop a color coupon to color the wall behind the Desk.

Downtown
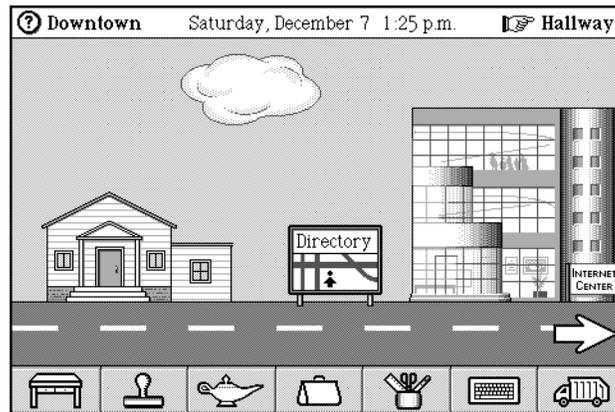
Japanese Magic Cap: Downtown

In Japanese Magic Cap, the buildings and objects Downtown are localized.

The Magic Cap software shows buildings Downtown to represent services available outside the communicator.

Actions from Downtown

- Touch on *arrows* to move down the street.

- *Option*-touch an *arrow* to move to that end of the street.

- Slide between the arrows to move down the street.

- These buildings are Downtown: Home, the Internet Center, and any other software packages built in to ROM or added to the communicator.

- Touch a *building* to go inside.

- The street includes directories at each end that list all buildings on the street in alphabetical order. Touch a *building name* to go inside that building.

Japanese Magic Cap: Directories Downtown

In Japanese Magic Cap, the directories Downtown look like this:

案 内

- *Option*-touch a *building name* in the directory to go the entrance for that building without actually entering the building.

- The Downtown scene changes to accommodate new buildings, as when new packages are installed.

- The street stretches to add buildings on the far right end.

Downtown commands in the Magic lamp

None.

Downtown rules

None.

Customizing Downtown

- Drop a color coupon on the Downtown sky to change its color to that of the coupon.

File cabinet
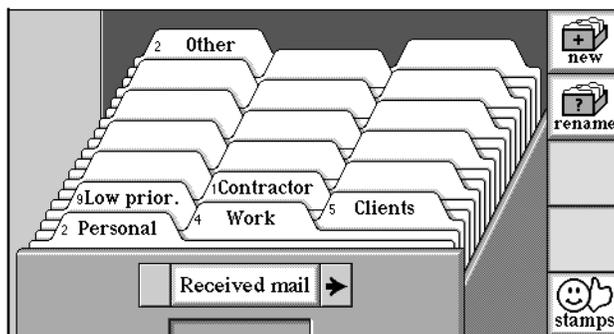
The File cabinet can be used to store messages, name cards, notebook pages and other items that can be filed. The File cabinet comes with two drawers: Received mail and Sent mail. Additional drawers can be easily added and deleted and all drawers can be renamed. Drawers come with 19 file folders in which to store items. Sorting criteria can be set so that messages filed using the file all button from the In box are sorted into the designated folders.

Actions from the File cabinet

- Use the drawer choice box to select the desired File cabinet drawer.

- Touch *stamps* to see the stamps that can be used for sorting. Slide a stamp to the Trash truck to make it unusable for sorting mail in folders, or add new stamps to be able to use them for sorting.

Japanese Magic Cap: File cabinet sorting stamps

The sorting stamps available in the File cabinet are localized for Japanese Magic Cap.

ここにあるスタンプは分類に使用します。スタンプの引き出しから追加、削除することもできます。

ごめんなさい　DRAFT　極　秘

至　急　PArTゃ!

急いでぇ!　返事乞う

保存　★

支払済　取り消し

☺

🎄

- Touch a *folder tab* to open that folder and see the folder index.

- Touch an *unnamed folder tab*. The folder opens, the on-screen Keyboard appears, and the text typing point is positioned in the folder tab. Type a name for the folder.

- Slide an item from a container (such as the Tote bag) and drop it into a folder tab to file it there.

- Slide out of a folder tab to pull out the last item filed there.

- *Option*-slide a folder tab to drag the entire folder and its contents.

- Slide an empty folder's tab to drag the entire folder.

- Touch *new* to create a new File cabinet drawer and open the Keyboard and name window.

- Touch *discard* (not available for the built-in drawers) to open a confirmation window with yes and no buttons.

- Touch *yes* to delete the drawer and its contents.

- Touch *no* to close the confirmation window without deleting the drawer.

- *Option*-touch *discard* to delete the drawer without seeing the confirmation window.

Folder scene
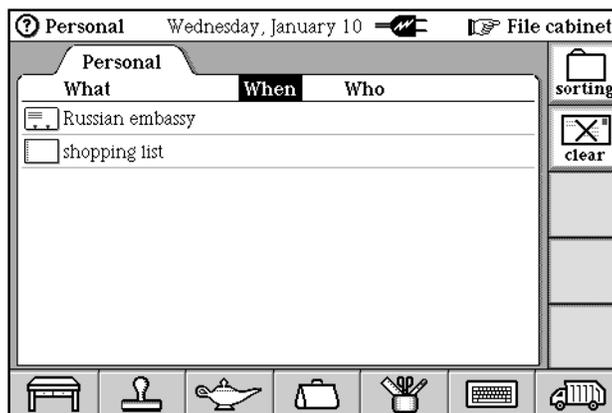
- For each item in the folder, the index shows its name and image (postcard [opened and never opened], letter [opened and never opened], or folder). For postcards and letters, the index also shows subject, date, and author.

- Touch any of the *index column headings* to sort the index according to that heading: What (subject), When (date), Who (author).

- Touch the blank space at the left edge of the headings line to sort the list according to the items' images.

- When sorting by sender, people are sorted according to their last name, then first name; companies and services are sorted according to their full name.

- Touch an item to open that item.

- Slide an item's image to drop the item in a container, such as a folder, the Tote bag, or the Trash truck.

- Touch the *folder's tab* to place the typing point for changing the folder's name.

- If there are items that will be discarded by the File cabinet's automatic discard rule, a confirmation window appears.

- Touch *sorting* to open the Sorting criteria window. In the window, set the folder to accept messages with certain senders or receivers, text, images, or dates.

- Touch *clear* to delete all items in the folder.

File cabinet commands in the Magic lamp

None.

File cabinet rules

1. Suggest discarding cards more than a week old, unless they are marked with a save stamp.

Customizing the File cabinet

• A stamp can be added to the Sorting stamps scene so that it is available to use as a sorting criteria. Stamps can also be removed from the Sorting stamps scene.

Game room
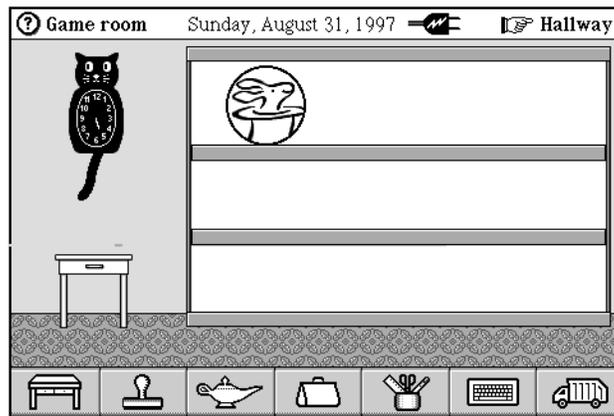
The game room in the Hallway provides an ideal place for entertainment packages. The Game room comes equipped with a coin toss game.

Actions from the Game room

• Touch the *coin* to flip it and get a random result.

• Touch the *Clock* to go to the Clock scene.

Game room commands in the Magic lamp

None.

Game room rules

None.

Customizing the Game room

None.

Hallway
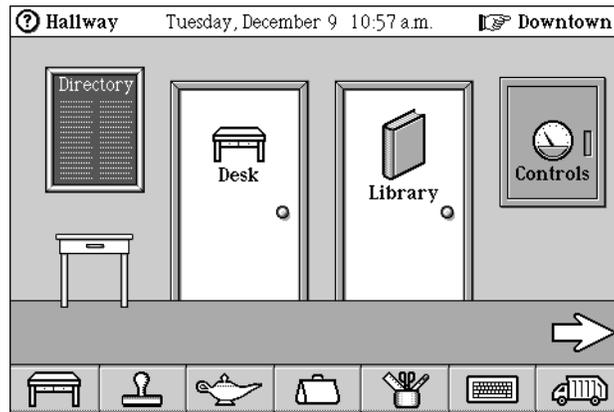
The Magic Cap software shows doors in a hallway to represent rooms inside the communicator.

Japanese Magic Cap: Hallway

In Japanese Magic Cap, the Hallway looks like this:
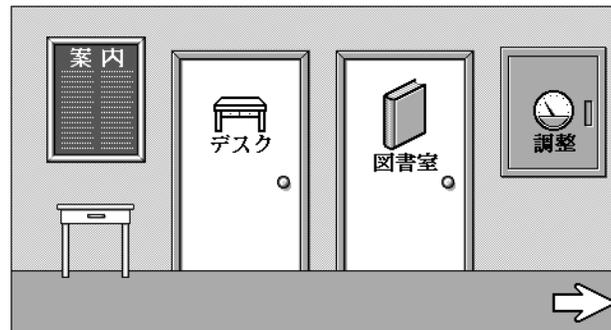
Actions from the Hallway

- Touch on *arrows* to move through the Hallway.

- *Option*-touch an *arrow* to move to that end of the Hallway.

- Slide between the arrows to move down the Hallway.

- The Hallway includes a directory at each end, which lists all doors in the hall in alphabetical order. Touch a *door name* to go to that door and enter it.

Japanese Magic Cap: Directory in Hallway

In Japanese Magic Cap, the directory in the Hallway looks like this:

- *Option*-touch a *door name* in the directory to go to that door without opening it.

- The doors that appear in the Hallway can vary depending on whether construction mode is turned on.

- The Hallway has these doors: Controls, Desk, Game Room, Library, Storeroom.

- The Hallway includes tables with drawers that can contain items.

- Slide a locked padlock from the drawer in the leftmost table in the Hallway or from the Stamper to a door to password-lock the door. Enter and confirm the password. The lock appears on the door.

- Slide an unlocked padlock to a locked door to remove the padlock (after password confirmation).

- The Stamper also contains padlocks as well as critters who like to roam around the Hallway.

- Slide an item to a door to put it in that door's room.

- The Hallway changes to accommodate new doors, as when new packages are installed.

- The Hallway stretches to add doors on the far right end.

- Touch the *picture* on the wall to change it.

Japanese Magic Cap: Painting in Hallway

In Japanese Magic Cap, the Mattisse painting was replaced by an Ukiyoe painting:

- *Option*-touch the *picture* to open the Image Gallery controls which allow you to change the picture displayed, display the name, and change the picture daily.

- Touch the Magic Cap *plaque* in the Hallway to see company info.

Hallway commands in the Magic lamp

None.

Hallway rules

None.

Customizing the Hallway

- Slide and drop an image coupon into the picture on the wall to add it to the gallery. Hold down the option key while dropping to replace the current image.

In box

Internet Center
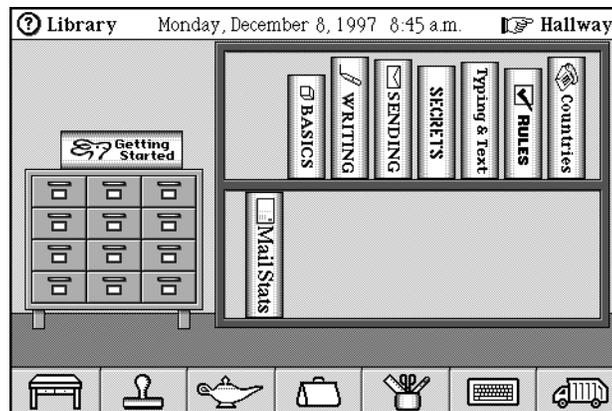
Library

The Library has books to read, including the Getting Started book that trains new users and the Secrets book that reveals expert tips.

Actions from the Library

- These books are in the Library: Getting Started, Basics, Writing, Sending, Secrets, Typing & Text, Rules, Countries, Mail Stats.

- Touch a *book* to open it for reading.

- Touch *page corners* in a book to turn the pages.

- Slide a book from the shelf to the table to move it without opening it. Observe the cool stacking animation.

- Slide a book to move it to a new place on a shelf. Gravity will make it land on the shelf when you release it.

- *Option*-touch a *book* on the table to put it back on its shelf.

- Touch the *card catalog* to open an alphabetical list of the books in the Library. Touch a *book title* to open that book.

Books
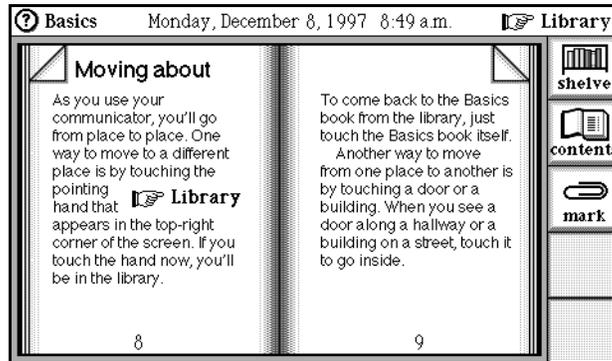
- Touch *shelve* to close the book and put it away.

- Touch *contents* to see the book's contents page.

- Touch an entry on the contents page to see that page.

- Touch *mark* to add or remove a bookmark on the current page.

Countries book

The countries book allows you to change dialing codes for countries built into Magic Cap and lets you add new countries and their dialing codes to the system.
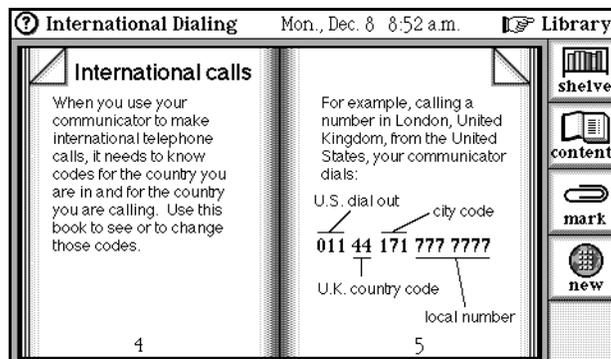
Each country and its country code, dial out code, long distance prefix, and US direct access code are listed in the Countries book. In Magic Cap 1.0, you can't change existing dialing codes or add new countries to the system.

The use of the Countries book is described below.

Adding new countries and their dialing codes

You can add a new entry to the Countries book by touching the *new* button at the right of the scene. A window appears in which you can name the country, and then a page is created in the book for the new country.
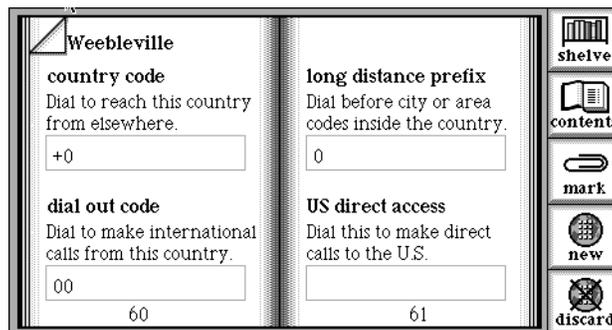
The dialing codes that you enter are used when your communicator dials a number in that country from abroad or dialing abroad from that country. The country pages that you add are also deletable. When you delete a country page, it is deleted immediately and can't be restored. If it isn't currently being used by a phone number or location, it will be garbage-collected.

In Magic Cap 1.0, you can't add new countries to the country choice list.

Editing dialing codes for existing countries
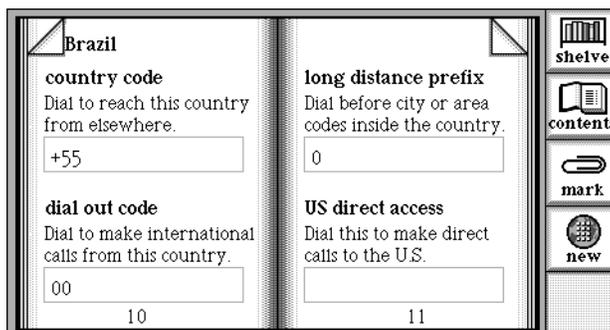
You can edit the country code, dial out code, long distance prefix, and US direct access code for any country listed in the Countries book in the Library. However, you can't delete its page from the book. Only pages that you yourself have created can be deleted from the Countries book.

In Magic Cap 3.1 (Rosemary), three pages were added to the Countries book: China, Korea, and Taiwan.

In Magic Cap 1.0, you have no access to a country's dialing codes. If a country's dialing codes are incorrect in a particular situation (perhaps a hotel requires a certain country code that is not the standard country code) or simply wrong, there's nothing you can do about it.

Getting Started book

- Getting Started provides lessons for new users. It includes these lessons: Getting Started and Personalizing, How to use this book, About the top of the screen, About the bottom of the screen, Using the Keyboard, Set the time and date, Add your name card, Where are you calling from?, Add your signature, Add an internet service provider, Send a message, Phone someone you know, Congratulations.

- Touch the *stop sign* to stop a lesson in progress (after confirmation).

- When a lesson ends, touch the *repeat* button to repeat the lesson.

- The "personalize" lesson forces users to personalize after following the lesson to create their name cards.

Rules book
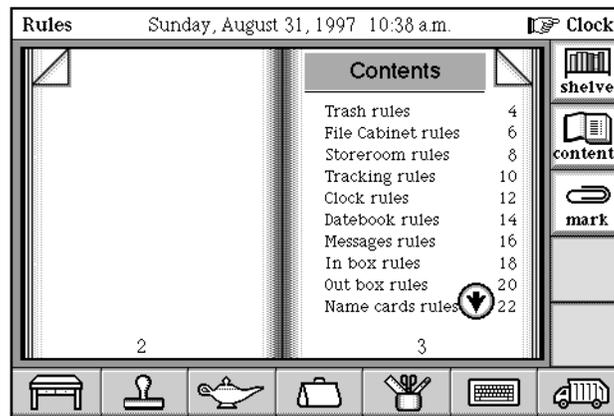
From the Rules Book, you can change most of the rules available in the Magic lamp from various scenes in Magic Cap.

- To go to the rules for a particular scene, touch that scene's entry in the table of contents.

Typing & Text book

- The Typing & Text book (previously named Word Lists) shows the words that will be filled in by automatic completion when the user enters information. The book includes these lists of words: Cities, Company Names, Job Titles, State Names, Country Names, First Names, Last Names, General Words, Abbreviations, Spelling Words.
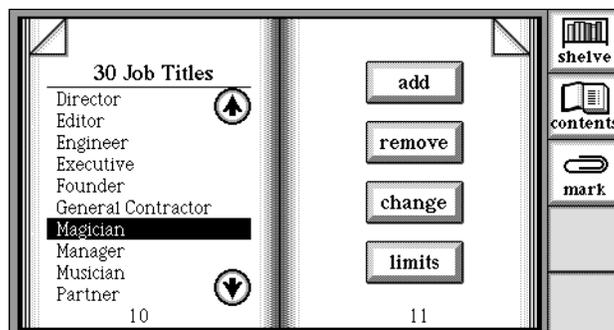
- In each list, touch a word to select it. Touch *remove* to remove the selection. Touch *add* to add a new word. Touch *change* to edit the selection.

- Touch *limit* to limit the number of words in a category or to turn off the feature if you don't want words automatically added to the category.

  To limit the number of words in a category or to turn off the feature if you don't want words automatically added to the category, go to the page for that category and touch *limits*. The Limits window will appear, in which you can set how many entries to keep and whether to automatically add entries. By turning off the ability to accept new entries automatically, you can set up a list that has exactly the entries you desire, and that does not change automatically over time.
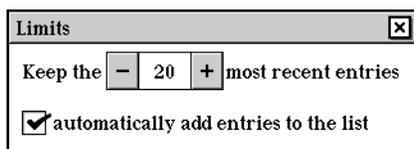
  Each of the auto-completion word lists (the ones in the Typing & Text book, the ones in the Datebook, and the lists of telephone types and address types that are not displayed anywhere) now has a built-in limit of number of words it can hold. When a word is added to one of these lists and the list is already at its limit, the "oldest" word in the list is removed, so the list stays at its limited length. When a word in one of these lists is added, or when an existing word from one of these lists is used, it gets a new time stamp, so that it is now the "newest" item in the list. Thus the list always contains the most recently used entries.

  In 1.0, all entries typed into an auto-completing text field are remembered until you explicitly remove them. In the Datebook, the only way to remove items is by touching *remove* in the window displayed by the what and where buttons. For other word lists, the only way to remove items is by touching the *remove* button on the appropriate page in the Typing & Text book.

- The Typing & Text book also contains controls to enable and disable hot text, word completion, and auto capitalization.
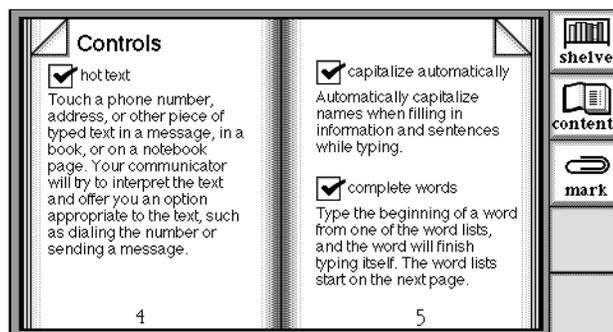
- Touch *hot text* to disable the hot text feature.

- Touch *capitalize automatically* to disable automatic capitalization of proper names you enter in certain text fields and the first letter following a period.

- Touch *complete words* to disable auto-completion of words you type in certain text fields.

Library commands in the Magic lamp

- Touch *tidy up* to return all books to their proper places on the shelf.

Library rules

No loud talking.

Customizing the Library

Slide books around to arrange them on the table and shelves.

Mailbox Report

Messages
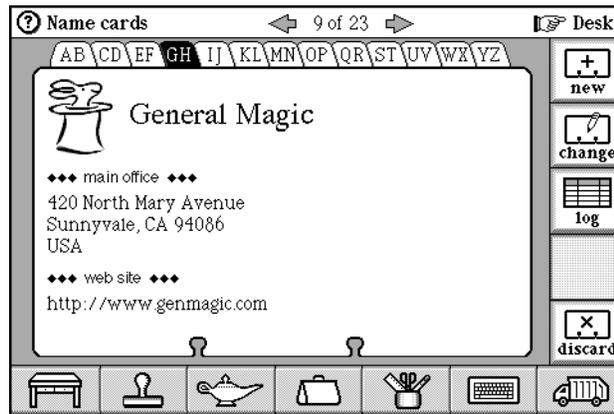
Name cards

Magic Cap keeps a collection of name cards containing information about various entities. Name cards can include addresses, phone numbers, and other information. The user can add stamps representing addresses, phone numbers, and electronic mail services by opening the Stamper.

- Touch the *Name card file* on the Desk to look at the name cards.

- The card that was displayed when the Name cards scene was last opened is displayed.

- The name card shows the name and possibly other information.

- There are various kinds of name cards: person, company, group.

- The name card for the current user says "(you)" after the name.

- Addresses appear in the addresses panel on the left side of the card. Scroll arrows appear in the panel if necessary. Kinds of addresses are: home, work, main office address, other address, electronic mail, web site.

- Phone numbers appear in the phone panel on the right side of the card. Scroll arrows appear in the panel if necessary. Kinds of phone numbers are home, work, car, cellular, pager, home fax, work fax, other fax, service access, other.

- The name cards are alphabetized according to last name and first name for people and full name for companies, and groups.

Japanese Magic Cap: Sorted order of name cards

In Japanese Magic Cap, the Name card scene looks like this:

Kana tabs are supported as shown. Name cards are sorted by the Japanese alphabet (Kana). When the first character of the family name is a non-ASCII character, the name is displayed in "familyName givenName" order. Otherwise, "familyName, givenName" appears in a people picker or "givenName familyName" appears on the name card.

Actions from the name cards

- Touch the *right* or *left arrow* to see the next or previous name card.

- *Option*-touch the *right* or *left arrow* to see the next or previous index card.

- Touch an *index tab* to see the index of cards for that letter pair. Touch a name in the index to see that card.

- *Option*-touch an *index tab* to see the first card of the letter pair's second letter (for example, *Option*-touch the *AB tab* to see the first B card). If the pair's second letter has no cards, the index card for the letter pair appears.

- Touch a phone number to dial that number and open the phone status window.

- Touch an electronic mail address and Magic Cap offers to open a new message addressed to the e-mail address.

- Touch a web address and Magic Cap offers to link to that URL.

- *Option*-slide an address or phone number to drag a copy of that address or phone number.

- Name cards have these buttons: new, change, log, get info (visible only if the user's mail service has directory lookup), discard.

- Name cards for groups also have these buttons: add (member to group), remove (member from group), look up (member's name card). Remove and look up appear only if a member's name is selected. Name cards for groups don't have get info.

Create a new name card

- Touch *new* to begin the new card procedure. In Magic Cap 3.1 (Rosemary), the window in which you could choose the type of name card (person, company, group, or mailing list) was removed. In its place is a check box that allows you to switch between person and company while you are in the process of creating a new name card.

- Group name cards are now created using the "new group" button in the Magic lamp in the Name card scene.

  The mailing list name card type was removed.

- Touch the entry window's closer to stop the new card procedure. The new card will be created with the information that's been entered to that point.

- For person, enter the first and last name. These empty stamps are provided on a card for a new person: work address, home address, work phone, work fax, home phone, Internet e-mail address. Touch one of these and enter the information requested in each window, touching *next* to proceed to the next window. Touch *done* when you reach the last window.

Japanese Magic Cap: New name card window

In Japanese Magic Cap, the window used to enter a name for a name card was simplified into one edit window. The romaji name fields are automatically filled in from the "yomi" when they are empty.
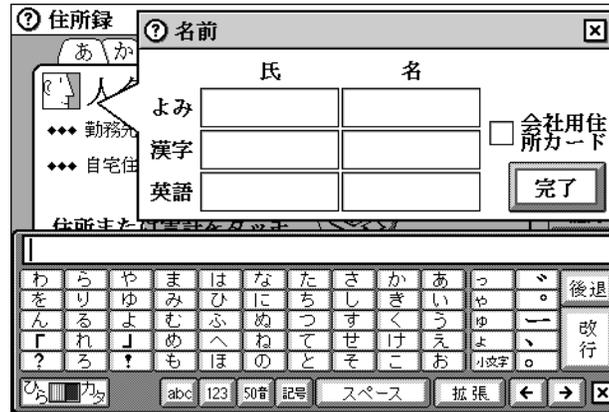
- If a name card with this name already exists, a confirmation window appears giving you the choice to throw away the new name card or keep it along with the existing name card.

- If there is no current user set, creating a new name card sets the current user to the name on the new card (after confirmation). This is also referred to as personalizing.

- Once set, there is no way to reset the current user.

- For group, enter the group name.

- For company, touch the *this is a company* checkbox to switch to a company name card and then enter the company name. Empty stamps for main office address and main office phone are provided.

Japanese Magic Cap: Company name cards

In Japanese Magic Cap, the checkbox used to indicate a company name card is labelled "card for company name."
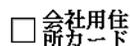
- On new cards for person or company, helpful text appears at the bottom of the card telling how to fill in or add addresses and phones.

- To add an address or phone number, touch the *Stamper* and select the appropriate stamp from a drawer.

- To add the name card to a built-in group, touch the *Stamper* and select the appropriate group's stamp from the Groups drawer. Built-in groups are: co-workers, family, friends. (You can also add members to these groups in the same way as with other groups, by editing the appropriate group's name card.)

Adding address stamps to name cards

- In Magic Cap 3.1 (Rosemary), the first edit step for new addresses is now country. This feature is controlled by a new rule in the Name card file scene. (See page 115.)

- The edit steps for US and Canadian home addresses appear in this order: enter postal address (touch *more lines* if you need more than one line for the street address), city & state, and zip code.

- Entering and editing a home address for all other countries has been simplified to one window.

Japanese Magic Cap: Addresses

In Japanese Magic Cap, window used to enter an address looks like this. In the previous version, it was separated into three fields: prefecture, city, and address.

- For a US or Canadian home address, enter postal address (touch *more lines* if you need more than one line for the street address), city & state, country, and zip code.

- To enter and edit a work address for a country other than the US or Canada, enter the title, company, and then enter the rest of the address in the Address window (touch *more lines* if you need more than one line for the street address).

- For other address, enter the heading for the address, and all other address information.

- The "note" address label lets users add arbitrary information to name cards.

Longer street addresses

- Touch the "more lines" checkbox if you need more than one line for a street address.

Street address   ⊠

Fill in just the street address:

463 Fremont Avenue

☐ more lines   ‹ previous   next ›

Street address   ⊠

463 Fremont Avenue
Suite 10-B

Switch on *more lines* **to add more room for a longer street** → ☑ more lines   ‹ previous   next ›
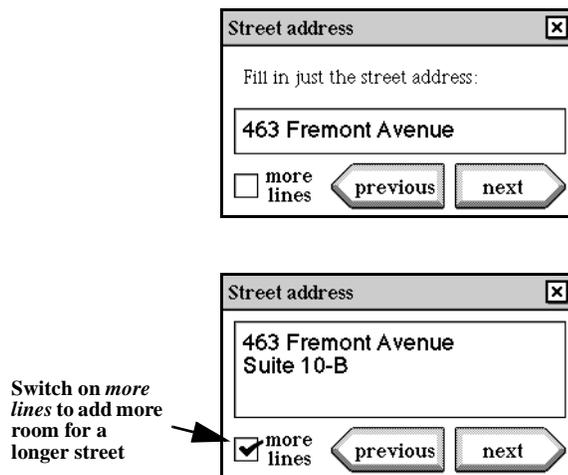
Adding a note address label

📝
note

- The "note" address label is available in the Main drawer of the Stamper.

- Touch the *note* image to open the Note description window and type a name for the note address label.

⑦ Note Description   ⊠

Type the description of the note:

birthday
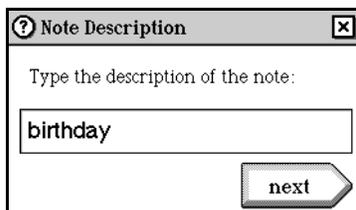
next ›

- Touch *next* in the Note description window to open the Note window and type the note.

⑦ Note   ⊠

4/8/59
likes white chocolate and
Angora

☑ more lines   ‹ previous   done
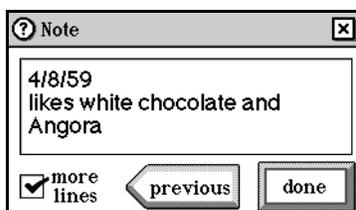
- Touch *more lines* if you want to type more than one line for the note.

Adding phone stamps to name cards

- For home phone, fax numbers, car phone, and cellular phone numbers, enter the country, and phone number.

- For work phone, enter country, phone number, and phone extension, if any.

- For other phone and other fax, enter description, country, and phone number.

- For numeric pager number, enter the country, phone number, and for US and Canadian based numbers, enter the PIN, if any.

- When entering phone numbers, type a letter A through P or R through Y to enter the corresponding digit from a standard telephone.

- Dialing prefixes and country codes are automatically entered.

Adding e-mail stamps to name cards

- To add an electronic mail address, touch the *Stamper*, touch theþ*e-mail drawer*, and then select an electronic mail stamp. Type the information asked for in each window.

- The e-mail drawer is scrollable so that it can contain any number of stamps.

Change a name card

- Touch *change* to put change boxes around name card elements.

- Touch a boxed element to change it.

- Slide a boxed element to the Trash truck to throw it away.

- For elements that require text, open the Keyboard and place the typing point.

- For elements that require numbers, open the Keyboard with numbers selected and place the typing point.

- Entry windows have automatic completion of elements.

- Some entry windows that require text automatically shift the Keyboard to caps for the first character and after typing a space: last name, first name, title, company name, city & state.

- Some entry windows that require text starting with numbers automatically display the number keys for the first character: address, zip code.

- Telephone number fields automatically display the area code last used.

- *Option*-touch an address to edit its heading.

Collecting name cards from incoming messages

In Magic Cap version 1.0, you can find yourself deluged with name cards that you don't really want to keep, but which are put into your Name card file automatically. Also, you might add information to someone's card in your name card file, only to find it missing later because the name card has been replaced automatically with a newer version that doesn't contain that information.

Better merging of name cards

When a new name card comes into the device and automatic name card collection is on, the new card is put into the Name card file. When a new card is added to the Name card file, if it is completely different from any of the existing cards, it is just added. If it matches one of those that is already there, but is a newer version, it is

merged into the old one. Merging also occurs with name cards that are sent as enclosures and then extracted manually; and those that are dragged around, looked at, and then dropped into the Name cards file.

In Magic Cap version 1.0, when two name cards are merged, all of the old addresses are deleted and replaced by all of the new addresses.

Extracting name cards manually

If you turn off all automatic name card collection, and later, when looking at a received message, decide you want some of the name cards in your Name card file, it is now possible to extract the cards from the message manually.

Finer control over automatic name card collection

> ☑ 1. Automatically collect the sender's name card from each incoming message.

> ☐ 2. Automatically collect the name cards of all the recipients of incoming messages.

The rule in the Name card file in Magic Cap version 1.0 that turns off and on automatic name card collection has been split into two rules. One provides for automatic collection of the sender's address card only. This rule is switched on by default. The other provides for automatic collection of all of the address cards on each message. This rule is switched off by default.

In Magic Cap version 1.0, the rule in the Name card file only lets you turn on or off automatic name card collection. When it is turned on, all address cards, the sender and all recipients are automatically put into the Name card file.

Shortcuts for keeping new name cards

In Magic Cap version 1.5, if you hold down *option* and touch *keep* (instead of just touching keep), the system won't prompt you to confirm whether to keep a new name card for someone for whom you already have a name card. The system then decides whether to combine the two name cards or not, according to the following criteria:

- If any addresses on the existing name card match any on the new name card, merge them.

- If the existing name card has no addresses, merge them.

- If the existing name card has only one address and it is of a different class, merge them.

- Otherwise, keep them separate.

This algorithm tries to catch the following common case: You receive mail from someone's Internet account, resulting in a new name card for him containing just an Internet label. Then you receive mail from another account owned by that person

and therefore you receive a new name card with that account's label. In Magic Cap version 1.5, these two labels are now combined on a single name card, rather than left on two different cards.

When keeping a new name card received from an enclosure, if the newer name card matches one already in the Name card file by name only, it is impossible to tell whether they represent the same person, company, or group. In Magic Cap version 1.0, the system asks you whether you want to keep the two name cards separately or merge them together.

When keeping a new name card received from a directory lookup or an enclosure in Magic Cap version 1.0, you are always prompted in the ambiguous case about keeping the two name cards separately or merging them together. *Option-keep* skips this confirmation step. The new feature preserves this behavior, but also adds the heuristics to the system so that it can make this decision automatically when you *option*-touch *keep*.

Discard

- Touch *discard* to open a confirmation window with yes and no buttons.

- Touch *yes* to delete the card and show the next card.

- Touch *no* to close the confirmation window without deleting the card.

- *Option*-touch *discard* to delete the card without seeing the confirmation window.

Get info

- If directory lookup service is available, touch *get info* to create a message with a directory request for the current name card (after a confirmation dialog).

Group name cards

- With a group name card displayed, touch *add* to add a member to the group by opening the Name chooser.

- A group can be a member of another group.

- Touch a group member to select that member, then touch *remove* to remove the member from the group. The group card is updated when a name card of someone belonging to that group is removed.

- Drop a stamp or image coupon on the card's image to associate that group with that image and create a stamped group. Any cards that have a stamp with the same image become members of that group. Add or remove cards in the group by adding or removing the associated stamp, or by using the add and remove buttons on the group card.

Log

- Touch *log* to open the log index for that name card.

- Touch a log entry to open that entry.

Name cards commands in the Magic lamp

- Touch *new group* to add a group name card.

new group

Name cards rules

The rule in the Name card file in Magic Cap version 1.0 that turns off and on automatic name card collection has been split into two rules.

-

> ☑ 1. Automatically collect the sender's name card from each incoming message.

-

> ☐ 2. Automatically collect the name cards of all the recipients of incoming messages.

-

> ☐ 3. Postal address labels by default use the country last used in a postal label.

This rule allows you to control whether you must specify the country for addresses. When switched off, you will always be prompted for the country when entering address information for these stamps: the home address and work address labels that appear on a new name card, the address stamps in the Main drawer of the Stamper. When switched on, Magic Cap no longer prompts for the country first, but instead assumes the country last specified and skips ahead to the country-specific address information.

Customizing the name cards

- Drop a stamp or image coupon on the name card's image to customize it. Customizing a group's name card creates a special kind of group.

- Draw or write on name cards.

- Touch *note* from the Main drawer in the Stamper and then type a description for the note and the note itself.

Notebook
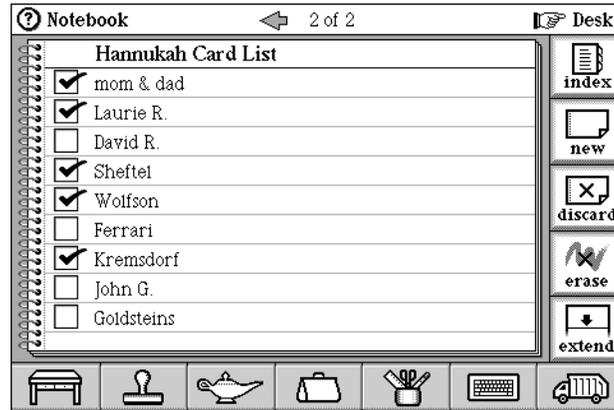
The Notebook contains pages for drawing and writing.

- Touch the *Notebook* on the Desk to open the Notebook and select the pencil tool.

Actions from the Notebook
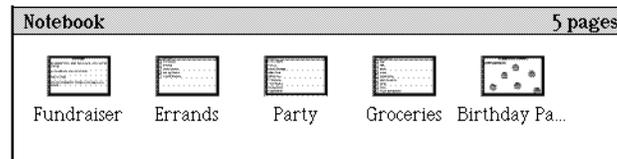
- Touch *index* to see minicards, reduced images of the Notebook pages.

- Touch a minicard to open its page.

- Slide a minicard to rearrange the order of pages in the Notebook.

- Slide a minicard to the Trash truck to delete that page.

- Slide a minicard to the Tote bag to take it somewhere else as a note card.

- *Option*-slide a minicard to create a copy.

- When it's out of the Notebook, touch the note card to open it.

- Slide a note card to the Notebook on the Desk to add the card as a notebook page and open the Notebook to that page.

- Slide a note card to the Notebook index to add the card as a notebook page.

- With the minicard in the Tote bag, open any card (such as a message or name card) and drop the minicard onto the other card to attach the notebook page to the other card.

- With the minicard in the Tote bag, open any notebook page and drop the minicard onto the notebook page. The minicard expands and becomes a page in the Notebook.

- Touch *new* to create a new page after the current page. Choose the kind of new page: plain paper, lined paper, graph paper, basic list, checklist, two-column list.

- Touch the *Keyboard* to open the Keyboard and put a typing point in the first typing area on the page.

- Touch *discard* to delete the page (after confirmation).

- Touch *erase* to remove the most recent writing or drawing.

- *Option*-touch *erase* to remove all writing and drawings from the page.

- Touch the *right* or *left arrow* to see the next or previous page.

- *Option*-touch the *right* or *left arrow* to see the first or last page.

- Make the page larger by touching the *extend* button. This adds space to the bottom of the page.

- Touch *extend* repeatedly to add more space for each touch.

- Scroll arrows are added when the page is first extended.

- Extended pages shrink to the size of their content when the card is closed.

- Slide an item on a list page to move it to another position on the page, or to the Tote bag or Trash truck.

- Slide a check list item from a page to the Tote bag, open the Datebook, then slide the item into the Datebook's day view to create a to do appointment.

- Slide a minicard from the index to the Tote bag. Step back from the index to the Notebook. Touch *new* to open the Select a new page window. Slide the minicard to the window. A new kind of Notebook page appears as a choice in the window.

- Touch an item on a list page to insert the cursor at the end of the entry to edit it.

Notebook commands in the Magic lamp

- On a list page, touch *sort* to alphabetize the items.

Japanese Magic Cap: Sort button localized

In Japanese Magic Cap, the sort button that appears in the Magic lamp is localized.

並べ換え

Notebook rules

-
  | □ | 1. Show the on-screen keyboard when creating a new page in the notebook. |

This rule allows the user to control whether the Keyboard appears automatically when a new notebook page is created. This rule is switched off by default, so that the pencil tools are selected

Customizing the Notebook

- The arranging tools are available in the Tool holder: move, copy, stretch.

Out box

Package contents scene

The Package contents scene appears when you touch a *package* in the Storeroom. The Package contents scene is a new feature in Magic Cap version 1.5.

Actions from the Package contents scene

In Magic Cap version 1.5, a Package contents scene lists the items contained in a package. For each item, the list displays a small image, a short description (but longer than in 1.0), the item's size, and, for some items, a date.

- Touch a *column heading* to sort by that column. You can sort the items in the list by image, name, date, or size. (The Image column, which is the leftmost column, is unlabeled.) When you enter the package contents scene, the list is unsorted. This is because sorting can be slow, and a slow sort could delay your entry into the scene.

- To view an item, touch the item to select it, and then touch *view*. If the item is in a packed package, the following confirmation window opens. To view the item, you must touch *yes*.
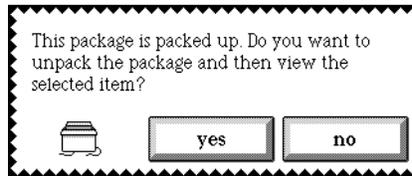
Viewing an item takes you to the item's installed location. For example, viewing a name card takes you to the name card file, where the item appears as the current card. Viewing an appointment takes you to the appropriate day view in the Datebook. You can step back (twice, in the Datebook case) to return to the list of items in the data package scene.

- To discard an item, touch the item to select it, and then touch *discard*. The item is then discarded immediately, even if it is in a packed package. It is not sent to the Trash truck; it is simply gone. For this reason, a confirmation window always appears, even if you *option*-touch *discard* or are in construction mode.
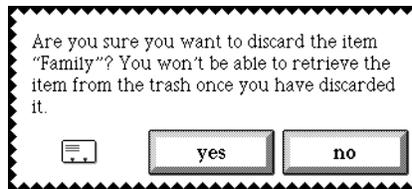
In Magic Cap version 1.0, there's no way to discard an item in a packed package. In Magic Cap version 1.5, you can do so. You can even file an item to a packed package, but you have to unpack the package in order to see or use the item.

- To file an item, touch the item to select it, and then touch *file*.

  The only items that can't be filed in this way are items of package classes that are not currently installed, either because the source package is packed or because the object isn't on the communicator at all. As in Magic Cap version 1.0, if such items appear in the list touch *unpack* to identify this item.

  In Magic Cap 1.0, the file operation isn't available from the data package scene. This combined with the inability to discard items from packed packages means that it's possible to create a packed package that's too big to be unpacked, and there's no way to make it smaller. This problem is completely solved in Magic Cap 1.5.

- *Option*-touch a *checkbox* to select or deselect all of the items in the list so that you can perform the same action on all items in the package.

- These options are available when in the Package contents scene and no individual item is selected: unpack, copy, discard.

- Touch *unpack* to unpack a packed package.

- Touch *copy* to copy a package.

- Touch *discard* to throw away a package and its contents.

Copy button in package scenes

A new *copy* button has been added to all package scenes. When you touch *copy,* the Copy package window opens, and you can then copy the package by selecting a destination and touching *copy.*
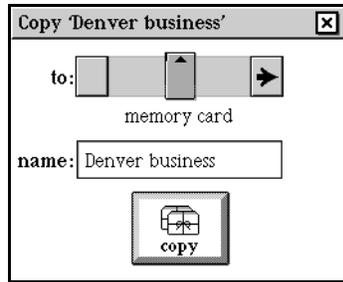
In Magic Cap version 1.0, the only way to copy a Storeroom package is to drag it from one shelf to another or to leave it in the Tote bag while moving to another part of the Storeroom.

In Magic Cap version 1.5, the guide button was removed from the package scene for software packages to allow room for the new copy button. (The *guide* button was an obscure feature that let you go straight from a package scene to its instruction book.)

Phone

The Phone controls the Telephone line that's connected to the communicator.

Japanese Magic Cap: Phone scene

In Japanese Magic Cap, the Phone scene looks like this:

The alphabet tags were removed from the keypads.

Actions from the Phone

- The phone contains these buttons: keypad, names, log, services (if there are optional services installed on the communicator), location. Touch a button to see that page.

- All phone dialing functions play touch tones through the communicator's speaker whether a phone line is connected or not. Touch tones from the communicator can dial a telephone if the communicator is placed next to the telephone microphone (doesn't work on all telephones).

Clear

- Touch *clear* to erase the phone number shown and change redial to dial.

Dial/Redial

- Touch *dial* to dial the phone number shown, start the timer at the top of the screen, and open the Phone Status window.

- Touch *dial* with no phone number shown to take the phone off the hook, then touch the keypad to dial.

- When a phone call starts, the call image and timer appear at the top of the screen.

- The button's label changes to hang up after dialing. The button's label changes to redial after you hang up. Touch *redial* to call the telephone number again.

Keypad

- Touch *keypad* to see the phone's keypad page.

- Touch a number key to dial that number.

Location

```
┌─────────────────────────────────────────────────────┐
│ ⊙ Dialing location   Tuesday, September 23  1:02 p.m.  ☞ Phone │
│  ┌─────────────────────┐  ┌──────────────────┐   ┌────┐  │
│  │ 🏢  dialing location │  │ work             │   │🏢  │  │
│  └─────────────────────┘  └──────────────────┘   │done│  │
│                                                   ┌────┐  │
│  ( country )  USA         ( area code )  [      ] │📠  │  │
│                                                   │remove│ │
│  ( calling )  none        ( dial out  )  [      ] ┌────┐  │
│  (  card  )                                       │┼┼┼│  │
│                                                   │options│ │
│  ( local tolls )          ( carrier  )            └────┘  │
│                           ( codes    )                    │
└─────────────────────────────────────────────────────┘
```
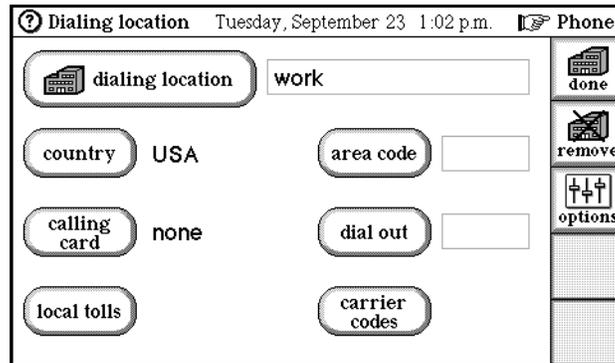
Touch *location* from the Phone line connected window to see the Phone location setup page, or touch *location* from the Phone scene that appears when you touch the *Telephone* on the Desk.

- Drop a dialing location from the Stamper. These locations are available: home, work, hotel, airplane, manual dial. The Dialing location scene opens. Enter dialing location description, country, area code, and calling card, dial out, local tolls, and long distance information.

- Touch a calling location's check box or image to set the current location.

- Touch a calling location's text to open the item for editing.

- Touch *done* after making all the desired changes and to return to the Dialing location scene.

- Touch *remove* to remove a dialing location.

Airplane and manual dialing stamps

✈
airplane

To create a telephone location stamp for placing calls from airplane telephones, touch the *Telephone*, touch *location*, touch the *Stamper*, and then touch *airplane*. A new telephone calling location is added with an area code of (none). Choose this calling location when you connect your communicator to an airplane telephone.

📠
manual dial

In some situations—travel in some foreign countries, for example—Magic Cap cannot dial automatically to access a communication service. In this case, you will have to use the Telephone's manual dialing feature to send and receive messages and to send faxes. You may also use manual dialing in situations where you need control over the timing of the dialing—dialing out through a switchboard, for example.

Once you have set up a special phone location stamp for manual dialing, whenever you set this as your calling location and attempt to connect to a communication service or fax number, your communicator displays the Manual dialing window instead of automatically dialing the telephone number. You then dial the number displayed on a telephone that is connected to the same phone line as your communicator, or read it to an operator and then touch *connect*.

There is also a shortcut to manual dialing. Each line of numbers in the manual dial window can be dialed by tapping on that line. The most common problem with dialing internationally is that the delays between segments vary widely, and this shortcut allows you to control the time between segments dialed while still using Magic Cap to dial them automatically.

When the current calling location is set to *manual dial* and you dial a service or fax phone number, then instead of dialing automatically, the system takes you to the manual dialing window shown above.

When you have dialed the number manually by using a connected phone to dial it or by reading it to an operator, touching *connect* causes the communicator to connect to the modem that is waiting at the other end of the telephone line. To hang up, touch *stop* in the connection status window as with an automatically dialed connection.

Normal phone numbers (that is, mail service or fax numbers rather than home or work telephone numbers) do not use the manual dialing window. This is the case even if *manual dial* is selected as the current location. Manual dialing is less critical for this situation since you are manually dialing the number in any case so the communicator isn't adding much value.

In Magic Cap version 1.0, it's not easy to dial a phone number manually. You can connect a communicator and a normal phone to the same line using a splitter, then dial the service phone number manually on the normal phone, and then when you hear the modem signal quickly press *mail* on the communicator, which proceeds to dial a phone number unnecessarily but nevertheless connects to the modem that is already waiting at the other end of the telephone line. This isn't an obvious technique, and it's unreliable, because the timing is important.

Additional hotel phone dial out codes

Some hotels require different dial out codes for making local calls, long distance calls, and toll-free calls. In Magic Cap 1.0, the only way for you to enter a different dial out code for these three different types of calls is to go and change the dial out code before each telephone call or to create three different hotel locations for the same hotel.

Now when you create a hotel phone location, three Outside line windows open in which you can enter any special dial out codes for making local, long distance, or toll-free calls. This enables you to easily dial out from the hotel without having to edit the phone location or change to a different phone location to get the appropriate dial-out code.

Dialing location scene
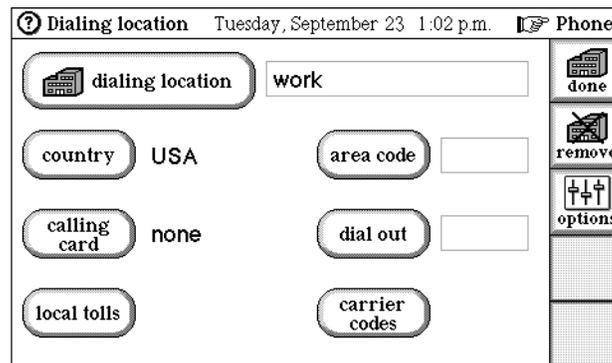
The Dialing location scene opens when the user adds a new dialing location or edits an existing one.

- Touch *dialing location* or touch anywhere in the dialing location description field to position the typing bar at the end of the field and open the Keyboard.

- The typeface adjusts automatically to accommodate longer description names.

- Touch *country* to open the Choose a country window.
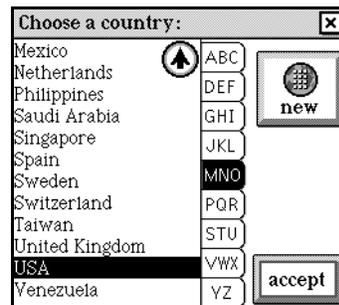
- Select a country from the list and touch *accept*. Touch one of the *tabs* to go to that part of the list of countries or touch one of the *scroll arrows* to see a different part

of the list. To enter information for a country not on the list, touch *new* in the Choose a country window and type the information requested.

- The following fields appear: name, code (for country code), dial out code, national code, and US direct access number for dialing directly to the US from this country.

- Touch *area code* and type the area code of this dialing location.

Japanese Magic Cap: Area codes

In Japanese Magic Cap, the area code button does not appear by default because the "always dial area code" option is on by default.

- Touch *calling card* to see the Current calling card window.

- Select one of the cards listed or touch *new* to add a new card. Buttons labelled "change" and "remove" appear if there are calling cards listed in the window. When adding a new card or changing the information for an existing card, the following windows appear.

- Touch *change* to change the information for a card in the list.

- Touch *remove* to remove a card in the list. The following confirmation window opens to warn you that the calling card information will be removed throughout the system.

> If you remove this calling card, other dialing locations won't be able to use it for billing. Do you want to remove this calling card from your communicator?
>
> remove   keep

- Touch *no calling card* to charge calls to your telephone bill.

- Touch *accept* to save changes and close the Current calling card window.

- Touch *dial out* and type the digit required to get an outside line from this dialing location.

- If the dialing location is a hotel, the dial out button responds differently. Touch *dial out* to see the Dial out codes window. Enter the appropriate dial out codes.

> **Dial out codes**   ☒
>
> Type the dial out codes for local, long distance, and toll free calls from your hotel here:
>
> local 8   long distance 9   toll free 8
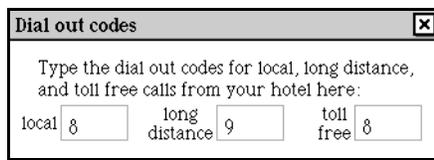
- Touch *local tolls* to set whether the location requires local toll dialing. The Local tolls window opens in which you can add, change, or remove prefixes that require a 1 before dialing.

> **ⓘ Local tolls**   ☒
>
> add
>
> —empty—
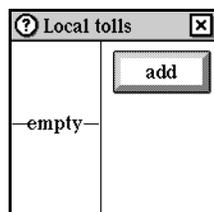
- Touch *add* to add a new prefix. This action causes the Local toll prefix window to open in which you can type a prefix. A prefix must be all digits.

> **ⓘ Local toll prefix**   ☒
>
> Enter the 3-digit prefix here:
>
> 728
>
> done
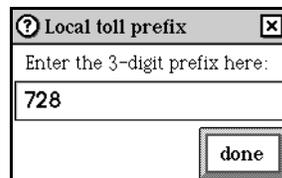
- The Local tolls window reopens after a new prefix is added so that others can be added at the same time.

In Japanese Magic Cap, the local tolls button does not appear for Japanese cities as this feature is not applicable.

- Touch *carrier codes* and type the access codes required before dialing a long distance and international telephone numbers.

- Touch *options* to see the Dialing options window.

- Touch *make service-dialing audible* to hear the dialing tones through the communicator when connecting to a mail service.

- Touch *dial without waiting for tone* to dial number before waiting for the phone to go off-hook.

- Touch *always dial area code* for phone systems that require an area code every time you dial out.

- When the *always dial area code* checkbox is switched on, the *don't dial national access locally* appears. This feature enables users to control whether a national access code ("1" for USA) is dialed. For example, Houston is switching to a new mode of dialing where the area code must always be dialed but the national access code must not be dialed.

- Select the dialing speed using the chooser in the Dialing options window.

- Touch the switch to set tone or pulse dialing.

Log

- Touch *log* to see the log index.

- Touch an entry in the index to see that entry.

Names

- Touch *names* to show the directory page, which displays the Name Chooser and the phone numbers for the selected name.
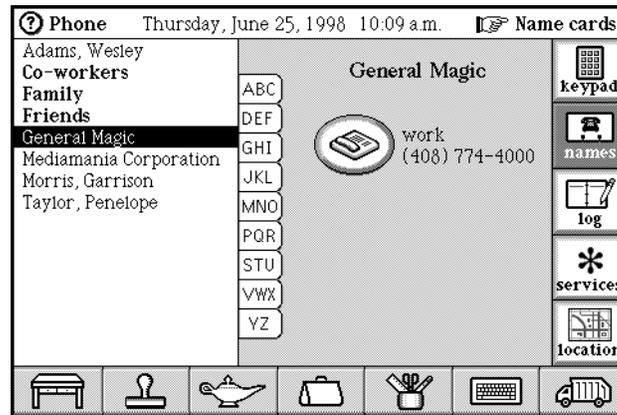
Japanese Magic Cap: People picker

In Japanese Magic Cap, the people picker window looks like this:
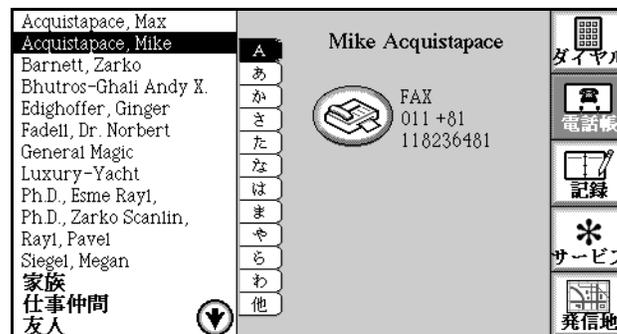
Names are displayed in "familyName givenName" order if the familyName starts with a non-ASCII character. Latin names use the format "familyName, givenName".

- Touch a phone number to call and open a new log entry.

Phone line connected window
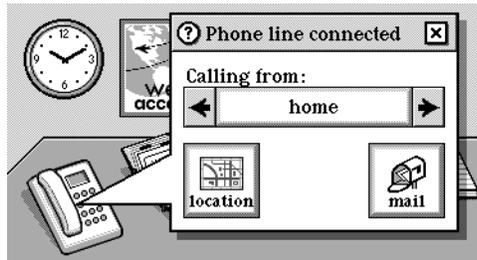
- *Option*-touch the *Telephone* to see the Phone line connected window.

- In the Phone line connected window, set the dialing location. Touch *location* to go to the phone's setup page. Touch *mail* to send any mail that's in the Out box and collect any new mail.

Phone status window
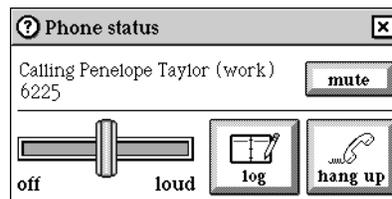
When the communicator dials a telephone number, the Phone status window appears. If the window is not visible and a call is in progress, touch the phone status indicator at the top of the screen.

- Touch *log* in the Phone status window to open the phone log.

- Touch *hang up* in the Phone status window to hang up the phone without changing scenes.

- Use the slider to set the phone volume.

- Open other scenes while the phone call continues.

- Touch the phone status image at the top of the screen to open the Phone status window.

Japanese Magic Cap: Less confusing hang-up

The Japanese usability study team reported that some people touched the close box to hang up. In Magic Cap 3.1 (Rosemary), the objects in the Phone status window are rearranged to make it more obvious how to hang up. The "hang up" button is

now in the lower right corner of the window where major action buttons such as "done" or "accept" usually reside. In Japanese Magic Cap, the Phone status window looks like this.
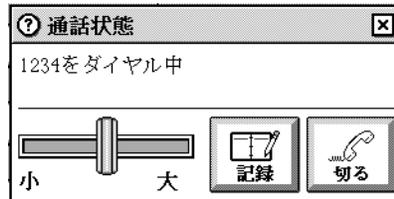
Save

- Touch *save* to add a new name card with the displayed number.

- Special prefixes, such as dialing 9 to get an outside line in a PBX, are removed from the saved phone number.

Services

- The user can install special sets of controls on the services page. These controls can include buttons for fax receive, working voice mail systems, automated attendant phones, and other things. New sets can come in packages on messages or storage cards. All installed sets are listed in a choice box on the services page.

- If there are no services installed, the services button does not appear.

Fax receive

Fax receive is available as an add-on package for Magic Cap 3.1 (Rosemary) communicators. It allows communicators with enough available memory to receive and view faxes.

- When an incoming call arrives, the Phone status window opens and includes an additional button, *receive as fax.*
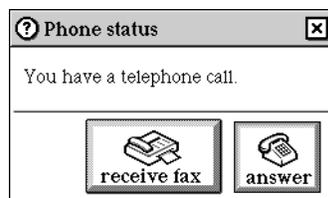
- Users touch *receive as fax* if they know that the incoming call is a fax. The Receiving fax window shows the status of the incoming fax. The *cancel* button cancels the transmission.

- The received fax report is placed in the In box.

- Touch the fax report in the In box to open it. The fax report consists of a header showing the sending fax ID information, a time and date stamp, a transmission status message, and page icons representing the faxed pages.

- "Pages" representing the received fax appear in the window. Touch a page icon to look at it. If the sender included a cover page, it will be the first page.

- Use the arrows to scroll up or down. Press down and drag to the left or right to scroll horizontally.

- To view the size of a received fax, touch the *size* button.

- To discard a received fax, touch *discard.*

- If there were errors during transmission, a blinking exclamation point appears on the fax report. Touch it to view transmisstion error information.

- If the fax receive package is installed, the controls for receiving an incoming fax via a fax-back service appear when *fax receive* is selected in the services chooser at the top of the scene.
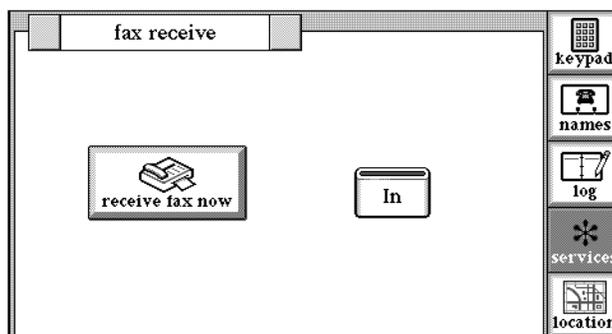
- The fax receive scene contains the *receive fax now* button and an image of the In box in which received faxes are placed once they are transmitted to the communicator. The *receive fax now* button can be used like a receive button is used on a regular fax machine. This allows the communicator to receive faxes from services that allow users to request documents be sent to their fax machine. Use the communicator to dial the faxing service. When instructed to press the receive button the fax machine, users touch the *receive fax now* button in this scene to download the fax to the communicator.

Speed dial buttons

- Touch a speed dial button to call that number and open a new log entry.

- Touch an unprogrammed speed dial button or *option*-touch a programmed speed dial button to open the Phone button window.

```
┌─────────────────────────────────────────┐
│ ⑦ Phone button                       ⊠  │
│                                           │
│  Button label: │ speed dial button 3    │ │
│                                           │
│  ◉ Dial a number:                         │
│   ( country )  ◄  │    USA          │ ►   │
│                                           │
│   ( number )      │                 │     │
│                                           │
│  ○ Dial by name:                          │
│       ( who )                             │
└─────────────────────────────────────────┘
```

Japanese Magic Cap: Phone button window

In Japanese Magic Cap, the speed dial buttons are referred to as 短縮ダイヤルボ. The person's name that appears on the speed-dial button must be the family name followed by work or home, such as 斉藤（自宅）.

- Touch the Button label field to open the Keyboard and type a label for the speed dial button.

- Touch *Dial a number,* select the country, and enter a phone number to program the speed dial button.

- Touch *Dial by name*, then touch *who* and select a phone number from the Name card file.

Phone commands in the Magic lamp

None.

Phone rules

-
```
┌──────────────────────────────────────┐
│ □  1. Make a log entry for each phone call. │
└──────────────────────────────────────┘
```

-
```
┌──────────────────────────────────────────┐
│ ✔  2. Suggest discarding log entries more than a week │
│       old, unless they are marked with a save stamp. │
└──────────────────────────────────────────┘
```

-
```
┌──────────────────────────────────────┐
│ ✔  3. When any call is received, display an │
│       announcement. │
└──────────────────────────────────────┘
```

-
```
┌──────────────────────────────────────┐
│ ✔  4. When any call is received, play the Ring sound. │
└──────────────────────────────────────┘
```

-

> ☑ 5. When a phone line is connected, confirm your current location.

-

> ☐ 6. When the phone rings, pick it up as a fax after 4 rings.

When the fax receive package is installed, this rule appears in the rules for the Telephone.

Customizing the Phone

None.

Web browser

Storeroom
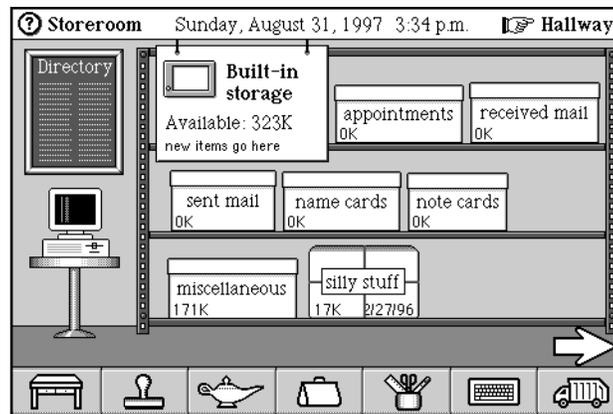
The Storeroom is the place where users manage the memory and items in the communicator, on storage cards, and on a linked personal computer.

Actions from the Storeroom

- A shelving unit named Built-in storage shows items in the communicator's RAM.

- A shelving unit named Built-in packages shows items in the communicator's ROM.

- The Built-in Storage Usage sign at the right side of the Storeroom displays memory usage graphs in two categories: permanent and workspace.
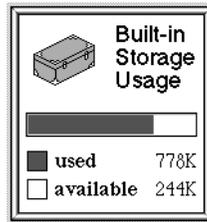
- Insert a new storage card. Set up the storage card (after confirmation). A shelving unit appears to represent the storage card and its items.

- Insert a storage card that holds data. A shelving unit appears to represent the storage card and its items. Note that storage cards formatted on a Magic Cap 3.1 (Rosemary) device will not be usable with Magic Cap version 1.0 or Magic Cap version 1.5. Storage cards formatted on 1.0 or 1.5 devices will be usable in Magic Cap 3.1 (Rosemary) devices although not all data types will translate to Rosemary.

- A new storage card opens a window for entering the card's name and checking whether it should hold newly created items.

- Each shelving unit has a placard that tells its name and available memory. Touch a placard for a storage card. A window appears for typing a new name and checking whether the card should hold newly created items.

- Exactly one shelf at a time has new items go here on its placard. Any newly created items, such as name cards or notebook pages, will be stored there.

- There are packages on the Built-in storage shelves representing well-known collections of system objects: Appointments, Note Cards, Name Cards, Received Mail, Sent Mail.

- Miscellaneous is a storage box on the Built-in storage shelf. Its size equals the amount of memory represented by the entire Built-in storage shelf, minus the sizes of the other boxes on the shelf. In 1.0, the sizes of the boxes on the main memory shelf don't add up to the total amount of built-in storage, which confuses many users. This box cannot be copied or thrown away. Touching it opens to a mostly empty scene that has some explanatory text about what it represents.

- Packages on a shelf represent software packages: the ROM shelf has Help Books.

- The Built-in Storage Usage sign on the wall displays graphs showing the percentages of permanent and workspace memory used.

- Touch a package. It hops off the shelf and opens.

- Touch one of the *arrows* on the Storeroom floor to move in that direction.

- *Option*-touch one of the *arrows* to move all the way to that end of the Storeroom.

- Slide along the Storeroom floor to move in that direction.

- The Storeroom has directories that list each of the shelves and their contents. Touch an item in the list to go to it (shelf name) or open it (package).
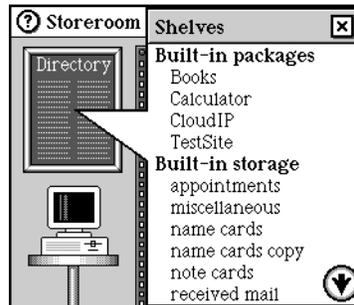
In Magic Cap 1.5, touch the *Directory* in the Storeroom to see a list of all packages, sorted by shelf. Touching one of the package names in the list causes that package to open. *Option*-touching a package name takes you to a place in the Storeroom where you can see the box containing the package, but doesn't open it.

In Magic Cap 1.0, the Directory window lists only the shelves, not the packages.

PC Connectivity

- Touch the image of the personal computer to connect to a linked personal computer.

- Drag a package onto the image of the personal computer to upload the package to a linked personal computer, provided an optional PC connectivity package is available on the host.

Packages

- Touch *pack up* to remove the package's items from internal memory.

- Touch *unpack* to put the package's items into internal memory.

- When a package is unpacked, its items are added to the appropriate place in the communicator—name cards are added to the name file and its appointments are added to the Datebook, for example.

- Touch *copy* to create a copy of the package.

- Touch *go to* to see the package's scene.

- Touch *credits* to see information about the package's creators.

- Touch *respond* to create a message that goes to the package's publisher.

- If the package contains data items, a window opens that lists the items it contains.

old name cards	Sunday, August 31 11:18 a.m.		Storeroom
What		**When**	**Size**
☐ Bee Gone Pest Control			<0.1K
☐ Bell Labs			1K
☐ Bev's Diner & Filling Station			<0.1K
☐ Kendall Calloway			<0.1K
☐ Co-workers			0.2K
☐ Alyssa Dorfman			<0.1K
☐ Family			0.2K
☐ Max Frank			<0.1K
☐ Friends			0.2K

- Touch one of the *arrows* to scroll through the list.

- Select an item or items in the list and then touch *file, view,* or *discard.* Touching *file* allows you to file the original or a copy of the item to another place in Built-in storage or to another package on a storage card. Touching *view* allows you to look at the item. Touching *discard* allows you to remove the item from the package.

- *Option*-touch a *checkbox* to select or deselect all items in the package.

Storage cards

- If the storage card battery is low, an announcement appears.

- If the storage card battery is dead, an announcement appears.

- If the storage card battery is low or dead, an indication appears on the card's placard.

- If the storage card is read-only, an appropriate image appears on its sign.

- If new items go here is set on for the storage card, "new items go here" appears on the placard.

- Inserting a storage card that contains packages created on a 1.x device opens an announcement offering to translate the packages into Magic Cap 3.1 format.

- Option-inserting a storage card opens the following confirmation window.

> Do you want to set up the PC card in slot 1, erasing any information on the card? If not, eject the card and insert it again without holding the option key.
>
> [set it up]   [don't]
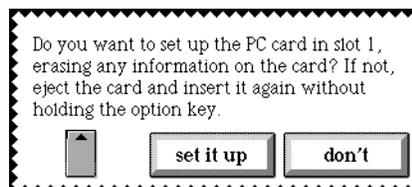
- Touching *set it up* reformats the storage for the current version of Magic Cap, erasing any data previously stored on the storage card. Touching *don't* cancels the action.

- The Name window opens in which you can name the storage card and select whether new items are stored on the storage card.

Translating data from an older version of Magic Cap

- Insert a storage card that holds data not created on a Magic Cap 3.1 (Rosemary) device. A confirmation window opens asking whether you want to convert the data on the storage card to Magic Cap 3.1 (Rosemary) format. The storage card is not changed; rather the selected packages are copied to the communicator and in the process are converted to Magic Cap 3.1 (Rosemary) format.
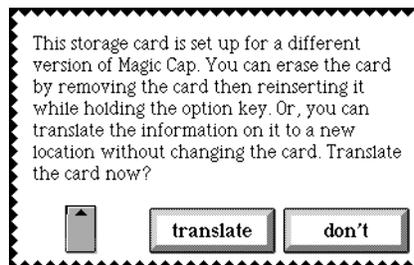
- Touch the *translate* button in this confirmation window to open the Translate packages window for this version window in which you can select packages to translate and select the destination.
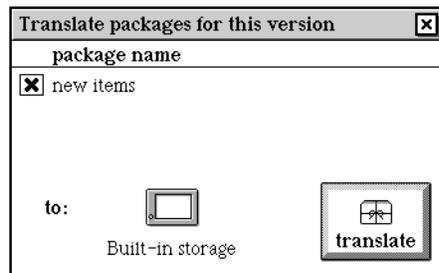
- Touch a checkbox to select or deselect an item to translate. A chooser appears if there is more than one destination available to copy to—another storage card, for example. Otherwise, Built-in storage appears as the only destination option. Once the packages are converted into Magic Cap 3.1 (Rosemary) format, they appear in the Storeroom.

Storeroom commands in the Magic lamp

Backup command

The backup command copies the contents of Built-in storage to a storage card.

- Touch *back up* to copy everything in Built-in storage to a package. Items stored on a storage card are not copied.

back up

- In the Backup window, type a name for the backup package, and then touch *back up*.
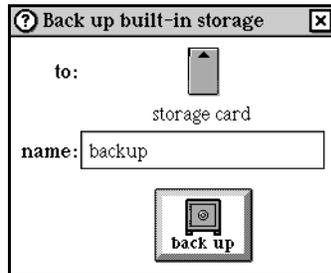
An announcement appears, indicating that the backup is in progress. The user cannot change scenes until the backup is complete.

- The backup process now does a pre-flight to determine if there is enough room on the storage card and if there is not, displays this announcement.

There isn't enough room for the information you were transferring between main storage and the storage card in slot 1. Discarding packages and then emptying the trash will make room.
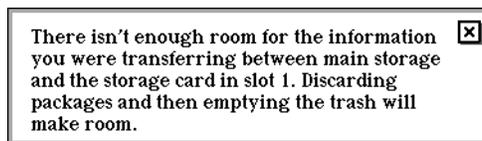
- To *restore* from a backup package, open the backup package and then touch *restore.* A confirmation window opens in which you can touch the *restore* button to proceed. An announcement appears, indicating that the restore is in progress. The user cannot change scenes until the restore is complete. If the user has password-protected the device, the password scene appears following the restore so that the user can enter the password.

Suggestions for discarding command

- Touch *suggestions for discarding* to generate a list of items that you might want to remove from your communicator to free up space in Built-in storage. Touch an item in the list to select it. Then touch *file*, *view*, or *discard* to file, view, or discard the item.

suggestions
for discarding

- Users can see items as they are added to the list, scroll the list as it is being built, and stop the search at any time. Users can select more than one item in the list at a time. Each item has a checkbox next to it, so multiple items can be selected for discarding or filing at once. As the list is built, a status area displays what kinds of objects are being searched for. The *stop* button allows you to pause the search at any time and the *more* button is used to continue the search.

- Touching *suggestions for discarding* takes you to the Suggestions for discarding scene. *Option*-touching *suggestions for discarding* doesn't take you to the Suggestions for discarding scene. Instead, like the *clean up* button in the Magic lamp, it lets the communicator try to clean up for you. The clean-up process starts immediately.

- In the Suggestions for discarding scene, touch *clean up* in the Magic lamp to start the clean up process.

   Many operations, such as removing storage cards and discarding packages, require cleaning. In Magic Cap version 1.0, cleaning is a fairly slow operation. To speed it up, cleanup was optimized in Magic Cap 1.5. When you discard a package, instead of cleaning all packages, the system cleans only those packages that contain references to the disappearing package. In addition, many other smaller changes were made to cleaning to speed it up in Magic Cap version 1.5.

- Once the clean up is complete, the following announcement appears.
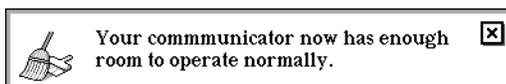
Storeroom rules

None.

Customizing the Storeroom

None.

Suggestions for discarding scene

If the communicator begins to run low on space in memory, a window like the one below may appear.
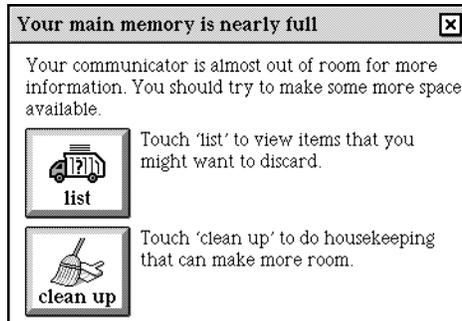
There are three options from this window: close the window and ignore the warning; touch *list* to generate a list of items that you might want to discard, viewable from the Suggestions for discarding scene; touch *clean up* to clean up memory without generating the list.

Low memory handling targets the current container used for storage of new items. So, if new items are stored in Built-in storage, then the Suggestions for discarding scene lists items stored in Built-in storage and not items stored on a storage card.

If you dismiss the window and memory continues to fill up, the window will continue to reappear periodically until memory is completely full, in which case the completely full window (shown below) appears.

The window below opens once memory is so full that your communicator cannot perform any actions until you free up some space. The window cannot be dismissed and so forces the user to discard items. The *more* button causes the communicator to search for additional items that might be discarded. This button becomes the *stop* button when the search is in progress.
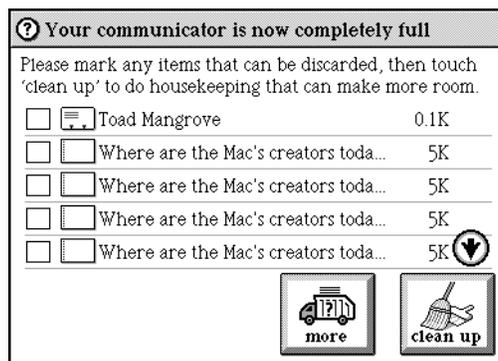
Actions from the Suggestions for discarding scene

The Suggestions for discarding scene appears when you either explicitly generate a list of items to discard by touching *suggestions for discarding* in the Magic lamp of the Storeroom, or by touching *list* from one of the low memory announcements.

- As the list is built, a status area displays what kinds of objects are being searched for.

- Tapping in some random place while the suggestions for discarding list is being built causes the system to honk as well as flash the *stop* button to indicate that the search is in progress and can be stopped by using the *stop* button.

- Touch *stop* to pause the search at any time. The button is replaced by the more button which is used to continue the search.

- Touch an item in the list to select it and then touch *file* to file the item, *view* to view the item if it can be viewed, or *discard* to discard the item.

- You can select more than one item in the list at a time so multiple items can be selected for discarding or filing at once.

- Hold down *option* when touching a *checkbox* to select or deselect all items in the list.

- A checkmark appears in the box next to an item to show that it's selected.

- Touch *clean up* in the Magic lamp to start the clean up process.

Tracking reports

Windows

Windows open when certain objects are touched but can accept further information before completing the desired action. Most windows share these characteristics: closers, help, title bar, closing when another window opens, closing when leaving the scene. Many windows allow the user to select the parameters of the operation. Others lead the user to another window when an object in the window is

manipulated. Most windows allow the user to exit without taking any action. Some windows display additional options when the user holds down the option key and touches in the window's title bar.

This section describes some of the more commonly used windows in the Magic Cap software.

Commands window

Japanese Magic Cap: Commands window

In Japanese Magic Cap, the Commands window is localized; it looks like this:

The Commands window opens when the Magic lamp is touched. The Commands window includes miscellaneous commands and rules. Some commands and rules are available everywhere; in addition to these, scenes can add their own commands and rules to the Magic lamp. The available commands can vary depending on whether construction mode is turned on.

- These commands are available from the Commands window: search (previously named "find"), file, print, contact, mail, fax, beam (if communicator is equipped with infra-red capability).

- The available commands vary depending on the current user level, normal or construction mode.

- Other commands are available in certain scenes—the back up command in the Storeroom, for example. For more information about the commands available in a particular scene, see that scene's section in this specification.

Actions from the Commands window

- *Option*-touch in the *title bar* of the Commands window to see the commands available at the other user level. The snap command is available from construction mode.

- Touch the *close box* to put away the Commands window.

- Touch the *Magic lamp* to open and close the Commands window.

Beam
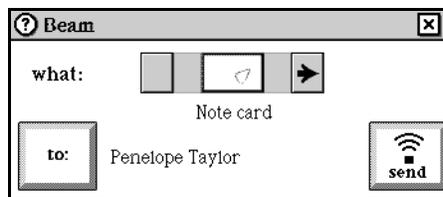
Touch *beam* to open the Beam window and send an item using the infrared beam.

- When you touch *beam,* the communicator searches for other communicators equipped with an infrared beam. Touch *to* to select a recipient other than the one shown.

- Touch one of the *arrows* to select an item other than the one shown in the chooser. The chooser will not appear if there is only one item that can be beamed from the current screen.

- Touch *send* to beam the information to the other communicator.

- If there is nothing that can be beamed from the current screen, the message "There's nothing here to beam" appears in the Beam window.

- When beaming a name card to another Magic Cap 3.1 (Rosemary) communicator, the name and e-mail addresses only are included on the received name card.

Note: Magic Cap 3.1 (Rosemary) communicators cannot beam data to Magic Cap version 1.0 and 1.5 communicators.

Contact
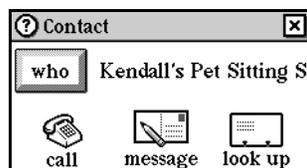
Touch *contact* to use one of the options in the Contact window.

- Touch *who* to select the person you want to contact.

- Touch *call* to see the Call window where the telephone numbers are displayed for the person you selected. You can touch one of the displayed numbers to dial the number and open the Phone status window.

- Touch *message* to create a message addressed to this person.

- Touch *look up* to look at the person's name card.

Fax

Touch *fax* to open the Fax window in which you can select a recipient and the faxing options.

File

Touch *file* to file the item currently on the screen.

Mail

Touch *mail* to mail the item currently on your screen to someone.
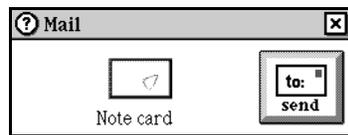
- A chooser appears if there is more than one object that can be mailed from the scene.

- From the Mail window, touch *send* to open a new message and select a recipient.

- When mailing a code package, the chooser appears in the Mail window to allow the user the option of mailing the package with or without (default setting) changes.

Japanese Magic Cap: Mail window

In Japanese Magic Cap, the send button's image in the Mail window is localized:
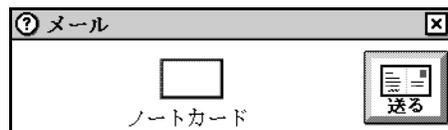
Print

Touch *print* to print what's currently on the screen.

Revert

The revert feature was removed in Magic Cap 3.1 (Rosemary).

Search

This command was previously named "find." Touch *search* to summon the search dog and open the Search window. The results of the last search will appear in the window.

Snap

The snap command allows you to take a snapshot of the current scene so that you can create a navigation shortcut to quickly get from one scene to another. Place the snapshot in the scene or place in which you want to access its scene. Touch the *snapshot* to go to that scene.

Communicating window

This window appears when you request a connection to a service provider. The communicating window shows progress and status information.

Actions from the communicating window

- Touch *cancel* to cancel the requested action and disconnect from the service provider. If you specified a connection to more than one service provider, touching *cancel* effects the current service provider only.

- Status messages appear for various outcomes, such as cancelled download requests and URL location changes.

Date chooser windows

One of the date chooser windows appears whenever you can select a date.

Actions from the date chooser windows

- The date chooser displays a calendar page with today's date highlighted.

- Select the month using the upper set of arrows.

- Select the year using the lower set of arrows.

- Touch one of the boxed numbers to select it as the date.

Desk accessories drawer

The drawer at the right side of the Desk contains the calculator. Third party packages might be designed so that the Desk accessories drawer contains an icon or button that the user touches to access that software application.
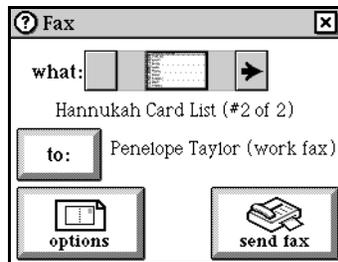
Fax window

The Fax window opens when the user touches *fax* from the Magic lamp.

Actions from the Fax window

- The item that appears on the screen when the user touches *fax* is automatically selected as the thing that is to be faxed. A choice box appears if more than one item can be faxed from the current scene.

- Touch *to:* to open the Choose a name window and select a recipient.

- Touch *options* to open the Fax options window.

- Touch *send fax* to send the item to the specified fax number.

Fax options
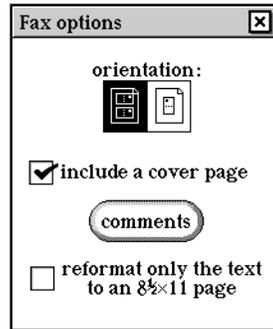
- Select an orientation for the page by touching the landscape or portrait image.

- To include a cover page, touch the checkbox for include a cover page. A comments button appears when this setting is switched on. Note that stamps, scribbles, and writing on a cover page will not be faxed, only typed text.

- Touch *comments* to include a typed comment or delivery instructions on the cover sheet.

- Touch *reformat only the text to an 8.5 x 11 page* to reformat the text of messages and notebook pages so that the text expands to fit on an 8.5 by 11 page (appears when portrait orientation is selected).

  When this option is switched on, the text of a message or notebook page expands to fit onto an 8.5 x 11 piece of paper and the border that appeared on faxes in version 1.0 will not appear. The recipient gets a text-only message that looks as if it was faxed from a computer rather than receiving an image of a message complete with stamps and a border representing the boundaries of the communicator screen.

File window
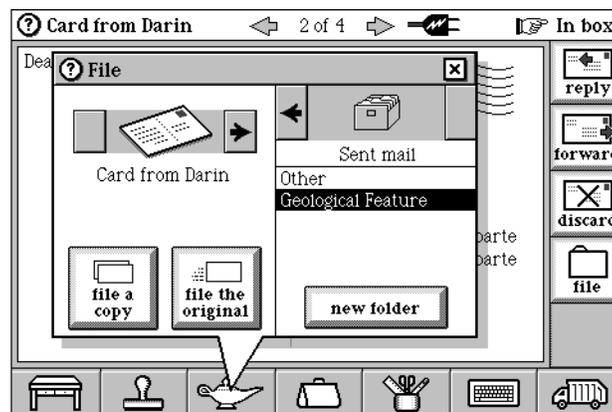
Items that can be filed use the File window when the user touches *file* either from the scene or from the Magic lamp.

Actions from the File window

- The item that appears on the screen when the user touches *file* is automatically selected as the thing that is to be filed. Arrows appear if more than one item can be filed from the current scene.

- Use the chooser to specify which container the item is to be filed to. The default is the last place you filed into. The choices are drawers in the File cabinet, Built-in storage, and a storage card (if installed).

- Once you've selected the container, select one of the destinations from the list that appears below the container chooser. For drawers, a button labelled new folder appears so you can file to a new folder. For Built-in storage and storage cards, a button labelled new package appears so you can file to a new package.

- Touch *file a copy* to file a copy of the item.

- Touch *file the original* to file the item and remove it from its current location.

Filing into Built-in storage
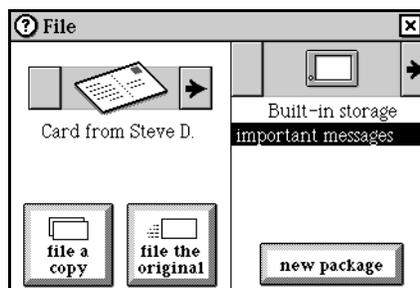
In Magic Cap version 1.5, when a card or appointment that's in a package is offered as a filing choice in the File window, Built-in storage now appears in the destination list. If you select *Built-in storage* and touch *file a copy* or *file the original*, the item will be removed from whatever package it was in and filed into one of the six system storage boxes on the built-in storage shelf in the Storeroom: *appointments*, *name cards*, *received mail*, *sent mail*, *note cards*, or *miscellaneous*.

In Magic Cap version 1.0, cards can be filed from built-in storage into packages with the File window, but can't be filed from a package back into built-in storage.

Folder and new package buttons
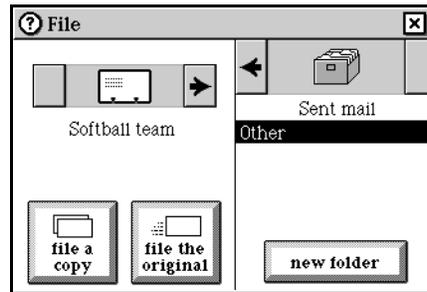
The File window now has two buttons, *new package* and *new file*, that open a window to let you create a new folder or package in which to file an item. If the chosen container is a drawer in the file cabinet, the button is labeled "new folder." Pressing it creates a new folder in the chosen drawer, unless the drawer is full. If the chosen container is a storage card or built-in storage, the button is labeled new package. Pressing it creates a new package on the storage card or in built-in storage.

In Magic Cap version 1.0, if the chosen container is a storage card or built-in storage, the list below the choice box contains an item called "new data package", which is initially highlighted. If you then accidentally touch *file a copy* or *file original*, you suddenly find yourself in the Storeroom, where a window opens to let you name the new package that you suddenly find yourself creating. In Magic Cap 1.0, you also can't create new folders from the File window.

Remembering last choice in File window
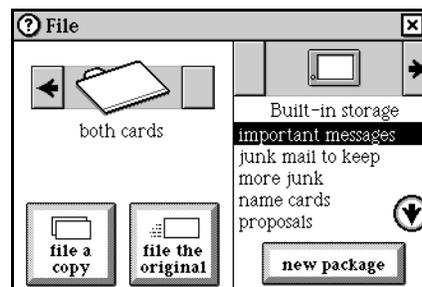
The File window now remembers your most recent destination choice. For instance, if you file something into a package named "important messages" in Built-in storage, then the next time you file something, you'll see "Built-in storage" at the top of the choice box at the right side of the Filing window. Just below "Built-in storage," you'll see "important messages" highlighted in the destination choice list, which in Magic Cap 1.5 is now alphabetized.

In Magic Cap version 1.0, you always see the "Sent mail" folder at the top of the choice box and "Other" highlighted in the list below it, unless you have a storage card installed. In that case, you see the storage card and "new data package" highlighted in the destination list.

Keyboard window

Actions from the Keyboard

For information about using the Japanese keyboards, see "Japanese keyboard types," on page 153.

- Touch the *Keyboard* image at the bottom of the screen, or touch a typing area or typed text to open the Keyboard. If there is a typing area in the scene, it's automatically selected.

- The Keyboard can display a variety of alphanumeric characters and symbols. These are the modes: characters (both lowercase and uppercase) and punctuation, numbers and more punctuation, a@b for typing e-mail addresses and web page URLs, symbols, and accents.
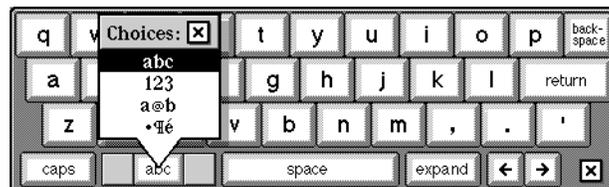
See   **"Keyboard types" on page 152.**

- Touch *expand* to ask Magic Cap to guess the rest of the word being typed or to expand an abbreviation. *Option*-touch *expand* repeatedly to see more guesses. Words in the Typing & Text book are used for guesses.

- *Option*-touch *expand* to add the characters between the typing point and the preceding word break to the appropriate section of Typing & Text (after confirmation).

- Touch a letter or punctuation key to produce that character.

- Touch *backspace* to delete the selection or the character to the left of the typing point.

- Touch *return* to produce a carriage return (in Unicode, U+000A).

- Touch one of the arrow keys to move the typing point.

- Touch *caps* to highlight the caps key and shift all letter keys to uppercase; comma shifts to semicolon, period shifts to colon, and apostrophe shifts to question mark. The *caps* key is highlighted when uppercase mode is on and not highlighted when lowercase mode is on. To type a single uppercase letter, touch the *caps* key. The caps key is highlighted to show that the uppercase keyboard is active. Touch the key for the letter you want. The Keyboard automatically reverts to lowercase

mode. Alternatively, you can hold down option while typing to type an uppercase letter. In Magic Cap version 1.5, when you hold down *option*, the letters displayed on the keyboard keys change to uppercase.

- Hold down *option* while typing to type an uppercase letter. When you hold down option, the letters displayed on the Keyboard keys change to uppercase.

- To type several uppercase letters, hold down *option* and touch the *caps* key. The caps key is highlighted, and the Keyboard is locked in uppercase mode. Touch *caps* again to unlock the Keyboard and return to lowercase.

- Touch the *abc-123* switch change the letter and punctuation keys to the digits 0 through 9 plus these characters:?! @ # $ % ~ & * ( ) _ – * + = ' " . : /

- *Option*-touch *abc-123* switch. It becomes a choice box with these choices: abc, 123, special characters. *Option*-touch the *choice box* to change it back to abc-123 switch.
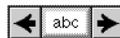
- If a physical keyboard is attached to the communicator, the on-screen Keyboard never appears automatically.

Typing accents and other special characters

To type a character with an accent, first type the character and then switch to the accents keyboard and type the accent mark. To type an accented character, first type the character you want.

Hold down *option* and touch the *abc/123* switch. The image changes to display arrows in place of the switch. Touch one of the *arrows* until the symbols keyboard appears.

To type a single accent, hold down *option*. The Keyboard changes to show the accents that are available. Type the accent you want.

To type several accent characters, touch *accents* in the lower left corner of the Keyboard.

The Keyboard changes to show the accent characters that are available. Type the accents you want, then *option*-touch the *abc/123* to return to the lowercase letters keyboard

Keyboard types

a@b

Accents

Lower case

Numbers and punctuation

Symbols

Upper case
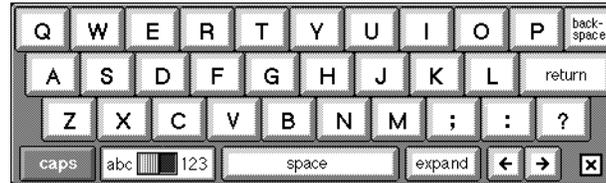
Japanese Magic Cap: Japanese keyboard types

Introduction

Japanese Magic Cap provides for entry of Japanese *kana* (phonetic syllabary) characters, Japanese *kanji* (pictographic) characters, JIS symbol (non-kanji) characters, and Western (Latin) alphanumeric and symbol characters. Japanese Magic Cap includes an extensive set of virtual (on-screen) keyboards in order to input these characters. Keyboards for Japanese input include kana (50 sounds, or *gojuon*), romanized input of kana (romanized, or *romaji*), handwriting recognition (HWR, or *teshoninshiki*), and JIS (0208) special character (symbol, or *kigou*). Keyboards for Western character input include alpha, numeric, and symbol. In total, there are some 18 keyboards or variants.

Input methods

Input method refers to a multi-step process of keyboarding, converting, and commiting text input. A multi-step process is required because Japanese includes many thousands of characters that must be entered using keyboards with a few dozen keys. There are different input methods to provide the user some flexibility. In Japanese Magic Cap, entry of Japanese characters is provided via direct kana input, romanized kana input, and handwriting input. Data entered by each of these entry methods has access to Kana to Kanji Conversion (KKC). With handwriting input, the recognition engine may provide direct conversion from ink to kanji, but KKC is available to allow re-conversion by the user as neccesary.

Keyboard selection

Selection from amongst the complete set of keyboards is via controls at the bottom of each keyboard to the left of the space bar. Every keyboard displays a group of four buttons immediately to the left of the space bar. These four buttons are used to select the type (category or mode) of keyboard. To the left of these four buttons is an additional control used to select a variant keyboard within the type. This control is different depending on the keyboard type being displayed.

There are six types of keyboards that can be selected using the group of four buttons. Touching one of the buttons will switch to the default keyboard for the type identified by the label on the button. The button labels, and thus the keyboard type to be selected, is user controlled. Holding the option key and then tapping the button will display a choice list showing the six keyboard types. Touching one of the choice list entries will select that keyboard type and will at the same time set the keyboard label and type to be selected whenever that button is touched.

The following keyboard figure shows the four type selection buttons, a keyboard type choice list displayed for one of the buttons, and the keyboard-type specific selection switch to the left of the four buttons. For the keyboard in the figure, the switch toggles the display between the *hiragana* and *katakana* keyboards.

Input buffer

There is a visible input buffer area at the top of every keyboard. The purpose of the buffer is to support conversion of kana characters to kanji characters as described in the following section on KKC. When kana characters are input, they appear in this buffer area rather than in their target text area (e.g., Telecard message area) until the user explicitly transfers, or commits them. When entering data using the 'abc', '123', or any of the symbol keyboards, the input buffer is normally bypassed (entered data is written directly to the target text area). However, in the case that the input buffer is not empty at the time of switching to one of these keyboards, the input buffer remains active and data appears in the buffer rather than in the target text area.

When the buffer contains data, the cursor can be moved around the buffer using the arrow keys or by touching a specific location in the buffered string. Cursor movement is suspended while KKC is in process.

The input buffer will hold a maximum of 25 'full-width' Japanese characters or 50 'half-width' Japanese or Latin characters.

The expand button does not work while the cursor is in the input buffer.

þKana to Kanji Conversion (KKC)

KKC is supported for characters in the input buffer only; 'inline' KKC is not supported. Once characters are commited, or transferred from the keyboard buffer to any object text area, KKC for those characters is no longer possible.

Characters input using any of the kana, romaji-kana, or HWR keyboards appear underlined in the input buffer. Underlined characters are considered the conversion target. The conversion target begins at the first character in the buffer.

When there is a conversion target, labels for some of the control keys change to reflect operations on the target. The process of KKC goes generally as follows:

- When a conversion target is created, the 'space bar' label changes to read 'convert' (*henkan*), and the 'next line' key label changes to read 'no convert' (*muhenkan*).

- When the 'convert' key is pressed, the target first segment (*bunsetsu*) changes to the first choice candidate kanji, the underlining changes to only the newly converted characters, the 'convert' key label changes to read 'next candidate' (*jikoho*), the 'no convert' key label changes to read 'decide on' (*kakutei*), and the backspace key label changes to read undo (*torikesu*).

- When the option key is pressed while a conversion candidate is displayed, the 'next candidate' key label changes to read 'previous candidate' (*zenkoho*), and the 'decide on' key label changes to read 'decide on all' (*zenkakutei*).

- When the next candidate key is pressed twice, or the candidate itself is touched, a list of all candidates for the conversion target is displayed above the keyboard.

- When the return (next line/no convert/decide on/decide on all) key is pressed, the conversion target is transferred to the text target area and KKC is no longer possible on the transferred characters.

The following figures illustrate the KKC process described above and shows the associated key label changes.

Keyboard before any character input:

Key label appearance with initial conversion target

Key label appearance with kanji candidate displayed:

Key label appearance with kanji candidate displayed and option button pressed:

Candidate choice list display:

Hand Writing Recognition (HWR)

HWR is supported with a keyboard that has four areas for writing individual characters. Handwritten characters appear in the input buffer and the keyboard includes keys for converting, re-converting, and commiting the written characters the same as other keyboards.

The HWR keyboard also includes an optional switch that allows the user to specify written characters be recognized as 'only hiragana', or 'any character'. The switch is for use with handwriting engines that may provide better recognition accuracy when set to recognize only hiragana characters. This switch appears in the lower left corner of the keyboard in the same place as the type specific keyboard selection control for other keyboards. The switch is optional in that the handwriting engine implementor can control whether it appears on the keyboard at all.

Keyboards shown by type including variants

This section shows each available keyboard ordered by type. This includes all variants for each type.

Latin alphabet keyboards (type=abc)

alpha lower case:

alpha upper case:

Latin number and symbol keyboards (type=123)

numeric:

symbol:

50 sounds keyboards (type=50on)

hiragana:

katakana:

hiragana komoji:

katakana komoji:

Romaji keyboard for romanized input of kana (type=romaji)

The switch at the lower left of the romaji keyboard does not change the appearance of the keyboard but does change the operation of the keyboard between hiragana and katakana output.

JIS special symbol keyboards (type=kigou)

Seven JIS special symbol keyboards provide for input of all non-kanji JIS characters.

number (bangou):
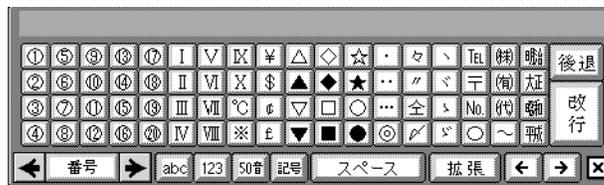
parenthetic (kakko):

rule line (keisen):

English (tohabaeiji):

Europe (oshuu):

Greece (girisha):

Russia (roshia):

Labelmaker

- *Option*-touch the *Keyboard* image at the bottom of the screen to open the Labelmaker. The Labelmaker allows you to create a text coupon you can use to label an object that will accept a label.

- Type the label and the characters you type appear to the left of the Labelmaker.

- To tear off the label, slide it away from the Labelmaker and drop it on the object you're naming.

Magic hat
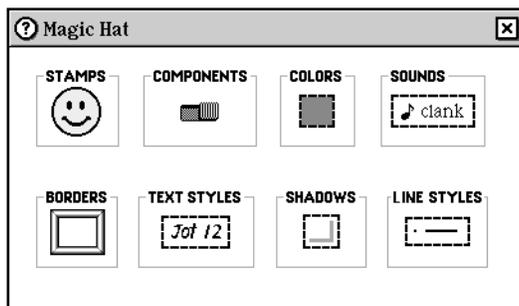
When construction mode is enabled, a Magic hat appears in the place of the Stamper at the bottom of the screen. Touch the *Magic hat* to see the Magic hat window.

There are two varieties of categories: construction objects and coupons. Construction objects include the stamps found in the Stamper and include the objects in the Components category. Components are like stamps in that you drop them from the Magic hat onto the card or scene you were last in and they appear there. Some components such as switches, choices, and text fields can be customized and used on messages. Other components, such as clocks and icons, represent features in the Magic Cap software; when touched, they perform the task for which they were designed.

Coupons, on the other hand, modify other objects when you drop them. For example, dropping a color coupon on an object that can have its color changed changes the object's color—the sky Downtown, for example.

- The Magic hat contains these categories: Stamps, Components, Colors, Sounds, Borders, Text Styles, Shadows, Line styles.

Actions from the Magic hat

- Touch one of the eight categories to open that construction tool's window.

- *Option*-touch in the *title bar* to toggle between the Stamps window and the Magic hat window. You can also enable construction mode from the General control panel.

- Touch the circled question mark or the scene name at the top of the window to read information about the Magic hat window.

- Touch the *closer* to put away the window.

Stamps

The Stamps window contains the same stamps you see when construction mode is disabled and you touch the *Stamper* at the bottom of the screen.

Components

- The components available are: Buttons, Switches, Choices, Text, Clocks, Boxes, Shapes, Icons.

- Touch a drawer to see its contents.

- Touch the drawer chooser to see additional drawers.

- Touch an item to place it on the screen you were last looking at.

- Use the move tool to reposition a construction mode tool.

Boxes
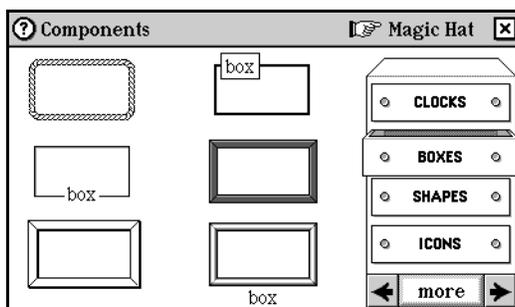
Boxes are useful for organizing groups of other objects. Each box has a border and is a particular color. They're different from text fields in that boxes are primarily organizational. They're designed to group objects together, not text. If you place objects in a box, when you move the box, its contents move along with it.

Buttons
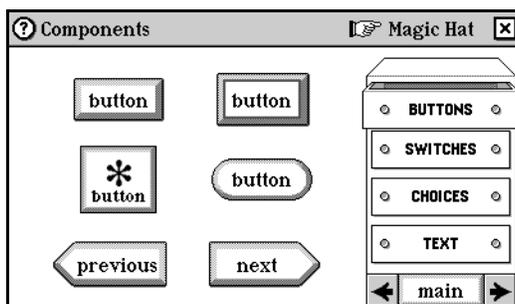
- In the Magic Cap software, you touch buttons to perform some action. Buttons have two states: normal and highlighted. The highlighted state is temporary and only lasts while the button is being touched. After that, it returns to its normal state. The buttons available in this drawer are decorative. You can change the button's label, but unless you are using the Magic Cap developer's environment, you can't assign an action to it.

Choices
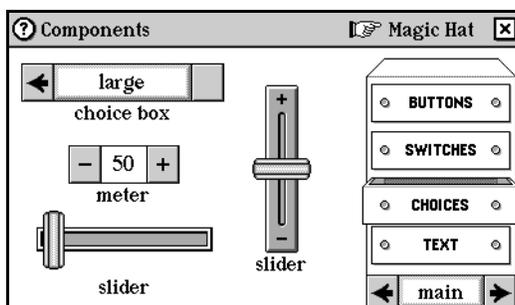
- You can use a choice box to select between options in a list; you can use a slider to adjust on a continuous scale; or you can use a meter to select a numeric value.

- To rename a choice in the choice box, use the Labelmaker of the Keyboard to create a text coupon and then drag the text coupon on top of the choice that appears.

- To add more choices to a choice box, use the Labelmaker to type each choice followed by a return, and then drop the text coupon onto the choice box.
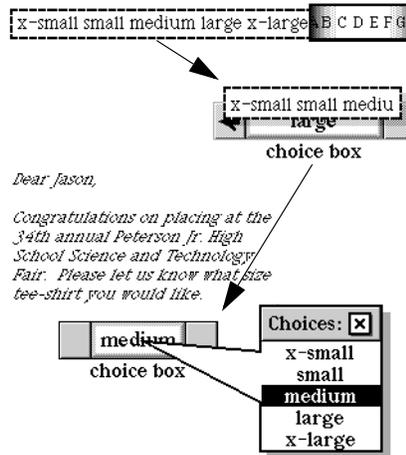
Clocks
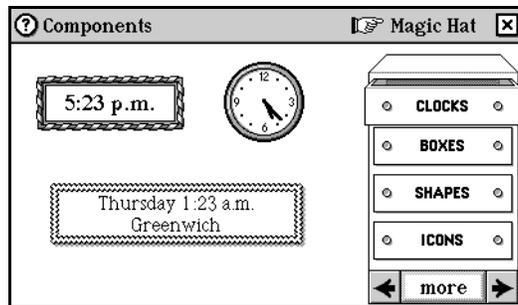
Clocks tell what time it is based on the time stored in the communicator. They come in several different shapes and sizes. Some are analog, some are digital. Some clocks display the time zone. You can replace the Clock that appears on the Desk with one of these or put a clock in another scene.

Icons
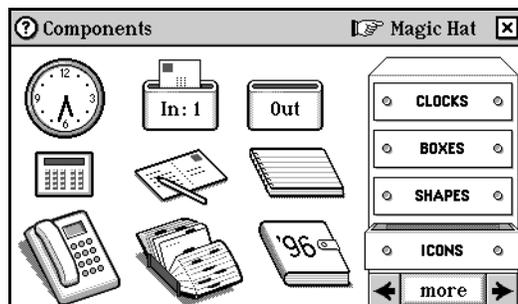
The icons drawer contains a group of icons used in the Magic Cap software.

• Drop an icon in a different place to conveniently access the feature it represents.

Shapes
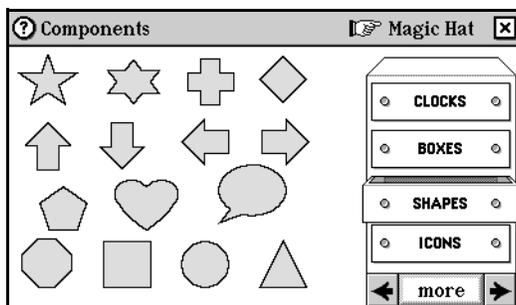
Shapes are predefined objects that share some properties of boxes: they can contain other objects and they have a border and a color.

• When shapes are stretched with the stretch tool, they maintain their shape while being scaled horizontally or vertically.

Switches
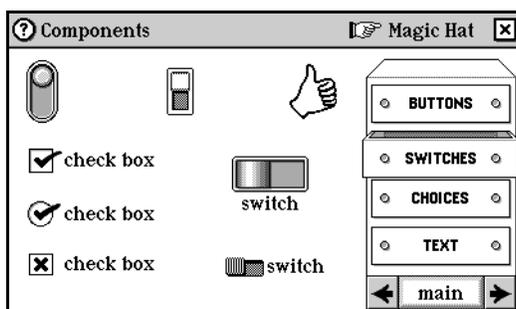
• A switch is a control with two positions. You change a switch's position by touching it. Switches are useful for creating custom messages.

• To change the label of a switch, drop a text coupon on it.

• Drop a sound coupon on a switch to change the sound it makes when touched.

Text
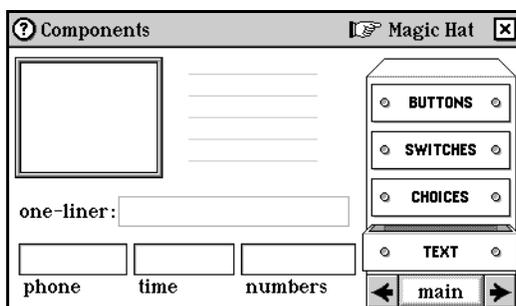
Text fields contain typed text. Text has many characteristics that you can set: typeface, size, style, and alignment. Some text fields can contain many other kinds of objects, including shapes, stamps, animations, and even other text fields; objects remain inside of a text field when you move it. If an object is inside a text field and overlaps the field's edge, only the portion of the object that is inside of the field will appear and will move along with the text field.

- To edit the text in a text field, touch in the text field and then touch the *Keyboard* to type.

- Set the characteristics of a text field with the coupons in the text styles category box.

Coupons

Coupons hold attributes that you can apply to viewable objects. For example, to change the color of an object you would drop a color coupon on it. Each coupon is good for one change to a setting for a viewable object.

A coupon has a thick dashed border around it. When you drag a coupon over an object, the object becomes highlighted if it can accept the coupon. If it doesn't become highlighted, the object can't do anything with the coupon. For example, you can't drop a border into a stamp, so the stamp doesn't become highlighted when you drag a border coupon over it.

Some objects have multiple parts and you can drop coupons onto each part to perform different functions. For example, boxes have content and border parts. You can drop different color coupons onto the border and the content, setting them to different colors.

These are the categories of coupons: Colors, Sounds, Borders, Text Styles, Shadows, Lines.

Borders

Use a border coupon to change the appearance of an object's border. Use the no border coupon to remove the border from an object. Some objects that accept borders are boxes, text fields, and meters.

These are the types of border coupons: basic, lines, fancy, objects, misc.

- Drop a border coupon on an object that has a border or can accept border coupons to change to the style of the border coupon.

- If the object is a page or a card—a notebook page or a message, for example—all of the cards of the type will be changed to use the new border type, so a confirmation window appears.

Basic
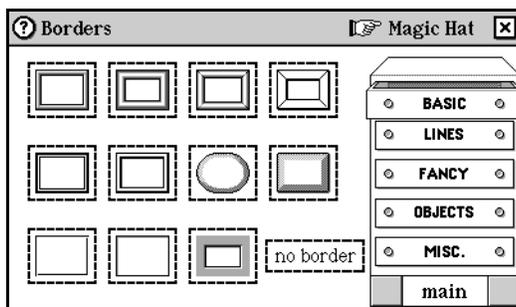
The basic border drawer includes the no border coupon, which you drop onto most objects to rid them of an existing border.

Fancy
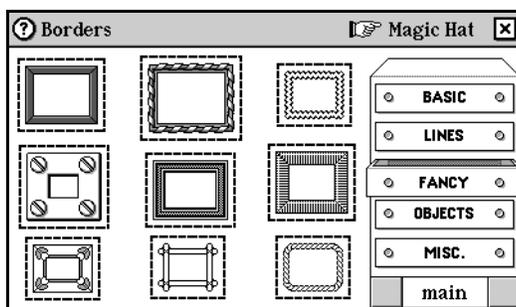
• Drop a fancy coupon onto an object to change the object's border.

Lines
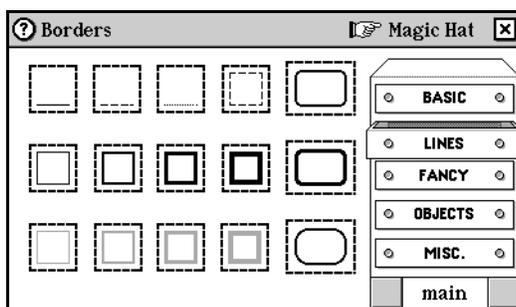
These are the simplest borders. They are easy to draw and are widely used in MagicþCap.

• Drop a line style coupon onto an object to change the object's border.

Misc.
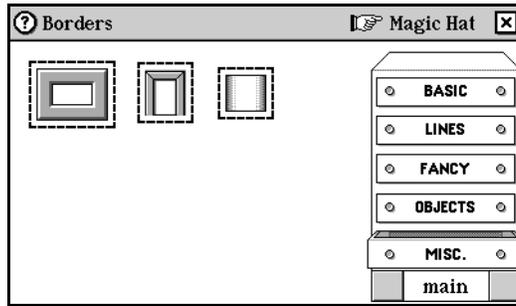
The misc. drawer contains extra borders.

Objects
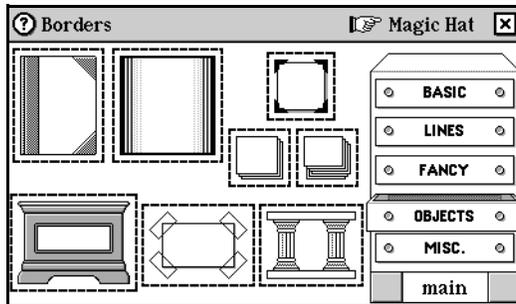
The objects drawer contains more borders—the book borders, for example

Colors
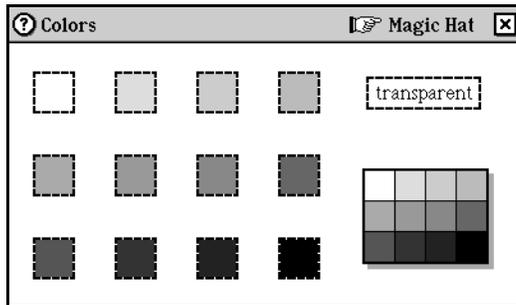
You can change the color that fills an object by dropping a color coupon onto it. Most objects accept color coupons. The color coupon category of the Magic hat also contains a color palette. Drop the color palette into a scene so you can try out different shades on an object without having to return to the colors category of the Magic hat to get individual color coupons.

- Drop a color coupon on a stamp to change the stamp's foreground color.

- Drop a color coupon on a stamp while holding down the Option key to change the stamp's background color.

- Use the transparent coupon to remove the foreground or background color.

- Drop the color palette into a scene to try out different shades.

- Once the color palette is in the scene, drag one of the colored boxes to create a coupon of that color and then drop the color coupon on top of an object to change its color.

- Use the move tool to remove the palette from the scene when finished.

Sounds

A sound coupon specifies a digitized or synthesized sound. You can drop sound coupons onto most viewable objects, so that the objects play the sound you chose when they're touched. To hear the sound in a sound coupon after you have dropped the coupon in a scene, touch the coupon. If you don't specify a sound, switches play the "switch sound" and buttons play the "touch sound" when touched.

- The sound categories available are: standard, instruments, songs, phone, more.

- Touch a drawer to see its contents.

Instruments
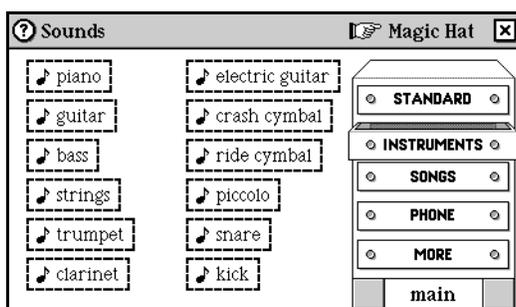
The instruments drawer contains coupons representing all the synthesized musical instruments that are part of the Magic Cap software. These are the instruments used for making MIDI songs.

- Drop an instrument coupon onto an object to change the sound the object makes when touched.

More
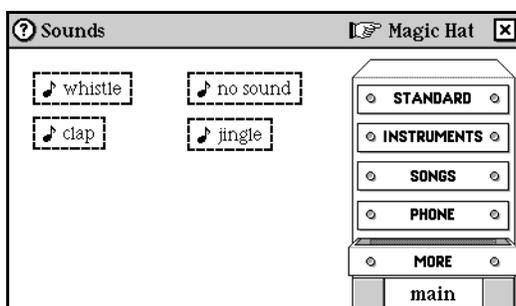
The *more* drawer contains extra sounds, including the ever-popular no sound coupon, which you can use to silence an object.

- Drop the *no sound* coupon on an object so that it makes no sound when touched.

Phone
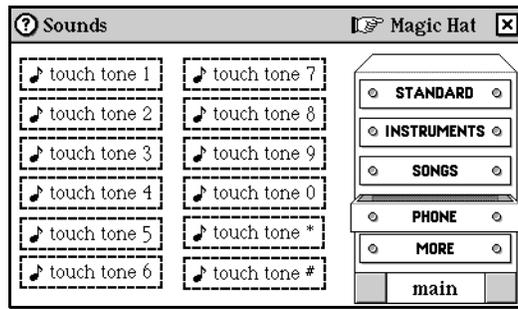
The *phone* drawer contains the various sounds a touch tone phone makes.

- Drop one of these onto an object so that the object plays the sound when touched.

Standard
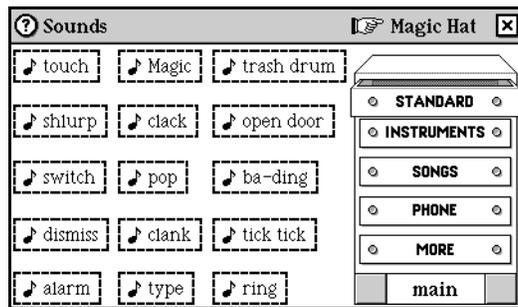
The *standard* drawer contains the sounds used for various objects in the Magic Cap software. You can drop these coupons onto an object to change the sound that object makes when touched.

- Drop a coupon on an object that can accept a coupon to change the sound it makes when touched.

Songs
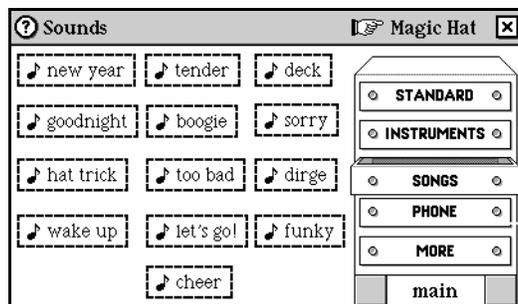
The songs in the *songs* drawer use the instruments in the instruments drawer to make synthesized music.

- Drop a song coupon onto an object so that the object plays the song when touched.

Text coupons

Text coupons are not part of the Magic hat but they share the same characteristics as other coupons.

Text styles

Drop a text style coupon on text to change its typeface, size, or style (obliqueness, weight, and underlining).

Text style coupons come in several flavors. Probably the most useful are complete font coupons, which combine a type style and face with a size—Book 18, for example, is an upright (Roman), 18-point version of the serif typeface Book.

Magic Cap includes five basic bit map faces: a serif face (Book), a sans serif face (Sign), a handwriting-style face (Jot), a titling face (Fat Caps), and a serif face (Typewriter). Coupons are available in the Magic hat so that the user can apply any of the available sizes of these faces to text displayed on the screen.

- Book has these sizes: 10, 12, 14, 18.

- Book has these other sizes and styles: 10 bold, 10 italic, 10 underlined, 12 bold, 12 italic, 12 underlined.

- Sign has these sizes: 8, 10, 12, 14, 18.

- Sign has these other sizes and styles: 12 underlined, 12 italic, 14 underlined, 14 italic.

- Jot has size 12.

- Fat Caps has size 12.

- Typewriter has size 10.

Japanese Magic Cap: Japanese fonts

Note: The following information has changed and has not been updated in this chapter of the specification. For the latest version, please refer to "2.7 Fixed width fonts," on page 293 of Appendix A "Japanese Feature Enhancements in the November Release."

Japanese Standard Glyph Set: *As a Japanese glyph set,* Magic Cap *2.0 Japanese supports alpha numerics, Kana, half-width Katakana for compatibility, full width alphanumerics for compatibility, JIS symbols, JIS X0208 level 1 and 2 kanji which is roughly 6,300 characters.*

Type Faces and Sizes: In addition to the fonts listed above in Text styles, the Mincho type face is used with Book alphanumeric glyphs. Gothic type face is used with Sign. Although we support Mincho and Gothic typefaces, we only have Mincho Kana and Kanji glyphs. Here is the list of glyphs we support in the Magic Cap 3.1 (Rosemary) Japanese reference release:

Size	Mincho	Gothic
8 pt	none	6,300 characters
10 pt	6,300 characters	alphanumeric only
12 pt	6,300 characters	alphanumeric only

Size	Mincho	Gothic
14 pt	6,300 characters	alphanumeric only
18 pt	6,300 characters	alphanumeric only

Italic and bold are also supported with Kana and Kanji fonts.

These are the types of text styles coupons: plain, big, styled, fancy

Big
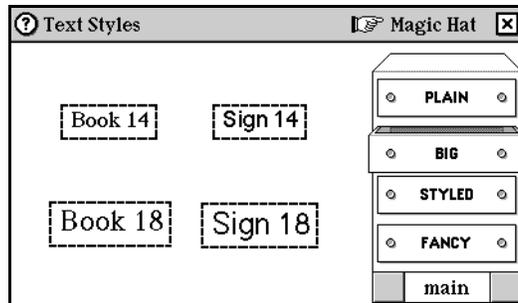
The *big* drawer contains the larger sizes for the fonts Book and Sign.

Fancy
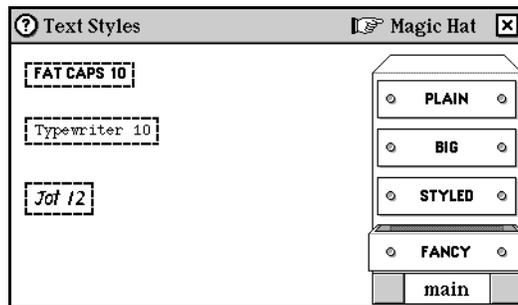
The *fancy* drawer contains three special-purpose typefaces, Fat Caps, Typewriter 10 and Jot. Jot looks like handwriting. Because it is monospaced, Typewriter 10 can be used to create documents in Magic Cap whose layout depends on constant character widths. It can also be used to accommodate existing information services or networks that use older computer terminals on which all characters are of equal widths. Fat Caps is an all-uppercase face that can be used to fit labels in tight spaces.

Plain
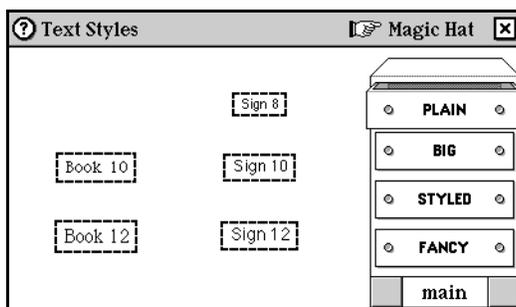
The *plain* drawer contains the two fonts Book and Sign in their smaller sizes. Book is a simple proportional serif typeface. Many people find that the serifs on Book make the face look a little more personal and relaxed than the austere Sign. Sign is a basic sans-serif typeface. Many people find it is easy to read on the screen even at small sizes.

Styled
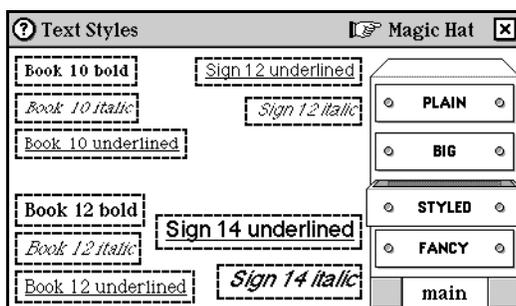
The *styled* drawer includes sophisticated versions of the basic text styles, including underlined, bold, and italic.

Shadows
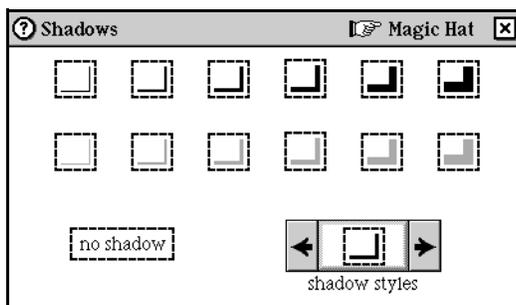
Many objects are drawn with shadows to give them a three-dimensional look. You can use shadow coupons to change a shadow's appearance or to remove a shadow.

• You can drop shadows onto most objects.

• Drop the *no shadow* coupon on an object with a shadow to remove the shadow.

- Drop the shadow styles chooser into a scene to try out several different types of shadows without having to return to the shadows category each time to select individual shadow coupons.

- Use the move tool to remove the shadow style chooser from the scene when you're done.

Line styles
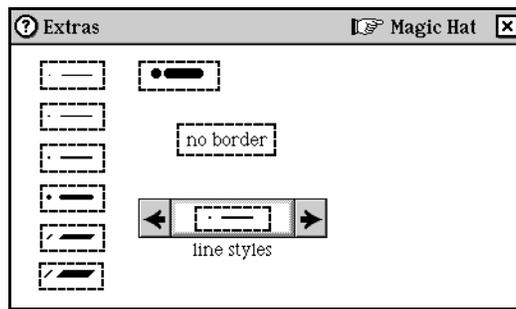
- Drop a line style coupon onto a line, shape, or scribble to change the shape and thickness of the line style of the border that's drawn around it, or to change a line drawn with the line tool.

- Drop the line styles chooser onto a scene, select the line style you want in the chooser, and then drag coupons out of it and onto objects to change the line style.

- Use the move tool to remove the line styles chooser from the scene when you're done.

Name chooser windows

In the areas of the Magic Cap software where you can select a recipient—addressing a message, for example—one of the name chooser windows opens. Depending on what you are doing, you'll see the Address to window or the Choose a name window. These windows list all of the names of people, companies, and other contacts from your Name card file. The name chooser windows are integrated with the other objects in Magic Cap to make it easier and more convenient to use. For example, when you use the Telephone on your communicator, any telephone numbers available for the person selected are listed.

The name chooser windows incorporate some or all of the following:

Actions from the name chooser windows
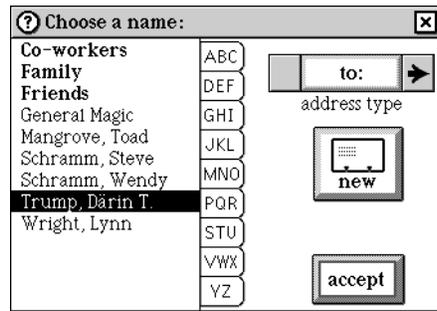
- Touch a name to select it.

- Slide through the list to scroll and select a name.

- Touch an *arrow* to scroll.

- Touch a *letter tab* to display the corresponding part of the list.

- Additional choosers may appear which allow you to indicate more detail—
  Telephone stamps when you are choosing a name of someone to call, or the
  choose recipient button when automatically forwarding messages from the service
  mailbox.

- Touch *accept* to confirm the selected name and close the window.

- *Option*-touch *accept* to add the current selection without closing the window.

- Touch *new* to begin the process to create a new name card. In Magic Cap 3.1
  (Rosemary), the addressing information is requested before the name to speed up
  the process, because sending a message or making a phone call doesn't require a
  name to go along with the e-mail address or phone number. If you close the
  window before completing the steps to add a name to the name card, Magic Cap
  uses the address itself as the name when displaying the people picker.
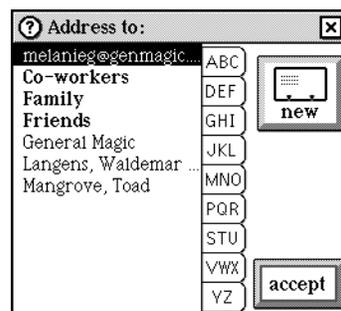
The Japanese usability study team reported that a number of people touched the *new* button instead of the *accept* button when they finished specifying an addressee. The team analyzes that this is because when they are creating a new message, people see "new" as contextually closer than "accept." Therefore, we changed the title of the window to "select addressee" and changed the *accept* button to *selected* or *selection done.*
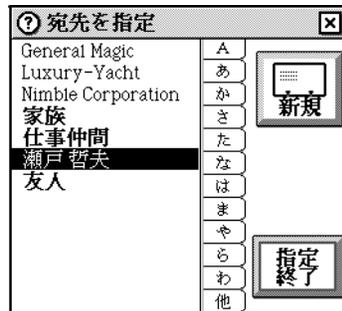
Print window
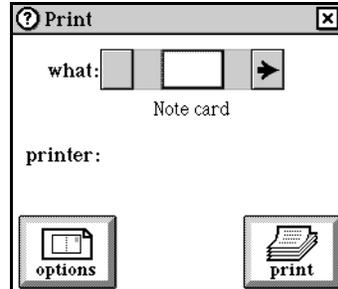
Items that can be printed use the Print window when the user touches print from the Magic lamp.

Actions from the Print window

- The item that appears on the screen when the user touches *print* is automatically selected as the thing that is to be printed. A chooser appears if more than one item can be printed from the current scene.

- Touch *options* to see the Print options window. In the Print options window, select the page orientation (landscape or portrait), the number of copies, and whether to reformat the text of messages and notebook pages so that the text expands to fit on an 8.5" by 11" page (appears when portrait orientation is selected). When the *reformat only the text to an 8.5 by 11 page* option is switched on, the text of a message or notebook page expands to fit onto an 8.5" by 11" piece of paper and the border that appeared on printed pages in version 1.0 will not appear. What is printed is a text-only message that looks as if it was printed

from a computer rather than receiving an image of a message complete with stamps and a border representing the boundaries of the communicator screen.
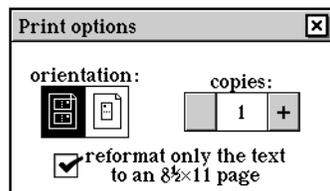
- Touch *print* in the Print window to send the item to the printer specified.

Rules window

There are really two windows associated with rules: the window that lists the rules for a scene when you touch the rules icon, and the window in which you change, copy, and discard a rule. For information about rules specific to a scene or element in Magic Cap, refer to that section in this specification.

Actions from the Rules window
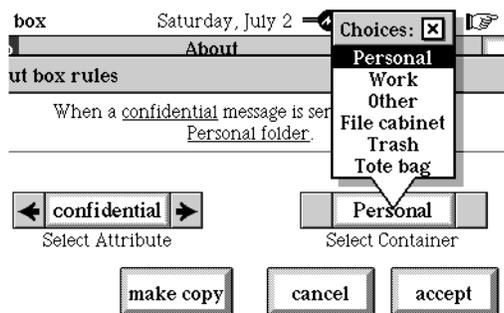
When you touch on a rule in the list of rules for a scene, a window similar to the one above opens.

Adding new rules

Users can add rules by changing an existing rule to suit their needs and then making a copy of it so that it is added to the list of rules available.

- To add a new rule, select an existing rule, modify its settings, and then touch *make copy* to add the rule to the list.

Discarding rules

Rules that come with the Magic Cap software cannot be removed. Only those rules that users add by customizing existing rules can be removed.

- To remove a rule, select the rule, touch *discard,* and then touch *yes* in the confirmation window that appears.

Edit rules

Underlined text in a rule represents a setting that can be edited in some way. Rules with no underlined text cannot be changed; they can only be switched on and off. Some rules have choice boxes that allow users to select an option, and some rules have text boxes in which users type the criteria for the rule.

- In a choice box, a user touches one of the arrows to move forward or backward through a list of options, or touches the word that appears between the arrows to see the entire list and then selects the option.

- If a text field appears, a user can change the text used as the criterion in the rule by typing over it.

- If a button appears, a user touches it to open its window and selects a new criterion for the button.

- Touching *accept* returns to the list of rules. Opening a rule to edit it automatically switches the rule on if it was off. A checkmark in the box indicates that the rule is switched on.

Order of rules

In some cases, the order in which a rule appears in the list of rules determines whether it executes. For example, in the Out box rules, if rules 3 and 4 (two rules for filing sent messages) are both switched on, only rule 3 is executed, resulting in a message being filed in the "Other" folder in the Sent mail drawer of the File cabinet. If the order of rules 3 and 4 are reversed so that rule 4 appears before rule 3 in the list, only rule 4 will execute. Users can change the order of rules by creating a rule coupon.

- To change the order of rules in a list of rules, option-slide a rule (creating a rule coupon) to a new position in the list.

Search window
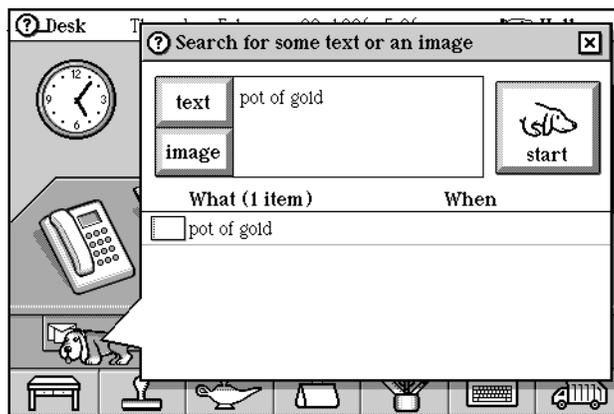
In the Magic lamp, touch *search* to search for text or an image.

Actions from the Search for some text or an image window

- Touch the *text* button or touch to the right of the button to open the Keyboard and type the characters to search for.

- To edit the text to search for, touch it to reopen the Keyboard.

- Touch the *image* button to search for an image. The Search window closes and the Choose an image window opens instructing you to touch the image you want to search for. This image must be on the current screen. If it is not, dismiss the window and go to a screen that has the image you want to search for.

- When you touch the image you want to search for, it appears in the search window.

- Slide a stamp onto Sniffy or into the search criteria window, next to the image button to search for that image.

- Touch *start* to begin the search for the item in the window. While the search is progressing, the *stop* button replaces the search button and helpful text appears instructing you to tap the stop button if you want to discontinue the search.
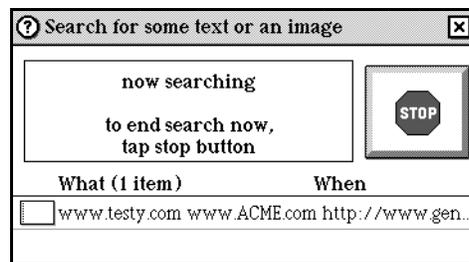
- Touch *stop* to interrupt the search.

- While the search is progressing, items found appear in the list. When the search completes successfully, the *magic* sound plays.

- Touch an item to look at it. Touch the front or back *arrows* on Sniffy to go to the next or previous item in the list, or touch *Sniffy* to reopen the window. When the window reopens, the currently selected item is highlighted in the list.

- To get rid of Sniffy, touch the close box, *option*-touch *Sniffy,* or go to another scene.

Sorting criteria window

The folders in the File cabinet use an automated sorting capability that users control by way of the Sorting criteria window.
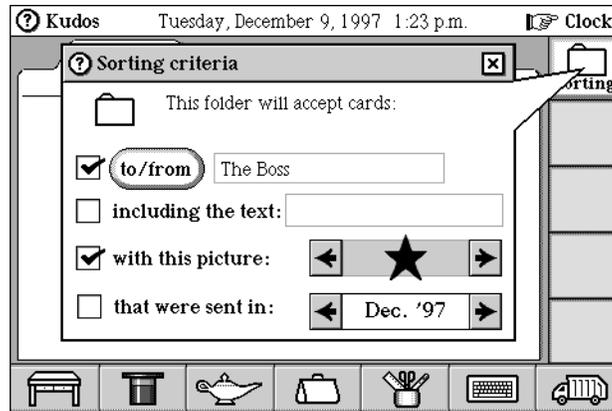
Actions from the Sorting criteria window

- Touch a *checkbox* to switch on one of the criteria.

- Touch *to/from* to select the message's sender or recipient, or touch in the text field to open the Keyboard and begin typing.

- Touch in the text field next to including the text to type the text string that will appear in the subject of messages that are to be filed into this folder.

- Use the *with this picture* chooser to select a stamp that will appear on messages that are to be filed into this folder.

- Use the *that were sent in* chooser to select the month and year of messages that are to be filed into this folder.

Stamps window
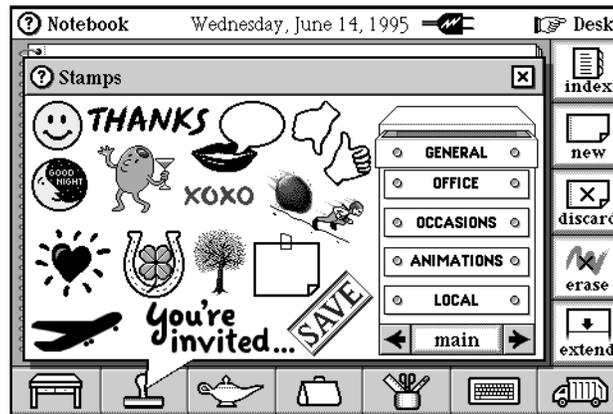
Use stamps from the Stamps window to decorate cards or to use a stamp that performs a function. Some scenes add their own stamps to the Local drawer—the Datebook, for example. A catalog of the stamps available is on page 6182.

Actions from the Stamps window

- Touch a stamp and it will appear in the scene you were last in when you touched the Stamper or Magic hat.

- Slide a stamp to position it in the scene you were last in or to drop it into a container.

- *Option*-touching a *stamp* selects the stamp and leaves the Stamps window open so that you can select another stamp.

- *Option*-touch in the *title bar* to toggle between the Stamps window and the Magic hat window.

- Touch the circled question mark or the scene name at the top of the window to read information about the Stamps window.

- Touch the *closer* to put away the window.

- Touch a drawer to see the stamps in that drawer.

- Use the drawer choice box to choose a set of drawers of stamps.

- Some stamps are smart and cause some action or modify a setting; others are decorative only. For example, the confidential stamp on a card sets the card's confidential attribute, which can be associated with an In box rule.

- These stamps set message attributes that can be associated with an In box rule: low priority, confidential, urgent.

Animations

- Add animations to enliven a card or scene. Some animations cycle through more than one action.

- Drop a song stamp on an animation to give the animation a soundtrack.

- Some animations perform an action when touched. For example, if the rabbit is hopping, touch him and he sits up. Touch him again and he sits down. If he falls asleep, touch him and his eyes open. Touch him while he's sitting and he dances. The cat also performs more than one action.

Datebook stamps

- In the Datebook, touching the *Stamper* reveals a drawer of stamps specifically for the Datebook. Drop one of these stamps on an appointment in the day view to change its image. Drop this appointment onto the new button to add the new appointment type.

Folder stamp

- Use the untitled folder in the Office drawer in which to place items.

Save stamp

- Use a save stamp on an item to ensure it won't be removed automatically if the item is affected by one of the auto-delete rules.

Signature stamps

- The Messages drawer contains places for your informal and formal signatures. Touch one of them to see the Signatures window. The Signatures window can also be accessed from the Controls panel in the Hallway.

Song stamps

- Touch a *song stamp* to hear its song.

- *Option*-touch a *song stamp* to see the Song controls window and change the song stamp's controls.
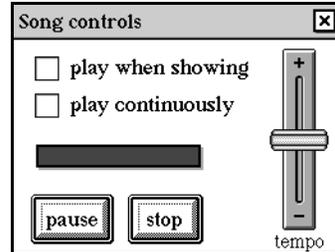
- In the Song controls window, touch *play when showing* to play the song each time the song stamp appears on the screen (opening a message that has the song stamp, for example); touch *play continuously* to play the song continuously while the song stamp is on the screen; slide to adjust the tempo setting; touch *pause* or *stop* to perform those functions.

Sound stamp
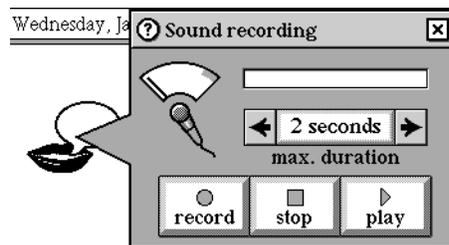
- In Magic Cap 3.1 (Rosemary), a new sound compression algorithm for voice stamps was implemented. A 5-second voice stamp now takes only 9K instead of 30K of RAM.

- Touch a *sound stamp* to open the Sound recording window.

- In the Sound recording window, choose the duration (1 second, 2 seconds, 5 seconds). Touch *record, stop,* or *play* to perform those functions. The meter above the microphone shows the sound level. The vertical meter shows the remaining recording time.

- The stamp image shows an empty word balloon before recording, a microphone while recording, and a quotation when recording is finished.

- Touch a recorded sound stamp to play its recording.

- *Option*-touch a recorded sound stamp to open the Sound recording window.

Sticky note

- Touch the *sticky note* stamp to open the note.
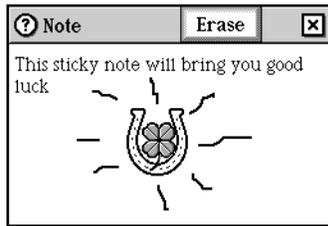
- Type to put text into the note.

- Use a drawing tool to draw on the note.

- Drop stamps on the note.

- Touch *erase* to remove writing, text typed in a text field, and lines but not enclosures, stamps, or shapes. To delete these items, you must slide them into the Trash truck.

- Touch the *closer* to put the note away.

- Scroll arrows appear if appropriate.

Tracking stamp

- Drop a tracking stamp on a message to track its delivery status.

Catalog of stamps

Following is a catalog of the stamps available in the Magic Cap software. For a catalog of stamps in Japanese Magic Cap, see page 6187.

Message stamps
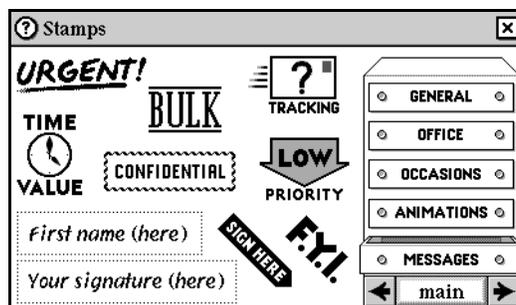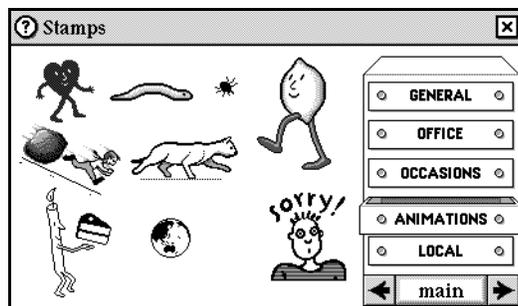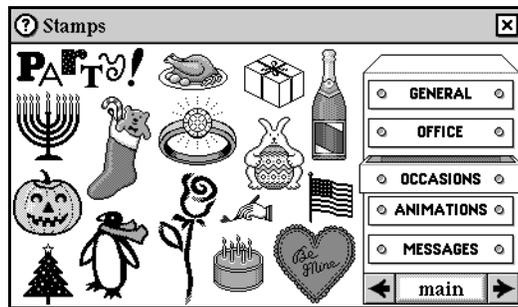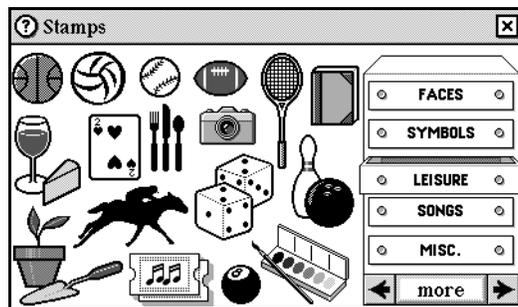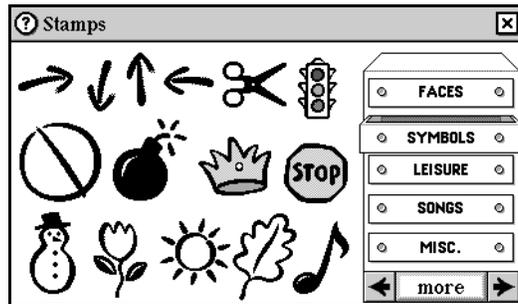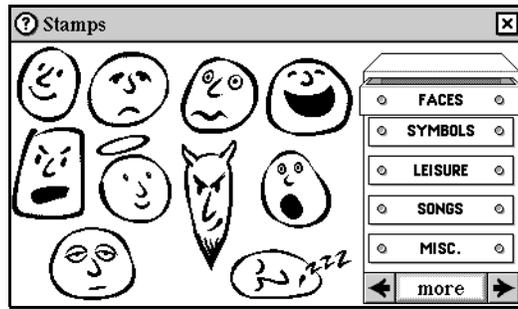
The Magic Cap logo was replaced here and throughout Magic Cap 3.1 (Rosemary) with the standard bunny-in-the-hat logo.

Telephone stamps
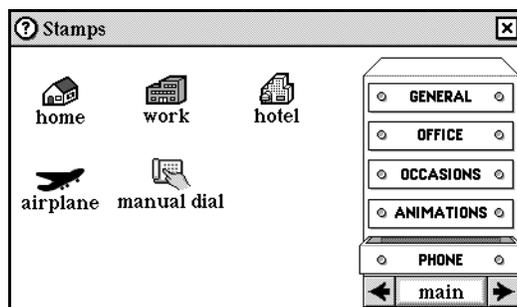
Name card stamps
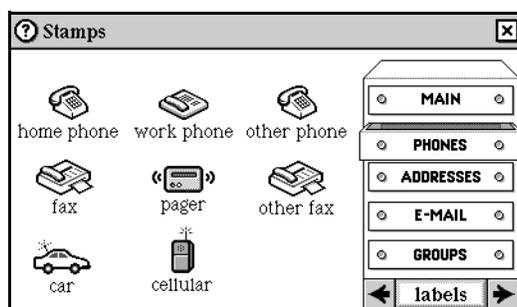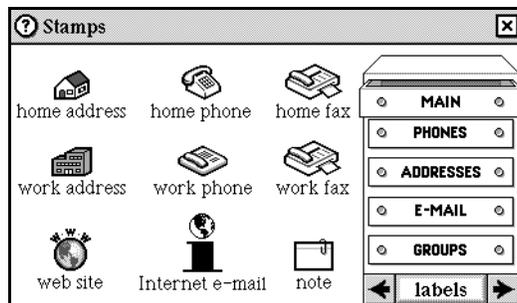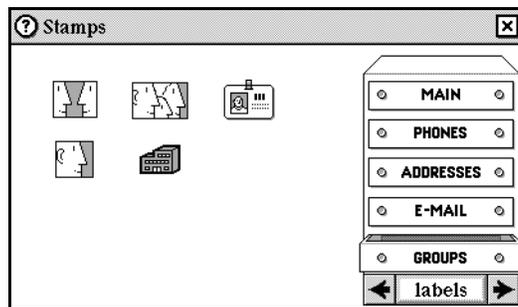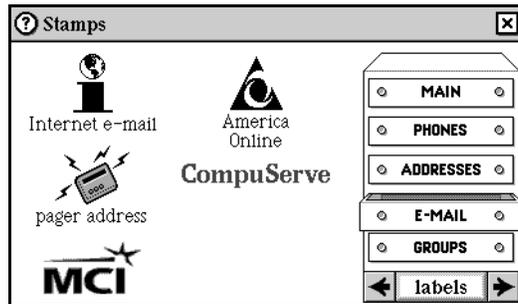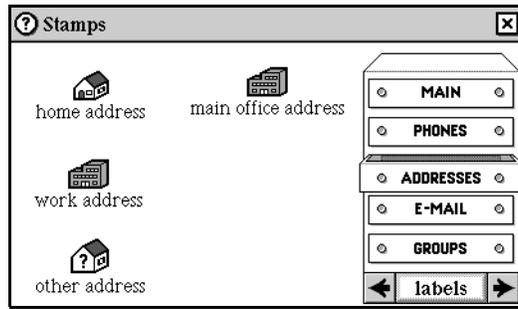
Datebook stamps
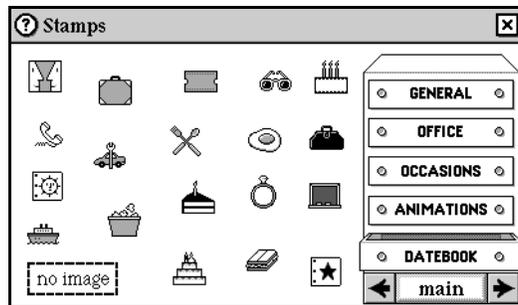
Hallway stamps
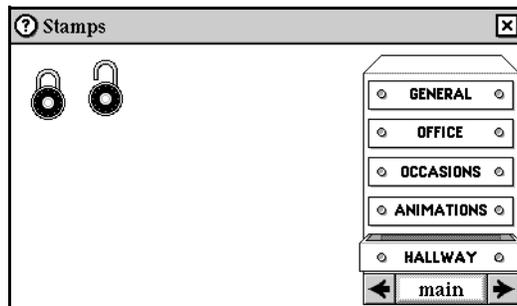
Japanese Magic Cap: Catalog of stamps

These are the stamps available in Japanese Magic Cap.

MAIN, General

MAIN, Office

MAIN, Occasions

MAIN, Animations
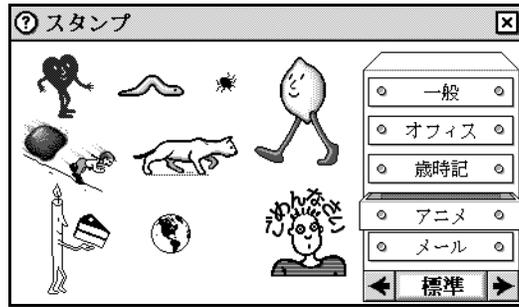
MAIN, Messages

MORE, Faces
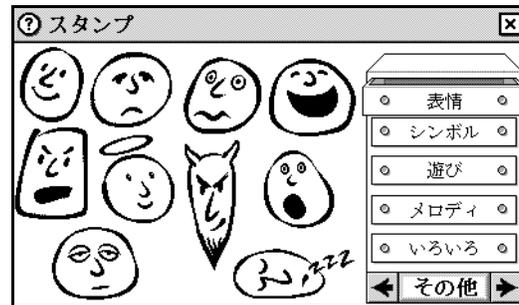
MORE, Symbols
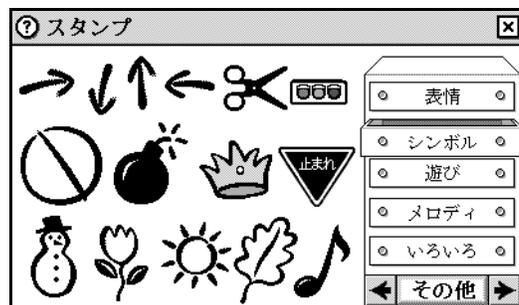
MORE, Leisure
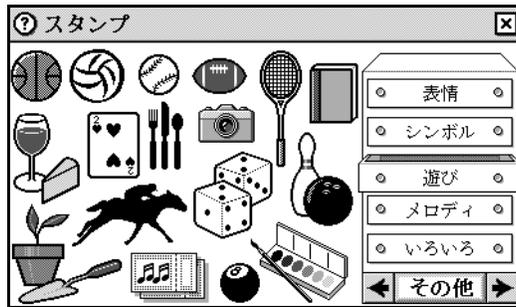
MORE, Songs

MORE, Misc.

SEASON 1, Animals 1
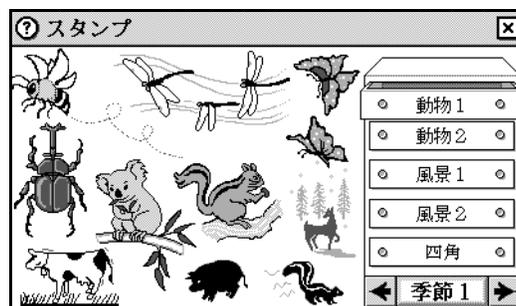
SEASON 1, Animals 2
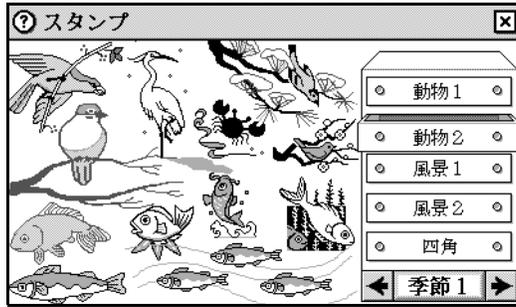
SEASON 1, Seasons 1
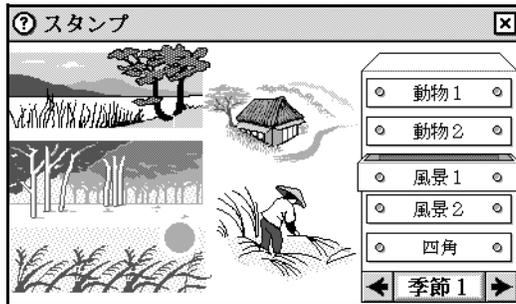
SEASON 1, Seasons 2
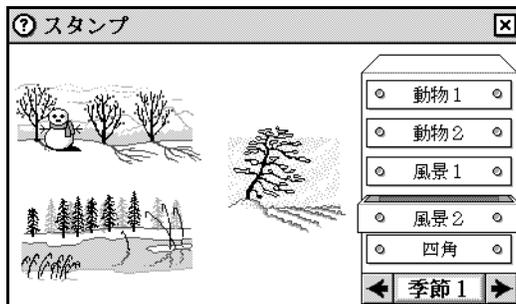
SEASON 1, Tiles
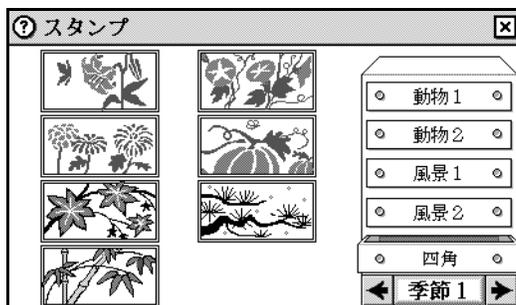
SEASON 2, Flowers
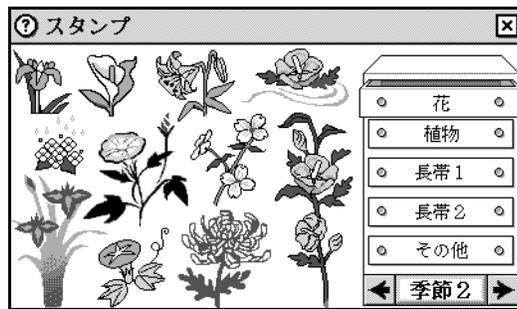
SEASON 2, Plants
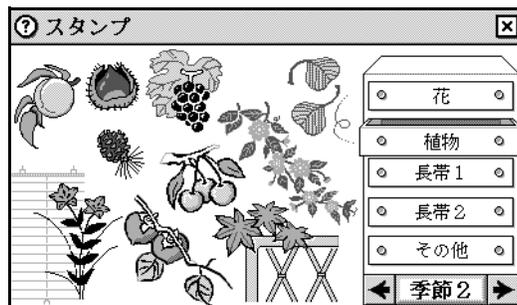
SEASON 2, Wallpaper 1
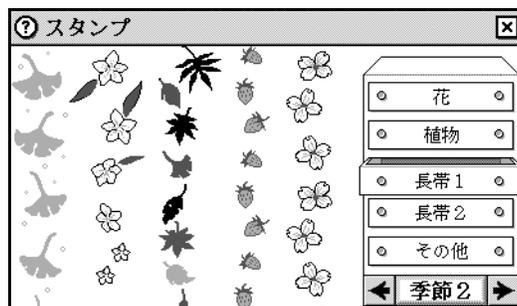
SEASON 2, Wallpaper 2
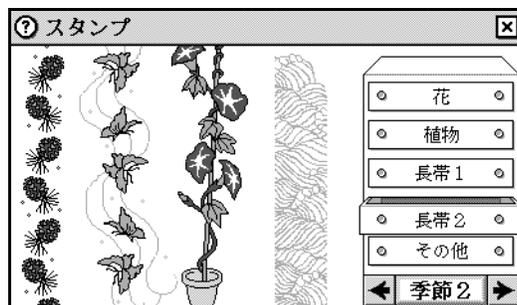
SEASON 2, Misc.
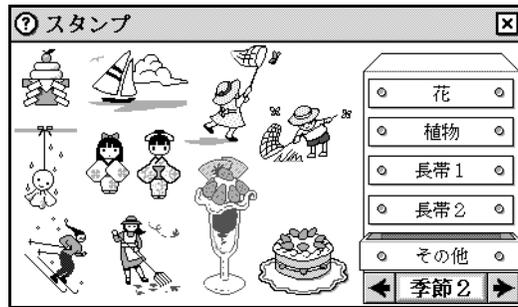
SEASON 3, People
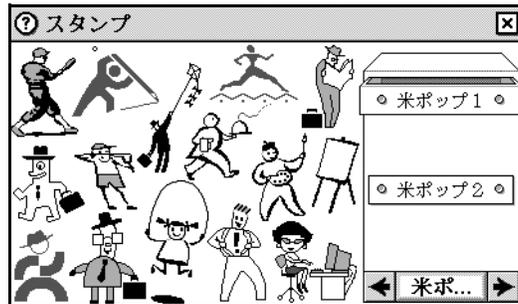
SEASON 3, Bric-a-brac
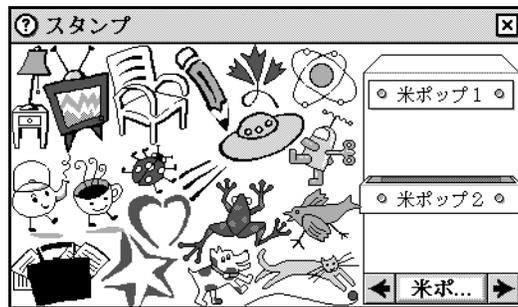
Name card stamps

Main
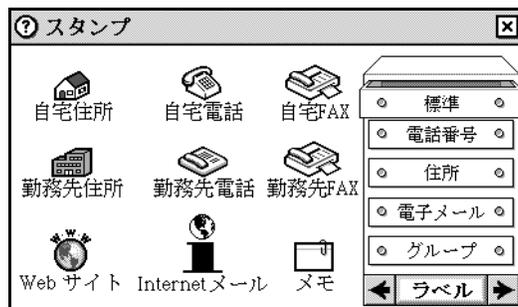
Phones
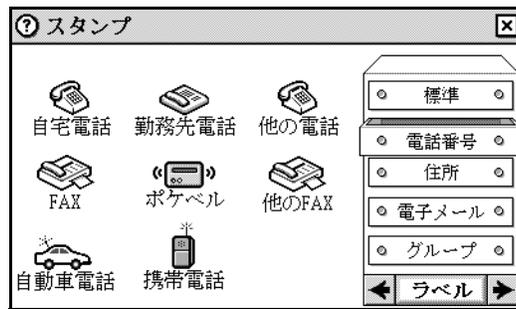
Addresses
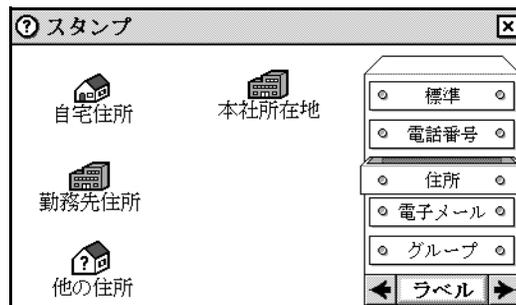
E-mail

Groups
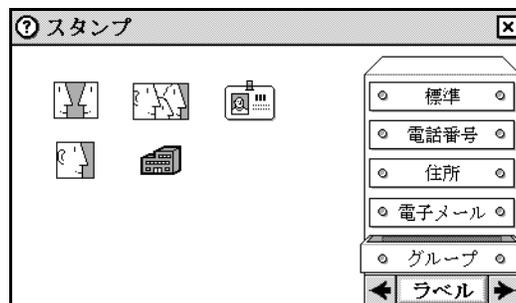
Datebook stamps:
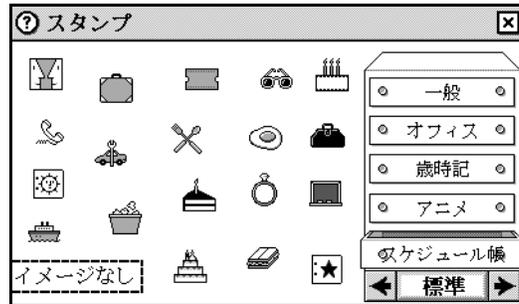
Hallway stamps: Japanese Magic Cap uses the same images with localized text. See "Hallway stamps" on page 187.

Stationery drawer
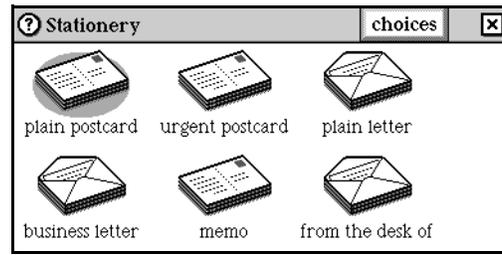
Actions from the Stationery drawer

- Touch *choices* to select the default text style for messages, the default stationery, and the default reply stationery.

- Touch a stationery image to open a new message that uses that type of stationery. These types of stationery are available: plain postcard, plain letter, urgent postcard, business letter, memo, from the desk of.

- To create a new type of stationery, customize one of the existing types and then *option*-slide the minicard from the Desk into the Stationery drawer. Use the Labelmaker to name the new type of stationery.

- Two of the stationery types come in envelopes: business letter and plain letter. With the message on the screen, *option*-touching the *address* button causes the envelope to appear, showing the addressing information and delivery stamp. With the envelope on the screen, *option*-touching the *address* button causes the message to appear.

- Touch *address* to see the Addressing commands window. The show envelope button appears for stationery that comes in envelopes
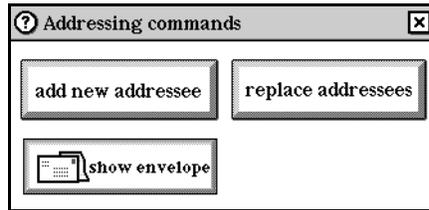
- By default, the Address to window opens whenever you open stationery.

- *Option*-touch a *stationery* image to edit the stationery's layout and field names. The stationery's window opens in which you can customize the layout and fields that appear. The following field names can be used to customize stationery:

Field name	Example
/name/	Alissa Rengstro
/first name/	Alissa
/sender name/	Your full name as it appears on your name card.
/sender first name/	Your first name
/date/	Sat, Apr. 22, 1998
/short date/	4/22/98
/long date/	Saturday, April 22, 1998
/time/	10:41 a.m.
/sender address/	Your full home address as it appears on your name card.
/recipient address/	The recipient's full home address as it appears on the name card.

Japanese Magic Cap: Stationery field names

Stationery type	Field name
plain postcard, urgent postcard	/family name-san/ さん
plain letter	/name/ 様
business letter	/name/ 殿

Choices
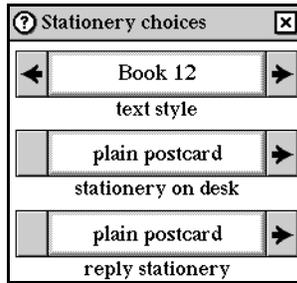
In Magic Cap version 1.0, to change the text styles used by all the built-in stationery types, you must create a message of the desired type and *option*-drag it onto the stationery icon in the middle of the desk. To use a particular text style when composing a message, you must create a new message, *option*-touch the Stamp window to open the text style window, and drag a text style coupon from the window onto the message. To use the same text style in every message, you must repeat the process for each message. In Magic Cap version 1.0, there is no way to set a default text style. There is no way to change the default stationery used in reply messages in Magic Cap version 1.0.

Magic Cap version 1.5 makes it easier to change the default stationery type and text style that you use when sending messages and lets you specify the stationery used to reply to messages.

There is a new button, choices, in the window that appears when you touch the *Stationery drawer*. This button displays a control panel that allows you to change the default stationery type from the plain postcard to another type. The default stationery controls the type of message that is created when you touch the stationery icon in the middle of the desk. The control panel brought up by the new button also allows you to choose the stationery type that is used for replying to messages, and to choose the text style that is used on all new messages and reply messages.

Text Styles Window

This window appears when text is selected. It allows you to change the style of typed text.
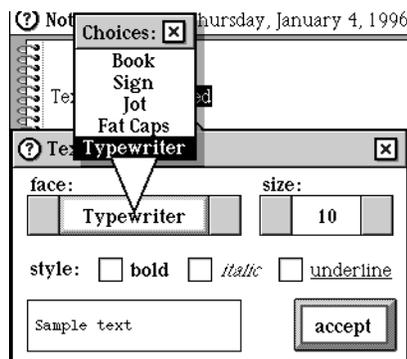
Actions from the Text styles window

- In the Text style window, select the typeface, size, and check one or more style checkboxes.

- Touch *accept* to change the selected text to the settings you've indicated.

- *Option*-touch *accept* to change the selected text while leaving the Text styles window open for further changes.

Tool holder window

- Touch the *Tool holder* to open or close the Tools window.

- *Option*-touch *Tool holder* to see the tool set that was visible the last time the tools window was open.

- Tool holder image changes to show the currently selected tool.

- *Option*-touch the Tools window *title bar* to go to the arranging tools.

- Use a text tool to create a new text field on the message.

- In the Tools window, use the chooser at the bottom of the window to see the different types of tools available.

- These tools are available: pencils, text, shapes, lines, arranging.

- Each scene can define its own tools to be added to the Tools window.

Arranging tools
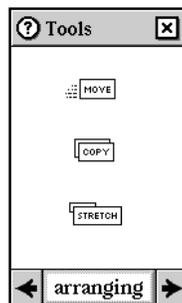
Japanese Magic Cap: Localized arranging tools

In Japanese Magic Cap, the arranging tools are localized.

The arranging tools control the layout of objects. You can use them to move, copy, and stretch many objects. Use the move tool to reposition pencil strokes, text fields, shapes, lines, and objects that can't be moved by simply sliding them. Use the copy tool to make a copy of an object. Slide away from the object to position the copy. Use stretch to change the size of a text field, shape, or line. Slide away from an object to stretch it larger, or slide toward an object to make it smaller.

- These are the arranging tools: move, copy, stretch.

- Touch a tool to select it. It hops into the Tool holder's place at the bottom of the screen.

- A thin gray border appears around all borderless objects when one of the arranging tools is selected.

- Move makes items move when dragged.

- Copy duplicates items when dragged.

- Stretch resizes items when dragged.

Line tools
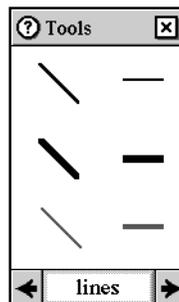
- There are six types of lines.

- Line tools draw straight lines.

- Touch a tool to select it. It hops into the Tool holder's place at the bottom of the screen.

- *Option*-touch a *line tool* to open the Select line style window and use its chooser to change the line's line style.

- Press down on the screen where you want to begin the line and then slide to extend the line.

Pencil tools
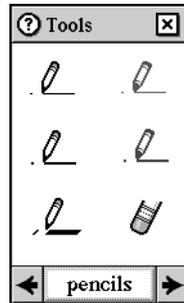
- There are five types of pencils and an eraser.

- Pencils make black or gray lines of various thicknesses.

- The eraser removes pencil drawings.

Japanese Magic Cap: Eraser

In Japanese Magic Cap, the eraser looks like this:

- Touch a tool to select it. It hops into the Tool holder's place at the bottom of the screen.

- *Option*-touch a *pencil tool* to open the Select line style window and use its chooser to change the pencil's line style.

- To write or draw inside a shape or similar object, hold down Option while you write or draw.

Shape tools
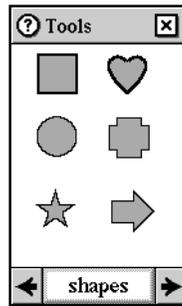
- These are the shape tools: rectangle, heart, oval, notched rectangle, star, arrow.

- Shape tools draw the shapes they represent.

- Touch a tool to select it. It hops into the Tool holder's place at the bottom of the screen.

- Press down on the screen where you want to place the shape and then slide until it is the size you want it to be.

- *Option*-touch a *shape tool* to open the Select line style window and use its chooser to change the shape's line style.

- Drop a new shape (from the Shapes drawer in the Components of the Magic hat) into a shape tool to make it draw that new shape.

- To position an object inside of a shape rather than on top of it, hold down option and slide the object over a shape.

Text tools
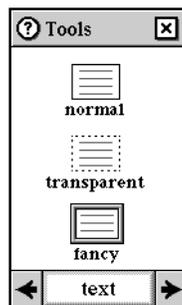
Use one of the text tools to place a field of text anywhere you want. The is handy when you've been writing, drawing or using stamps on a card and you want to type some text at a particular place.

- There are three text field types: normal, transparent, fancy. The normal and fancy text fields each use a different border to surround the text you type in the text

field. Both types use an opaque background. Transparent text fields use a transparent background.
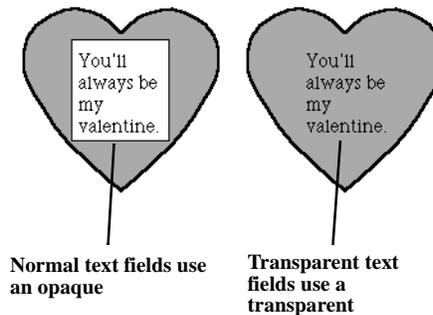
Normal text fields use an opaque

Transparent text fields use a transparent

- Touch a tool to select it. It hops into the Tool holder's place at the bottom of the screen.

- Press down on the screen where you want to place the text and then slide until it is the size you want it to be.

Tote bag window
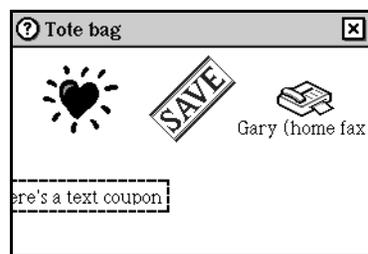
The Tote bag provides a holding area for items. The user can drop items into the Tote bag, then remove or copy the items. Because the Tote bag is always available, it's especially useful for moving items between scenes.

- Touch the *Tote bag* to open or close the Tote bag window.

- Press and slide any item from the Tote bag window to remove it from the Tote bag.

- *Option*-slide an item out of the Tote bag to dispense a copy of the item, leaving the original in the Tote bag.

- Tote bag image changes to show whether Tote bag is empty or contains items.

Trash window
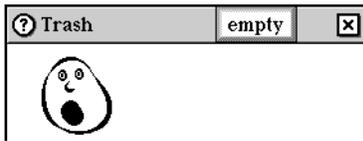
Actions from the Trash window

• Touch the *Trash truck* to open or close the Trash truck window.

• Slide items into or out of the Trash truck window to throw away or restore them.

• Touch *empty* in the window's title bar to empty the Trash truck.

• If the Trash truck is empty, the empty button doesn't appear.

• Touch the *circled?* to see the Trash truck's information window, then touch *rules for Trash truck* to see the Trash truck rules.

rules for trash
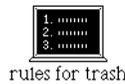
Trash truck rules

☑ 1. Only keep the last <u>6</u> items put in the trash.

☑ 2. When an object is discarded permanently, play the <u>Trash drum</u> sound.

7

Internet features

This section of the Magic Cap 3.1 User Interface Specification describes the communications-related features that are visible to the user. Specifically, it includes descriptions of the Internet mail and web access features.

For information about the personal information management features of the Magic Cap software, see "Personal information management features," on page 65.

Note: Implementation may require changes to the user interface and/or features that are described in this chapter.

Internet mail features

This first section describes the user interface for Internet mail in Magic Cap 3.1 (Rosemary). For information about the web access features, turn to "Web access features," on page 236.

In box
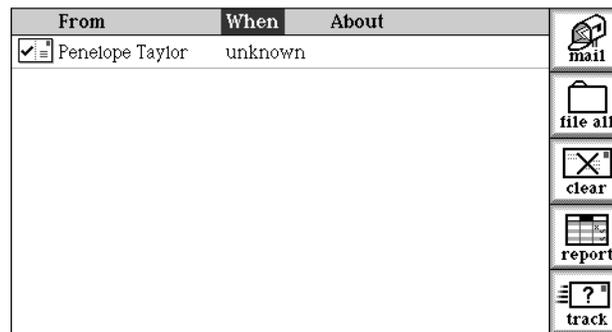
Actions from In box

The In box on the Desk holds all new messages when they're received. From the In box, the user can look at, file, discard, reply, and forward messages, request a summary of mail waiting to be collected, and see a tracking report for messages that contain a tracking stamp. The user can also set In box rules for handling incoming messages. For example, there's a rule to display an announcement when an urgent message arrives.

Mail features from the Desk scene

These are the mail features that can be invoked when in the Desk scene.

- The In box image changes to show whether it contains items. There are different images for 0, 1, 2, and 3 or more items. The number of items is also displayed on the In box image.

- Touch the *In box* to see its scene.

- Slide out of the In box to remove the first item from the In box according to its sort order.

- *Option*-touch the *In box* to collect mail.

- Several things might happen at this point depending on how the user has configured Magic Cap.

  - If the device is configured for more than one Internet service provider, the Collect from window opens in which the user can select which service with which to connect.

  - If the user has configured a service provider so that Magic Cap prompts for a dialup (PPP) password at connect time, a window requesting the password opens now. If no action is taken in this window within one minute, the communicator will disconnect from the service.

  - If the user has configured a servicer provider so that Magic Cap prompts for a POP mailbox username and/or password at connect time, a window requesting the login information opens. If no action is taken in this window within one minute, the communicator will disconnect from the service.

- If the user has configured a service provider so that at dialup a terminal window opens in which to type directly at the server (for PPP servers that don't use PAP/CHAP for authentication and for dynamic security schemes (such as SecureID), this terminal window opens now.

Japanese Magic Cap: Changes to the In box image

Japanese Magic Cap uses this image for the In box:

In box index

The In box index lists all messages in the In box, along with some information about each item.

From	When	About
☑ ▤ Minh Tran	11:22 a.m.	
☑ ▤ Abbey Taylor	11:14 a.m.	
▢ ▤ Penelope Taylor	11:11 a.m.	

- For each item in the In box, the index shows its image (postcard [opened and never opened], letter [opened and never opened]). The index also shows sender, date received, and subject.

- Messages that have been opened have a checkmark on their image.

- Touch any of the *index column headings* to sort the index according to that heading: Image, From, When, or About. (The Image column, which is the leftmost column, is unlabeled.)

- *Option*-touching a *column heading* sorts backwards.

- When sorting by sender, people are sorted according to their last name, then first name; companies and services are sorted according to their full name.

- Touch an item to open that item.

- Slide an item's image to drop the item in a container, such as a folder, the Tote bag, or the Trash truck.

- If the user is registered for one mail service, touch *mail* to begin collecting the mail. If you have requested to be prompted for a dialup (PPP) password each time you connect, a window requesting your password opens now. If you take no action in this window within one minute, the communicator will disconnect from the service.

- If the user is registered for more than one mail service, touch *mail* to open the window entitled "Collect from." This window lists each service that's represented in the Internet Center. Check the desired services and touch *connect* to get the mail. If you have requested to be prompted for a dialup (PPP) password each time you connect, a window requesting your password opens now. If you take no action in this window within one minute, the communicator will disconnect from the service.

- *Option*-touch *mail* to collect messages without sending any messages that are in the Out box. If you have requested to be prompted for a dialup (PPP) password each time you connect, a window requesting your password opens now. If you take no action in this window within one minute, the communicator will disconnect from the service.

- Touch *clear* to remove all messages from the In box after confirmation.

Report button

- Touch *report* to request a report of messages waiting in the service mailbox. If you have requested to be prompted for a dialup (PPP) password each time you connect, a window requesting your password opens now. If you take no action in this window within one minute, the communicator will disconnect from the service.

  A mailbox report is a way of seeing what messages are waiting to be collected from your service mailbox. To keep track of messages that you send, use the *tracking* stamp.

Track button

- Touch *track* to look at the Tracking Reports scene. From the Tracking Reports scene, you can check on the status of messages you stamped with a tracking stamp when you sent them.

File all button

- Touch *file all* to open a confirmation window with yes and no buttons.

- Touch *yes* to return to the Desk and file all In box items in the File cabinet. Items are filed in folders in the Received mail drawer of the File cabinet according to the folders' filing criteria.

- Touch *no* to close the confirmation window without filing the items.

- *Option*-touch *file all* to file the items without seeing the confirmation window.

Reading a message

When the user touches an item in the In box index, the item opens to fill the screen.

- Touch *reply* to create and open a new message addressed to the current message's sender. If the sender designated an addressee with the address type *reply to,* the reply will be directed according to the method of delivery specified at the time the message was sent.

- *Option*-touch *reply* to respond to all recipients of the original message.

- "re" and "fwd" prefixes are now added automatically to the *about:* field when you reply to or forward messages.

- Touch *forward* to forward the message to another addressee. Forwarding a message creates a new message with the forwarded message attached.

- Touch *discard* to open a confirmation window with yes and no buttons.

- Touch *yes* to step back to the In box index as the item hops to the Trash truck.

- Touch *no* to close the confirmation window without deleting the item.

- *Option*-touch *discard* to delete the item without seeing the confirmation window.

- Touch *file* to open the File window.

- If the item is a letter, touch *show* to show the envelope. Touch *show* again to show the letter.

- The default stationery for incoming Internet messages was changed from the plain letter to the memo.

- Touch the *right* or *left arrow* to see the next or previous item in the In box.

- *Option*-touch the *right* or *left arrow* to see the last or first item.

- Touch in a text field. A confirmation dialog appears asking whether to allow changes to the text.

- With a drawing tool selected, touch or slide on the message. A confirmation dialog appears asking whether to allow drawing on the message.

Japanese Magic Cap: In box buttons

In Japanese Magic Cap, the In box buttons look like this:

Undecoded objects

When a message contains no rich content elements, the message is sent over the Internet as a plain text message and can be read universally by any Internet mail reader on any computer or communicator.

When a message contains rich content elements such as scribbles, drawing, writing, stamps, styled text, or attachments, these elements get encapsulated in separate MIME parts that can pass through any path over the Internet. (The body text is sent too). However, some of this rich content will be viewable only by other Magic Cap 3.1 (Rosemary) communicators, and will be seen as enclosures on other Internet mail readers such as Eudora. When an enclosure is sent from a non-Rosemary mail program, and Magic Cap can't "decode" it (convert it to some viewable format), it will display as a placeholder like the one shown below.

Touch the placeholder to open the Undecoded part window.
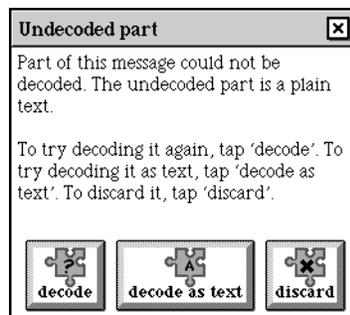
If the communicator has a package from a third-party developer that can decode MIME parts that aren't decoded by Magic Cap, the *decode* button can be used to decode the object so it can be viewed on the communicator. Otherwise, forward the message along with the enclosure to a computer that can decode it. Touch *decode as text* to convert the enclosure into text that you can view on your communicator. Touch *discard* to discard the undecoded part from your communicator, following confirmation.

Refer to the section entitled, ""MIME formats used in Magic Cap," on page 273" for more details.

Unreadable parts

When a message contains an object that cannot be read by the communicator, such as a corrupted attachment, an image representing the object appears on the message.

- Touch the unreadable object image to open the announcement shown below.

Looking at enclosures
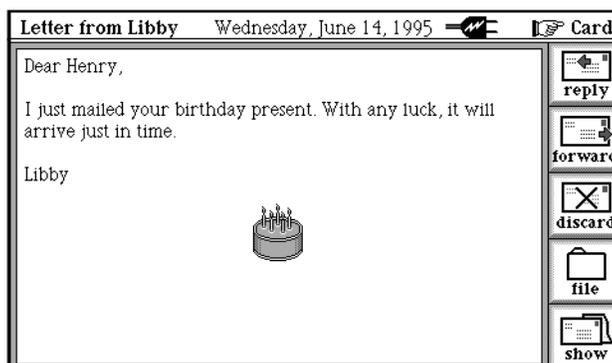
The following actions are available when looking at a message's enclosure.

- Touch an enclosure to look at it.

- Touch *reply* to reply to the enclosed message.

- Touch *forward* to forward the enclosure to the selected addressee.

- Touch *discard* to discard the enclosure.

- Touch *file* to file the enclosure.

- Touch *show envelope* to look at the envelope of the enclosure.

In box commands in the Magic lamp

Extract name cards from a message

- Touch *extract name cards* to selectively add name cards from the messages you receive. You then select to extract either the sender's name card or name cards for

the sender and other recipients of the message.
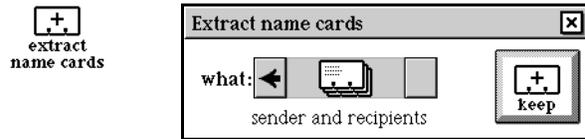
In Magic Cap version 1.0, there is no way to extract name cards from a message manually. *Option*-sliding an addressee makes an entity coupon, which can be dropped back into the address label of the message, but can't be dropped into the Name card file. If you obtain a mini name card some other way (for instance by deleting a name card and then dragging it out of the Trash truck), the Name card file icon won't accept it. It is possible to drop a mini name card onto a name card in the Name card file, but this feature contains bugs. In Magic Cap version 1.5, these problems have all been fixed.

- *Option*-slide a single recipient's name off the address label of the message to create a mini name card. A mini name card can be dropped onto the Name card file icon or onto a name card in the Name card file.

Format Internet messages manually

- Touch *format text* in the Magic lamp to reformat an Internet message manually to make it more readable.

Internet messages contain carriage returns to format lines for 80-character terminals. On Magic Cap communicators, these carriage returns are unnecessary and cause the text to be displayed unevenly because the communicator can't usually accommodate 80 characters per line. There are two ways to reformat the text of Internet messages. One is a new In box rule that automatically reformats every Internet message you receive. The other is a format text command in the Magic lamp that will format just the message you are currently viewing.

In box rules

-

  1. Collect mail from ACME Internet Access and send any outgoing messages every day around 3 a.m.

  This rule appears when the user is registered for a communication service.

- This rule appears when the user is registered for a communication service.

  2. Collect mail from ACME Internet Access and send any outgoing messages every hour between 9 a.m. and 6 p.m.

  This rule instructs your communicator to automatically send outgoing mail and collect new mail from the communication service specified at regular intervals during the day.

Unless it is equipped for wireless communication, your communicator must be connected to a telephone line at the times specified. If you want to collect your mail from more than one communication service, you can make copies of this rule and indicate a different service for each copy. This rule is switched off by default.

-

> ✔ 3. When a message arrives by way of the Internet, format it to improve its readability.

When you receive an Internet message, your communicator adjusts the auto-wrapping, reformatting the message so that it is more readable. This rule is switched on by default.

When you receive an Internet message, your communicator adjusts the auto-wrapping to reformat the message so that it is more readable. This rule, which is new in Magic Cap version 1.5, is switched on by default.

See also "Format Internet messages manually" on page 210.

-

> 4. When a message from General Magic arrives, play the Shlurp sound.

-

> ✔ 5. When any message arrives, play the Magic sound.

-

> 6. When a confidential message arrives, file it in the Personal folder.

-

> 7. When a message from General Magic arrives, file it in the Work folder.

-

> 8. When a message with the Smiley stamp arrives, file it in the Trash.

-

> 9. When a message marked urgent arrives, post an announcement saying "An urgent message arrived!".

-

> 10. When a message containing the text "necktie" arrives, file it in the Work folder.

Customizing the In box

None.

Internet Center

The Internet Center is a building Downtown in which you can provide information for any Internet service providers to which you subscribe.
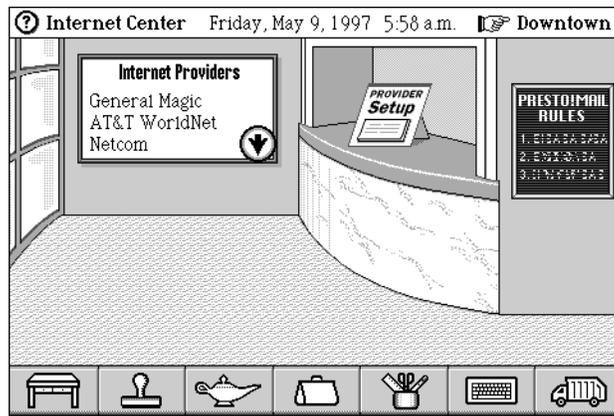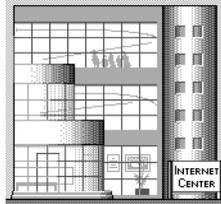
Actions from the Internet Center

• Touch a name on the Internet Providers sign to open the Internet Provider scene in which you can change the configuration information for the service provider.

• Alternatively, option-touch a name on the Internet Providers sign to use the edit windows to change the configuration information for the service provider.

• Slide a service provider from the Internet Providers sign into the Trash truck to throw it away.

• Touch the Provider Setup image to configure the communicator for an ISP.

• Touch the Mail rules sign to look at the rules for the scene.

Adding a new Internet service provider

Magic Cap comes preconfigured for some of the more popular ISPs, or you can enter information for an ISP that isn't listed.

• Touch the Provider Setup image to open the New Internet Provider window in which you can select a preconfigured ISP setup using the *quick setup Internet provider* chooser, or you can enter information for an ISP that is not listed using the *other Internet provider* checkbox.
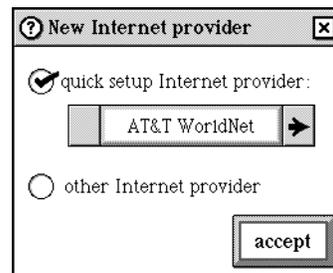
Once you select an ISP, a series of windows opens (detailed in the sections "Adding a preconfigured ISP" and "Adding a new ISP" below) in which you provide information for accessing your accounts with that ISP.

Adding a preconfigured ISP

If you select one of the preconfigured ISPs using the *quick setup Internet provider* chooser, the following series of edit windows opens.

• This window is used to enter the name of your POP mailbox, sometimes referred to as your username. It is often the first part of your e-mail address, as in Noah_Taylor of the e-mail address Noah_Taylor@acme.com.
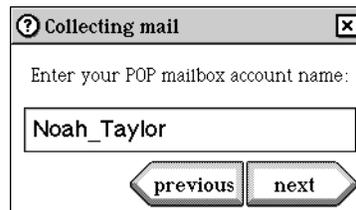
• This window is used to enter your POP mailbox password.
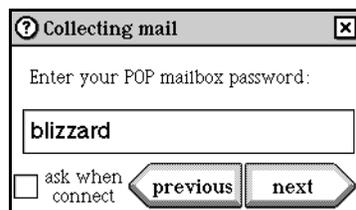
Or, a user can choose not to store a password in the communicator and instead

to switch on the *ask when connect* checkbox so that Magic Cap prompts for the password when connecting.

> **⊘ Collecting mail** ☒
>
> Enter your POP mailbox password:
>
> [ ]
>
> ☑ ask when connect ‹ previous › ‹ next ›

- This window is used to select the PPP dialup access country and access phone number the communicator will dial to connect to this ISP.

> **⊘ Dialup phone number** ☒
>
> (country) ◄ USA ►
>
> (number) +1 [(408) 555 7623]
>
> ‹ previous › ‹ next ›

- This window is used to enter your PPP dialup access account name.

> **⊘ Dialup access** ☒
>
> Enter your PPP dialup account name:
>
> [#Noah_Taylor]
>
> ‹ previous › ‹ next ›

- This window is used to enter your PPP dialup password used when initiating communication with the ISP.

> **⊘ Dialup access** ☒
>
> Enter your PPP dialup password:
>
> [blizzard]
>
> ☐ ask when connect ‹ previous › [done]

Or, a user can choose not to store a password in the communicator and instead to switch on the *ask when connect* checkbox so that Magic Cap prompts for the password at dialup.

> **⊘ Dialup access** ☒
>
> Enter your PPP dialup password:
>
> [ ]
>
> ☑ ask when connect ‹ previous › [done]

Adding a new ISP

If you select *other Internet provider,* the following series of edit windows open in which you can enter information for an ISP that is not preconfigured in Magic Cap.

- This window is used to enter the name of the ISP.

> **Internet provider** ☒
>
> Enter the Internet provider name:
>
> New provider
>
> next ▷

- This window is used to enter the e-mail address that people will use to send you messages.

> ⑦ **Mail** ☒
>
> Fill in your Email address:
>
> Noah_Taylor@acme.com
>
> ◁ previous   next ▷

- This window is used to enter the name of your POP mailbox, sometimes referred to as your username. It is often the first part of your e-mail address, as in Noah_Taylor of the e-mail address Noah_Taylor@acme.com.

> ⑦ **Collecting mail** ☒
>
> Enter your POP mailbox account name:
>
> Noah_Taylor
>
> ◁ previous   next ▷

- This window is used to enter your POP mailbox password.

> ⑦ **Collecting mail** ☒
>
> Enter your POP mailbox password:
>
> blizzard
>
> ☐ ask when connect   ◁ previous   next ▷

Or, a user can choose not to store a password in the communicator and instead to switch on the *ask when connect* checkbox so that Magic Cap prompts for the password when connecting.

> ⑦ **Collecting mail** ☒
>
> Enter your POP mailbox password:
>
>
>
> ☑ ask when connect   ◁ previous   next ▷

- This window is used to enter the POP mailbox server name used for collecting messages.

> **⊘ Collecting mail** ⊠
>
> Enter the POP mailbox server name:
>
> acme.com
>
> previous | next
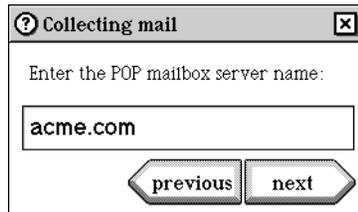
- This window is used to enter the server name used for sending messages via your ISP.

> **⊘ Sending mail** ⊠
>
> Enter the SMTP mailer server name:
>
> acme.com
>
> previous | next
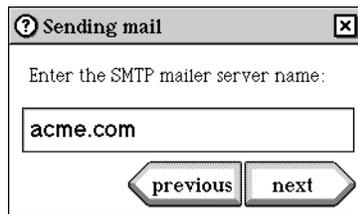
- This window is used to enter the name server (DNS) IP address, the numeric IP address of the device that interprets Internet addresses.

> **⊘ Name server** ⊠
>
> Fill in the numeric DNS address:
>
> 196.216.16.2
>
> previous | next
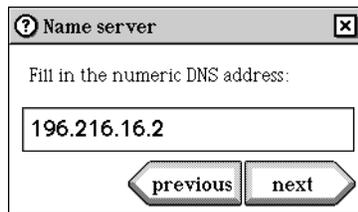
- This window is used to select the dialup access country and access phone number the communicator will dial to connect to this ISP.

> **⊘ Dialup phone number** ⊠
>
> country ◄ USA ►
>
> number +1 (408) 555 7623
>
> previous | next

- This window is used to enter your PPP dialup access account name.

> **⊘ Dialup access** ⊠
>
> Enter your PPP dialup account name:
>
> Noah_Taylor
>
> previous | next

Internet Center
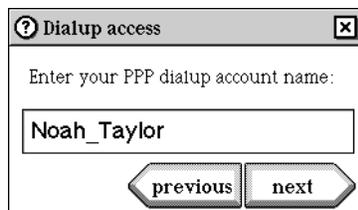
- This window is used to enter your PPP dialup password used when initiating communication with the ISP.
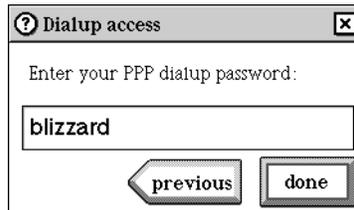
Or, a user can choose not to store a password in the communicator and instead to switch on the *ask when connect* checkbox so that Magic Cap prompts for the password at dialup.
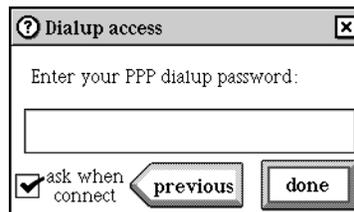
Changing configuration information for an ISP

Select an ISP from the Internet Providers sign in the Internet Center scene. This action opens the scene in which you can edit the configuration information for the ISP you selected.
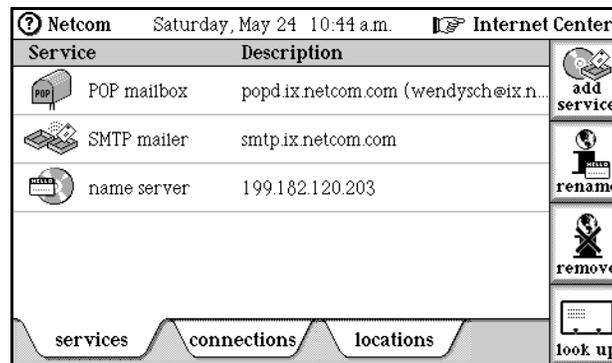
- Touch one of the tabs near the bottom of the screen to switch the view to one of the three available views: services, connections, locations.

- The scene contains four buttons at the right of the scene. The bottom three buttons remain the same for all three views. The top button changes to something specific to each view.

- Touch *rename* to open the Internet provider window in which you can change the ISP name.

- To remove an ISP, touch the *remove* button and then touch *remove* in the confirmation window that opens.

- Touch *look up* to go to the ISP's name card in the Name card file, if one exists. A name card exists for each preconfigured ISP and a name card is created when you add an ISP.

- To change the information for any of the items listed, touch the item to open its editing windows.

- To remove an item listed in the services or connections views, slide it into the Trash truck.

- To rename an item listed in the services or connections views, option-touch the item and then enter the new name in the Internet service window.

- To make a copy of an item that is listed in the services or connections view, option-slide it away from the original to create a duplicate and then drop the duplicate within the view.

Automatic configuration of an ISP

Currently, the Internet Center provides two ways by which users can configure the connection to an ISP. First, there is a pre-populated list of ISPs from which users can choose. These custom ISP templates are pre-populated with non user-specific information (i.e. mail server, provider name, etc.) making the setup process easier for users. Additional ISPs can be installed by Icras, Inc., the licensee, or a third-party developer.

Second, users can choose to enter all of the configuration information for an ISP that is not included in the list of pre-configured ISPs. Select the *other Internet provider* option in the window entitled, New Internet provider (refer to the figure in the section "Adding a new Internet service provider," on page 213.

Magic Cap 3.1 (Rosemary) also enables third-party developers and licensees the ability to plug in an auto-configuration package that would have its own user interface and would communicate directly with a particular ISP to do automated signup. For example, a third-party developer might choose to write a package for Magic Cap which installs a door in the Internet Center. Touching on the door takes you into another scene where you can enter your name and password, your credit card information, and billing address. Touching on a button sends this information to the ISP to establish an account. The developer could add features to allow an account holder to check the status of an account, or receive information on new services available. As a result, the user would not have to go through several steps to configure an ISP. Refer to the section "Application Programmer's Interface (APIs)" for details about implementation.

Change/add information for an Internet service
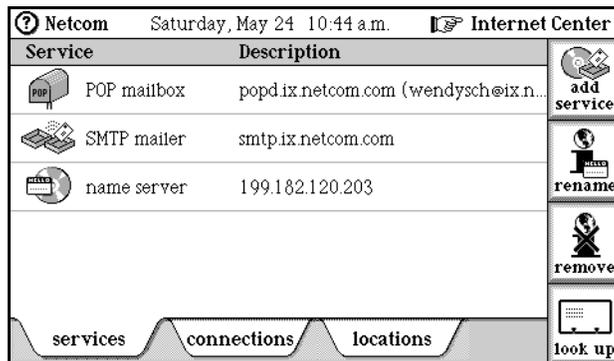
- First select an ISP from the Internet Providers sign in the Internet Center scene. This action opens the scene in which you can edit the configuration information for the ISP you selected. Touch the *services* tab.

- To change the information for any of the services listed, touch the item to open its editing windows.

- When editing a POP mailbox, the *ask when connect* checkbox in the following editing step allows you to control whether you are prompted for account name and password. With this setting switched on, you will enter account information when you attempt to connect to this mailbox rather than storing it with the configuration information on your communicator.

The following window opens when the user attempts to connect to the mailbox.

- Touch *add service* to open the Choose a service window in which you can select from the services listed.

- After selecting a service to add, enter the appropriate information in the windows that open.

Change the connection information

- First select an ISP from the Internet Providers sign in the Internet Center scene. This action opens the scene in which you can edit the configuration information for the ISP you selected. Touch the *connections* tab.

⑦ Netcom	Friday, May 23, 1997 1:59 p.m.	☞ Internet Center
Connection	**Description**	
📞 PPP dialup	+1 (415) 321-4321	📞⁺ add connect
📞 PPP dialup	+1 (408) 555-1212	🌐 rename
📡 Ricochet wireless	Wireless PPP	✗ remove
		look up
services	connections	locations
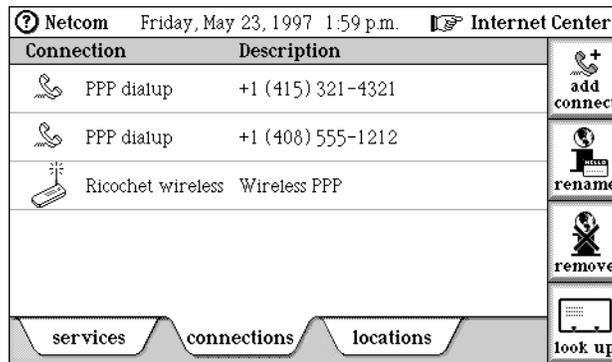
- To change the information for any of the dialup connections listed, touch it to open its editing windows. You can change the country, telephone number, PPP dialup account name and password, whether you are prompted for user name and password, and whether a terminal window opens in which you can communicate directly with the dialup server.

- When editing a PPP dialup access, the *ask when connect* checkbox in the following editing step allows you to control whether you are prompted for account name and password. With this setting switched on, you will enter account information when you attempt to connect to this ISP rather than storing it with the configuration information on your communicator.

```
PPP dialup account information   ☒
( account )  #wendysch
( password )
☑ ask when    ⟨ previous    next ⟩
  connect
```

The following window opens when the user attempts to connect to the ISP.

```
Dialup (PPP) account information  ☒
( account )  #wendysch
( password )
                          done
```
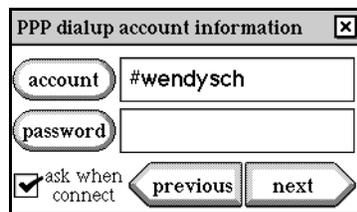
- Use the PPP dialup terminal feature as a way of communicating directly with the dialup server. This feature was implemented to support both legacy PPP servers that don't use PAP/CHAP for authentication and for dynamic security schemes

(such as SecureID).
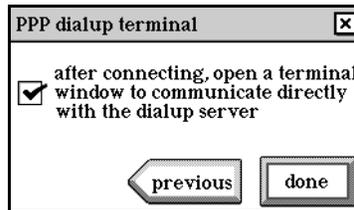
Once a connection has been established, a terminal window opens, allowing the user to type directly at the dialup server.

• Touch *add connect* to open the Choose a connection type window. Most service providers offer multiple access numbers for cities nationwide. Users who want to connect to an ISP when travelling enter local access numbers to reduce their telephone charges.
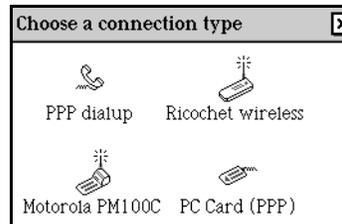
• Select one of the connection types in the window and then enter the information for that access number in the edit windows that appear.

Note: Licensees can extend the connection options to include such things as CDPD or Ethernet. These settings can be presented to the user here. By default, Magic Cap 3.1 (Rosemary) includes dialup PPP connection services only. Refer to the section "Application Programmer's Interface (APIs)" for details about extending connection options.

Select the dialup number for a location

• First select an ISP from the Internet Providers sign in the Internet Center scene. This action opens the scene in which you can edit the configuration information for the ISP you selected. Touch the *locations* tab.
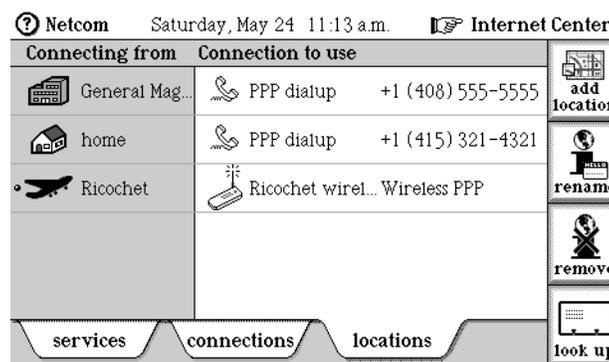
• A bullet marks the current location setting.

- To reassign a dialup number to a dialing location, select the location to open the Choose a connection window.
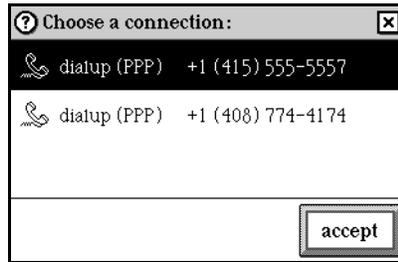
- Select a dialup phone number in the window and then touch *accept.*

- To add or remove a dialing location, touch *add location* to open the Adding and removing locations window.
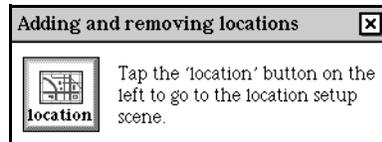
- Touch *location* in the window above to go to the Phone scene where you can add and remove dialing locations to the communicator.

Scripts

Simple scripts can be added to control custom access to an ISP with special requirements such as SecureID access. Implementation is not fully complete at time of printing of this specification. Implementation will consist of a scripting window visible by touching a button in the edit steps that appear when configuring an ISP. Users can type or paste a script into the window and edit the script.

Internet Center commands in the Magic lamp

None. An Internet software package may install commands for its service.

Internet Center rules

Unlike many other scenes in Magic Cap where the access point for the rules is in the Magic lamp, the rules for the Internet Center are accessible by touching the Mail Rules sign in the Internet Center scene.

- Other Internet software packages may install additional rules for their services.

-

  ```
  ☐  1. Once a message is collected, delete it from the
        provider mailbox.
  ```

-

  ```
  ☐  2. When done collecting new messages, play the
        Cheer sound.
  ```

-

  ```
  ☑  3. Play the bass sound when there are no new
        messages to collect.
  ```

-

  ```
  ☐  4. Don't collect messages larger than 10 K in size.
  ```

-

  ```
  ☐  5. Don't collect messages from foo@bar.com.
  ```

-

  ```
  ☐  6. Don't collect messages about "free gifts".
  ```

Customizing the Internet Center

- An Internet software package installed on a Magic Cap-based device may install rules and other functionality, allowing you to access its services from the Internet Center.

Library

Getting Started book

- A lesson is added to the Getting Started book which leads users through the process for signing up for an ISP and changing the configuration settings.

Mailbox Report

⑦ Report for hello (General M...	11/13 4:16 p.m.	☞ In box			
From	**About**	**When**	**Size**	**Collect**	**Delete**
✓ Noah Taylor	WS	12:30 p.m.	0.5K	○	○
✓ Geromel Smith	98K Text File en...	12:19 p.m.	81K	○	○
Geromel Smith	120+ K enclosed	12:05 p.m.	134K	○	○
✓ Steve B. Císler		11:41 a.m.	5K	○	○

4 messages as of 12:31 p.m.   ⚡ update
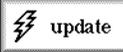
A mailbox report is a list of messages in a service provider mailbox. The mailbox report is accessible from either the In box or the Out box by touching the *report* button. The mailbox report replaces the *mailbox summary* in previous versions of Magic Cap.

In Magic Cap version 1.0, you request a summary by touching *summary* in the Magic lamp from the In box. A summary appears as a message in the In box. You can keep multiple summaries stored in your communicator with duplicate information on them. In Magic Cap version 1.5, this summary information is consolidated in once place and is updated every time you connect to the service to send or retrieve messages.

Actions from the Mailbox report

- Touch *report* from the In box or the Out box to look at the Mailbox report scene. If you have configured your communicator for more than one Internet service provider, the View mailbox report for window opens in which you can select which provider's mailbox report you wish to view.

- Touch *update* in the Mailbox report scene to connect to a service and request an updated mailbox report. If you have requested to be prompted for a dialup (PPP) password each time you connect, a window requesting your password opens now. Once a connection has been established, the Mailbox report is updated and the list of messages in your mailbox appears.

- If the mailbox is configured such that read messages are not automatically removed from the mailbox, read messages are distinguished by a checkmark on the image as opposed to unread messages which don't have a checkmark. Messages are sorted by date and time.

- To collect a message in the mailbox, touch the Collect checkbox. A checkmark appears.

From	**About**	**When**	**Size**	**Collect**	**Delete**
Noah Taylor		10:48 a.m.	0.5K	✓	○

- To collect and delete a message in one step, touch both the Collect and the Delete checkboxes.

- To discard a message in the mailbox, touch the Delete checkbox. A checkmark appears.

- *Option*-touch *Collect* to select all of the messages listed in the mailbox, and then touch *update* to collect them. Similarly, *option*-touch the *Delete* checkbox to select all of the messages in the mailbox report, and then touch *update* to delete them from the mailbox.

- The status area at the bottom of the scene shows the number of messages currently in the service mailbox and the date and time of the last update. The status area also reports the number of messages not collected because of rule filters, and displays a notice if no messages were collected.

- Touch an *index column heading* in the Mailbox report scene to sort the list of uncollected messages according to that heading: Image, From, About, When, or Size. (The Image column, which is the leftmost column, is unlabeled.) *Option*-touching on a *column heading* sorts backwards.

Mailbox summary is reusable and is always recent

The mailbox summary is updated automatically every time you collect mail or take action from a mailbox report. You can also update the mailbox summary manually by touching *update* in the Mailbox report scene. In Magic Cap 1.0, you had to ask for a summary explicitly, and instead of updating it, you had to request a new one.

Mailbox summary is robust and reusable

Taking action on an item in the Mailbox summary does not make the mailbox summary invalid. Instead, the summary report is updated automatically to reflect the most recent state of the mailbox, and more actions can easily be taken on the items remaining in the mailbox summary.

In 1.0, taking action on any item in the summary makes the summary unusable for future actions. Also, if there's any problem when trying to take action from a summary, the action isn't taken and the summary became unusable, so you are forced to request a new summary just to finish your original action.

Mailbox report commands in the Magic lamp

None.

Mailbox report rules

None.

Customizing the Mailbox report

None.

Messages
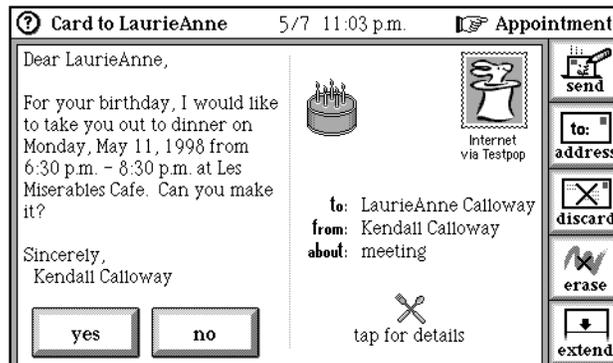
The message scene (labelled "Card to ..." when using the postcard-style stationery or labelled "Letter to ..." when using the letter-style stationery) is what users see when creating new messages and when looking at messages that aren't in a container such as the In box, Out box, or File cabinet. These scenes are also used for looking at messages that are left lying around, such as those on the Desk.

Japanese Magic Cap: Localized stationery

The plain and urgent postcard stationery is localized for Japanese Magic Cap.
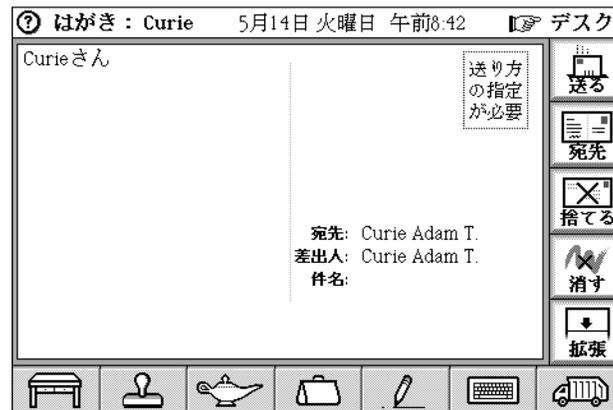
Actions from messages

This section describes actions the user can invoke from the message scene and actions related to messages.

Addressing a message

By default, the window entitled Address to automatically opens when a new message is created. Users can select recipients from this window or close the window and address the message later by using the *address* button. After addressing the message, the user can change the addressees, designate the addressee type (to, cc, bcc, and reply to), and add more addressees. Some kinds of stationery can add other addressing commands; for example, letters provide a command to allow users to see the envelope. After the message is addressed, some text is automatically typed into the message (for example, a salutation or the date). The exact text depends on the kind of stationery.

Japanese Magic Cap: Localized address button

In Japanese Magic Cap, the address button looks like this:

- Touch the *address* button to open the addressing commands window with add new addressee and replace addressees buttons.
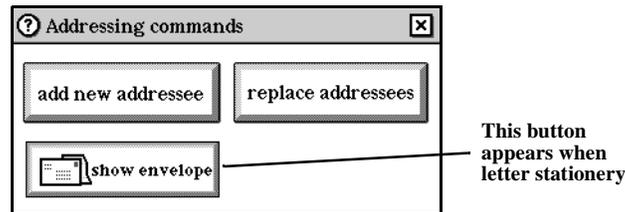
- *Option*-touching *address* shows or hides the message's envelope, if there is one.

- For letter stationery, the addressing commands window includes a show envelope/hide envelope button.

- Touch *add new addressee* to open the Name chooser window. Select a name, an address type using the address type chooser, and then touch *accept*.

- Touch *replace addressees* to open the Name chooser. Select a name, an address type using the address type chooser, and then touch *accept* to replace all the addressees with the newly selected addressee.

- A message addressed to a group will display the names of individuals in that group instead of the group name, as was true in previous versions of Magic Cap.

- Address types are to, cc (carbon copy), bcc (blind carbon copy), and reply to.
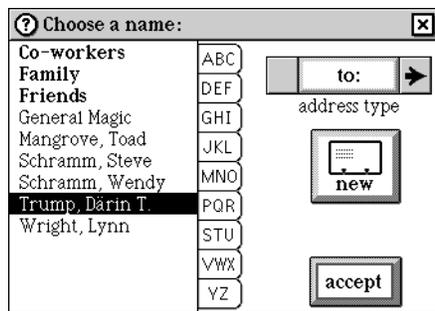
The *reply to* address type can be used to direct replies to a message. Both the recipient and the method of delivery can be specified. In the Choose a name window, first select the reply to recipient, use the address type chooser to select *reply to,* and then touch *accept.* Select the means of delivery by touching the *delivery stamp* on the message when the reply to recipient is selected (a bullet appears next to the name when selected).

- When the message is addressed, a suggested way of sending to that name (for example, work fax) is displayed in the delivery stamp. Touch the *delivery stamp* to pick from a list of available delivery choices. If the designated ISP's image is included in Magic Cap or provided by the ISP, that image appears for the delivery stamp; otherwise, the standard bunny-in-the-hat logo is used.

- If there are no delivery choices available for the addressee, the delivery stamp reads "add way to send". Touch this *delivery stamp* to add a new delivery choice for the addressee. These choices can be added: fax, any electronic mail services that can be reached by the current user's services.

- *Option*-touch the *delivery stamp* to enter a new delivery choice for the addressee.

- Available delivery choices are determined by examining stamps on the addressee's name card. These delivery choices are available: fax, any electronic mail services that the addressee belongs to and can be reached by the current user's services.

- If the delivery choice involves a portal, the stamp names the destination service and the forwarding service (for example, Internet via AOL).

- If there is more than one addressee, touch an addressee to select it, then touch the *delivery stamp* to select the delivery choice for that addressee.

- Touch the *closer* without choosing a recipient to leave the new message unaddressed.

Creating a new message

Users can create a new message by touching the stationery image on the Desk, by replying to a received message, or when mailing an item such as a notebook page.

- Touch the stationery image in the center of the Desk to create a new message. The default stationery type, as shown by the stationery image itself, is used for the new message.

- Touch the *Stationery drawer* to open it and touch one of the types of stationery to create a new message using that type.

- The Stationery drawer includes these kinds of stationery: plain postcard, plain letter, urgent postcard, business letter, memo, from the desk of.

- Scroll arrows appear on a message if appropriate.

- *Option*-slide a message into the Stationery drawer to create a new type of stationery.

- When a new message is created, the message is shown in its scene.

- *Option*-touch on *stationery* to edit the stationery itself, not just a sheet of it.

- If the user leaves the message scene without sending or discarding the message, it appears on the Desk labelled with the addressee's name or "unaddressed".

- Touch a message that is on the Desk to open the message.

- Slide messages to containers, such as folders, the File cabinet, Trash truck, or Tote bag.

- Slide addressed messages to the Out box to send them.

- A framework was added that allows any mail application to support rich Magic Cap content.

Discarding the new message

The user can delete the new message before sending it.

- Touch *discard* to open a confirmation window with yes and no buttons.

- Touch *yes* to step back to the Desk as the new message hops to the Trash truck.

- Touch *no* to close the confirmation window without deleting the message.

- *Option*-touch *discard* to delete the new message without seeing the confirmation window.

Drawing and erasing

- Write or draw anywhere on the message with any pencil, shape, or line tool.

- Touch *erase* to remove the last drawing that was added to the message. Touch the *erase* button repeatedly to keep erasing drawings. Erase scribbles with finer control by using the eraser in the pencil tools. The *erase* button doesn't erase your enclosures, stamps, or shapes. Drag these items into the Trash truck to remove them.

- *Option*-touch *erase* to remove all customizations from the message.

Extending the message

- Make the message larger by touching the *extend* button. This adds space to the bottom of the message.

- Touch *extend* repeatedly to add more space for each touch.

- Scroll arrows are added when part of the message is off the screen.

- Extended messages shrink to the size of their content when the message is closed.

Sending the message

- Touch *send*. The message shrinks to a miniature on the Desk and hops into the Out box. The communicator attempts to send the message according to the delivery choices indicated by its delivery stamp and the Out box rules.

- *Option*-touching *send* sends and collects messages. Magic Cap assumes the same service provider choices that were selected the last time the user connects, and therefore doesn't display the Collect from window.

- The send button will change its image to indicate the message contains one of these rich elements: scribbles, drawing, writing, stamps, styled text, or attachments.

- If the message isn't addressed, the communicator will honk and display the Name chooser.

- Magic Cap now supports encoding Magic Cap objects in mail messages using Internet standards so it's easy for any mail application to support rich Magic Cap content. Magic Cap supports a framework for encoders and decoders that can be used to translate text, images and other types of content for transmission over mail or other network services. This has no direct effect on end users, but because developers who create other mail applications can take advantage of this feature, users benefit when using those applications.

<div align="right">See also "Undecoded objects" on page 208.</div>

- When a message contains no rich content elements, the message is sent over the Internet as a plain text message and can be read universally by any Internet mail reader on any computer or communicator.

⚠ **Internet mail security**

Currently, there is no provision for security when using Magic Cap to send Internet mail. The text of messages are routed through the Internet without any kind of encryption or authentication. Depending on the route your mail takes, it could be read by unauthorized people. Also, there is no provision for user authentication; when you receive mail from someone over the Internet, there's no guarantee they are who they say they are. However, the Magic Cap mail framework does allow for development of mail packages that incorporate more security features than are included with the default POP/SMTP mail. The POP/SMTP mail standard is widely used on the Internet but currently has no security provisions.

Tracking stamp

Note: Internet mail services offer minimal support of the tracking feature.

- Drop a tracking stamp on a message to track its delivery status. When you stamp a message with a tracking stamp, you can go to the Tracking reports window in the In box and the Out box and look at the tracking report to monitor the status of that message. Updated tracking reports appear in the tracking reports window each time you connect an ISP.

<div align="right">See "Tracking reports" on page 234.</div>

Typing

New messages include areas for typing text. The default new message, which uses standard postcard stationery, includes a subject line labeled "about:" that lets the user enter a hint about what's in the message, and a body field for typing the message text.

- Touch the *Keyboard* to open the on-screen keyboard and place the text typing point in the message's body.

- Touch the *about* field to type the subject. If the on-screen keyboard covers the about field, hide the keyboard first by touching its *close box*.

Message commands in the Magic lamp

- Touch *measure* to see an announcement that gives the size of the message.

Message rules

-
☑ 1. Address each new message after creating it.

By default, the Name chooser window appears when a new message is created.

-
☐ 2. Always show the on-screen keyboard when creating a new message.

This rule allows the user to control whether the Keyboard appears automatically when a new message is created. This rule is switched off by default, so that the pencil tools are selected

Customizing messages

- These arranging tools are available in the Tool holder: move, copy, stretch.

- Add stamps and other items from the Stamper/Magic hat to messages. These items become part of the message and go with it when it's sent.

- These stamps are available in the message scene: urgent, bulk, low priority, time value, sign here, f.y.i., tracking, confidential, c.o.d., first name signature, full signature.

Out Box
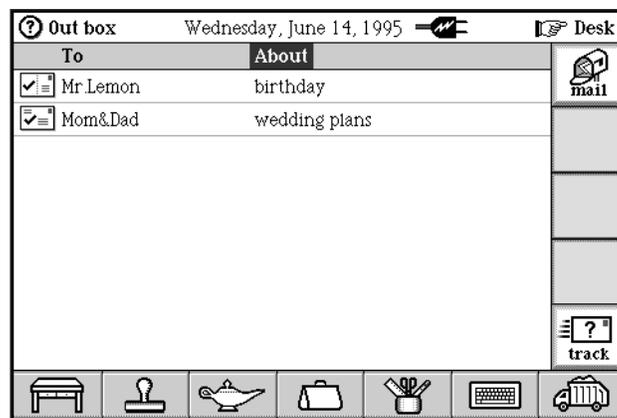
The Out box holds all messages that are waiting to be sent. When the communicator makes contact with the ISP, the messages are sent and then removed from the Out box.

Actions from the Out box

Mail features from the Desk scene

These are the mail features that can be invoked when in the Desk scene.

- The Out box image changes to show whether it contains items. There are different images for 0, 1, 2, and 3 or more items. The number of items is also displayed on the Out box image.

- Touch the *Out box* to see its scene.

- Slide out of the Out box to remove the first item from the Out box according to its sort order.

- *Option*-touch the *Out box* to send messages. If there is more than one Internet service provider card present, the window entitled "Collect from" opens, in which you can select which service to connect to. If you have requested to be prompted for a dialup (PPP) password each time you connect, a window requesting your password opens now.

Out box index

The Out box index lists all messages in the Out box, along with some information about each item.

- For each item in the Out box, the index shows its image, addressee, and subject.

- When sorting by addressee, people are sorted according to their last name, then first name; companies and services are sorted according to their full name.

- Touch any of the *index column headings* to sort the index according to that heading: Image, To, About. (The Image column, which is the leftmost column, is unlabeled.) *Option*-touching a *column heading* sorts backwards.

- Touch a message to open it. A message in the Out box can't be edited. To change a message that is in the Out box, slide it out of the Out box and onto the Desk. Alternatively, touch on the text of the message and a message appears to confirm that you want to change the message. It then hops onto the Desk.

- Slide a message's image to drop the message in a container, such as the Tote bag or the Trash truck.

- Touch *mail* to send messages that are in the Out box and haven't been sent. If there is more than one Internet service provider card available, the window entitled "Collect from" opens, in which you can select a service provider.

- Touch *track* to look at tracking reports.

Out box commands in the Magic lamp

None.

Out box rules

-

```
☑  1. Send everything in the out box as soon as it
        contains at least 1 item(s).
```

-

```
☑  2. Send everything in the out box as soon as it
       contains an urgent message.
```

-

```
☐  3. When a confidential message is sent, file it in the
       Personal folder.
```

-

```
☐  4. When a message containing the text "magic" is
       sent, file it in the Work folder.
```

-

```
☐  5. When any other message is sent, file it in the File
       cabinet.
```

Customizing the Out box

None.

Tracking reports
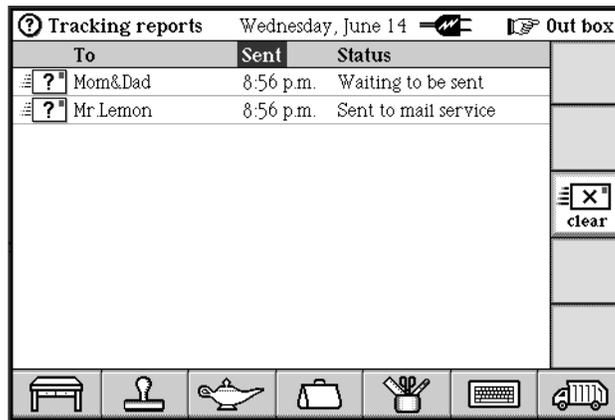
Note: Internet mail services offer minimal support of the tracking feature.

When you stamp a message with a tracking stamp, you can go to the Tracking reports scene from the In box or the Out box and look at the tracking report to monitor the status of that message. Updated tracking reports appear in the Tracking reports window each time you connect to a service. To check the status of a message, touch *track* in the In box or Out box. The Tracking reports window opens showing updated tracking reports for messages you've sent.

Actions from the Tracking reports

- In the In box or the Out box, touch *track* to see the Tracking reports scene for messages that you stamped with a tracking stamp. The track button is highlighted when there are new, unread tracking reports in the Tracking reports scene.

- Touch an *index column heading* in the Tracking reports scene to sort the list of outgoing messages according to that heading: Image, To, Sent, or Status. (The Image column, which is the leftmost column, is unlabeled. Touching the top of the Image column has the same effect as touching *Status*.) *Option*-touching on a *column heading* sorts backwards.

- For each item, the addressee, time and date sent, and status is listed.

- Touch *clear* to throw away the tracking reports listed in the Tracking reports scene.

- Touch an item from the list to see the individual report.

- If the message was sent to more than one addressee, "n recipients" appears in the To column, where n is the number of addressees. Touching this item lists the individual reports beneath the main tracking report. Touch one of these to look at it.

- Use the prev and next buttons to navigate through each report.

Individual tracking reports

Each message stamped with a tracking stamp will generate an individual tracking report. These reports are updated each time the user connects to the service so the user can track the status of a message as it is routed to its recipient.

- The individual tracking report lists the addressee, subject, and time and date the message was sent at the top of the report. The date and time the report was last updated is shown at the bottom of the report. The body of the report contains a short status message for the tracked message and may contain suggested instructions for further action. The following status messages might appear:

Status message	Meaning
Waiting to be sent	A message was created and has a tracking stamp, but it has not yet been sent to the mail service.
Sent to mail service	The message was successfully sent to the mail service.

- Touch one of the arrows at the top of the screen to look at other reports.

- Touch *discard* to throw away the report.

• Touch *file* to file the report.

Tracking reports commands in the Magic lamp

None.

Tracking reports rules

The following is a list of rules available in the Tracking reports window. To view these rules, touch *track* from the In box or the Out box, touch the *Magic lamp*, and then touch *rules*.

> ☐ 1. Place a delivery tracking stamp onto every new message made.

This new rule instructs your communicator to place a tracking stamp on every message you send so that you can monitor the status of messages using the tracking reports in the Tracking reports window. To look at the reports touch *track* in the In box. This rule is switched off by default.

> ☑ 2. Suggest discarding tracking reports more than a week old, unless they are marked with a save stamp.

With this rule switched on, your communicator displays a window offering to discard tracking reports that are older than the age specified by the rule. This rule is switched on by default.

Customizing the Tracking reports

None.

Web access features

This section describes the user interface for web access in Magic Cap 3.1 (Rosemary).

For information about the Internet mail features, turn to "Internet mail features," on page 203.

Web browser

Access the web browser from the Desk by touching the *web access* poster.
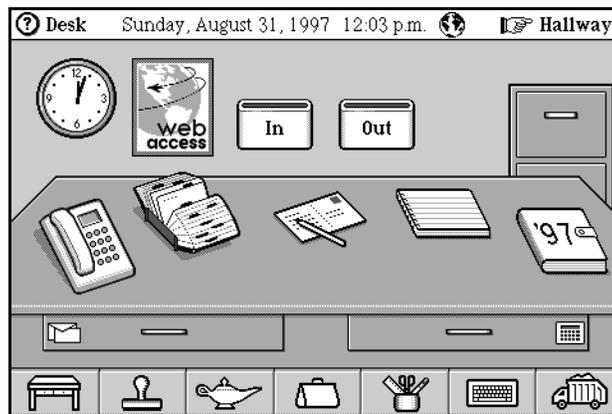
Actions from the web browser
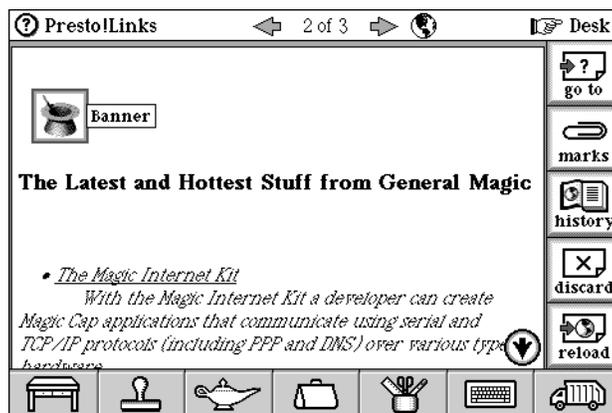
Establishing a connection and downloading web pages

- Touch *go to* to open the Go to page window in which you can type a URL to download.

   The web browser supports these protocols: http://, and mailto://. Currently, there is no support for URLs that begin with ftp://, gopher://, etc. The URL that appears in the window is the last requested URL. If the user doesn't type "http://" it is added automatically.

- The Keyboard automatically opens to the a@b mode which includes most of the characters you'll need to type URLs and e-mail addresses. Hold down the caps key to type an underscore (_), a colon (:), or a tilde (~).

- If there is no connection established to the service provider, the Go to page window looks like the window below. The communicator dials the ISP and begins downloading the web page. Once a connection to the ISP has been established, subsequent download requests begin right away.

- The *go to requested page now* checkbox is used to control connection to the ISP. It is switched on by default and will connect and download the requested URL when you touch the *go* button. If you switch the checkbox off, the *connect* and *queue* buttons appear in place of the *go* button.

- To queue the URL shown in the window, touch *queue*. This places the request in the queue for downloading the next time you explicitly connect to your ISP. Note that as long as the *go to requested page now* checkbox is switched off, any download requests made (i.e., touching a link, a bookmark) are queued. To connect to the ISP and download the URL shown in the window, touch *connect* in the Go to page window.

  Once a connection to the ISP is established, any queued requests are downloaded.

- Once the web server has been contacted and starts sending the requested information, a new web page is added to the scene.

- Once the connection is established, the Communicating window opens showing retrieval progress, the URL, size, and page title. Touch *cancel* to stop the download. Touch *option-cancel* to cancel the queued connections to all service providers.

Note: Once a connection is established, you can use the existing connection to send and collect messages, and to update a mailbox summary from the ISP to which you are connected.

Selecting the service provider

If you have configured Magic Cap to connect to more than one ISP, use the provider button in the Magic lamp to select the ISP with which to connect.

Using the features of the web browser

Once you've downloaded a web page, the web browser offers most of the same features available with desktop web browsers.

- While the connection is open, a spinning globe appears at the top of the screen. Touch it to open the Communicating window to view the connection and download progress. Touch *hang up* to disconnect from the service provider. *Option*-touch the *globe* to return to the web browser scene.
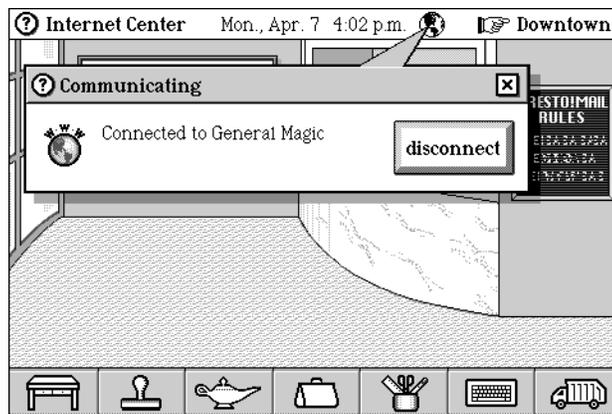
- If a web page requires a password for access, Magic Cap opens a window in which you can enter the authorization information. Until the communicator is powered off, valid authorization information is saved.

- *Option*-touch *go to* to open the Request queue window in which you can see the queue of link requests. Slide a queued request out of the list to remove it from the queue so that it is not downloaded.

- Touch the arrows at the top of the page to look at other downloaded pages. Each time a link is established, either by explicitly linking to a web page or by touching on a link on an existing web page, an additional page is added to the web browser scene if a connection is established, otherwise, the requests are queued.

- An image proxy (an image that hasn't yet been downloaded) is labelled with the image title (the ALT attribute in the HTML source) or the file name if the image title is not available. Touch an image proxy to download an image. With large images, slide left or right to scroll the image horizontally, or scroll up or down to scroll the image vertically.

- Touch *discard* to discard the current page. In the confirmation window that appears, touch *throw away* to discard the current page, or touch *keep* to cancel. *Option*-touch discard to discard the current page without confirmation.

- Touch *reload* to refresh the web page.

- *Option*-touch *reload* to download all images not previously displayed on the web page.

- *Option*-touch the web page to view a window that shows the page's title and URL.

> Currently viewing:
> General Magic Home Page
> http://www.genmagic.com/

- If an image proxy is a link to another web page, *option*-touch the image proxy to open the window entitled, Link information.

  If the image proxy is not a link to another web page, but represents an image only, *option*-touching the image proxy opens the Image information window in which you can touch the *get image* button to download the image.

  The Link information window allows you to add a bookmark for the image, download the image, or go to the URL that the image represents. The Link information window lists the page title and the location (URL).

> **Link information**   ⊠
>
> **name:** Magic Cap for Windows
> **location:** http://www.genmagic.com/MCW/
>
> [add mark]   [get image]   [go]
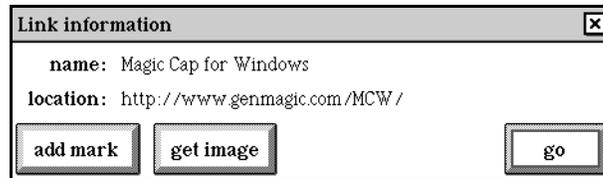
  Touch *add mark* to add a bookmark for the URL that this image represents. The bookmark is added to the Bookmarks window.

  Touch *get image* to download the image onto the current web page. This is the same as touching the image proxy. Touching the downloaded image then downloads the URL represented by the image.

  Touch *go* to download the URL represented by the image without first downloading the image itself.

- *Option*-touch a link to another URL or a downloaded image to open the window entitled, Link information, in which you can add a bookmark for the URL or image, or download the web page.

> **Link information**   ⊠
>
> **name:** Magic Cap for Windows 95
> **location:** http://www.genmagic.com/MCW
>
> [add mark]   [go]
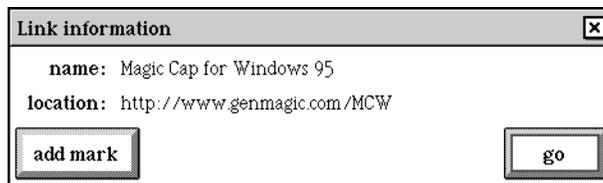
- *Option*-touch an image proxy that represent an image map to open the window entitled, Image map information. In this window you can download the image map onto the current page. This is the same as touching the image proxy.

> **Image map information**   ⊠
>
> This image is a map. To use the map, you
> must download the image.
>
>   [get image]
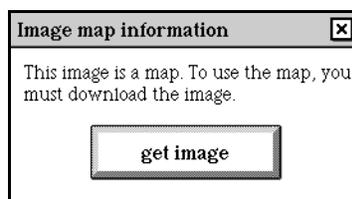
Bookmarks

- Touch *marks* to open the Bookmarks window in which you can save the current URL as a bookmark. To save a URL as a bookmark, touch *add this page*. Touch a bookmark in the list to go to the page. If the page still exists on your communicator, that page is opened. It the page no longer exists on the communicator, a link is established to the URL and the web page is downloaded to the communicator. Slide a bookmark into the Trash truck to throw it away.
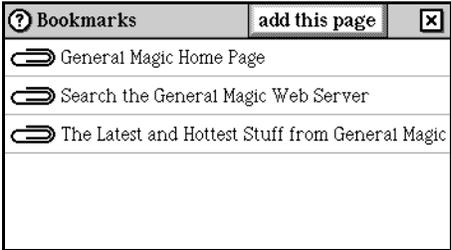
- *Option*-touch *marks* to create a bookmark to the current page without opening the Bookmarks window.

History

- Touch *history* to open a window that lists all of the web pages you've downloaded, from 6 up to a limit of 50 (controlled by a rule). It's a handy way to revisit a page when you can't remember its URL.

- Pages are listed by title and date.
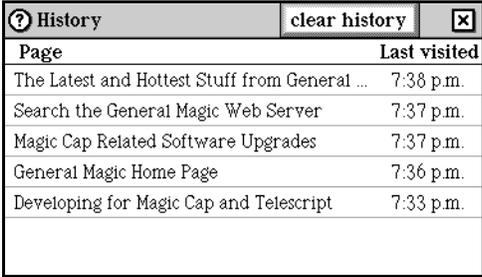
- Touch a page name in the History window to go to that page in the stack, or to download it if it's not in the stack.

- *Option*-touch *history* to see an index of those web pages currently stored on the communicator. Touch an entry to go to that page.
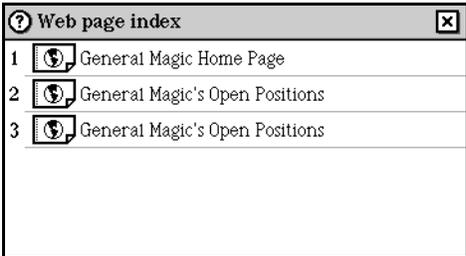
Undeciferable images

Magic Cap supports GIFF and JPEG images, and supports HTML 3.2 with these exceptions: In general, Magic Cap 3.1 supports HTML 3.2 with these exceptions: tables, Java Applets, Java scripts. If an image cannot be interpreted and downloaded to a communicator, this announcement appears.

```
The item at this location cannot be retrieved  ☒
because Presto!Links does not support
'image/tiff' objects.

Location:
http://www.bekkoame.or.jp/~magicqa/ima
ges/tama.tif
```
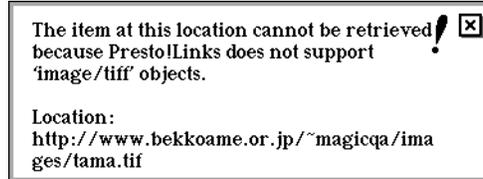
Following the above announcement, the image proxy is replaced by the "undeciferable image" icon.

Web access security

Currently, there is no provision for web security, and there is no way to guarantee the server or client is who they claim to be (server/client authentication). We are currently investigating the addition of SSL (Secure Sockets Layer) to provide the data encryption and server authentication supported by Netscape servers.

Web browser commands in the Magic lamp

- The first time you connect, if the communicator is configured for more than one service provider the window entitled "Collect from" opens, in which you can select a service provider. To select a service provider on subsequent connections, touch the *Magic lamp* and then touch the *provider* button.

provider

The Internet provider window opens in which you can select a service provider.

```
Internet provider          ☒
Select the Internet provider to use when
browsing the Web:

◄      General Magic
```
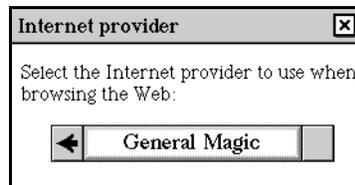
Web browser rules in the Magic lamp

-

```
☐   1. When retrieving a web page, interpret its contents
       as Universal (UTF-8) characters instead of
       Western (Latin-1)
```
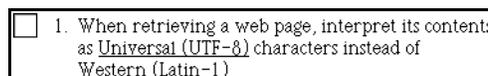
This rule instructs your communicator to decode the contents of documents using the selected standard. English language documents use Western (Latin-1) if the rule is switched off. This rule is switched off by default.

Japanese Magic Cap: Decoding documents in the web browser

In the Japanese version of Magic Cap, the rule about decoding documents includes these options.

> 1. <L>文字コードに、日本語（ISO-2022-JP）を
>   使用する。
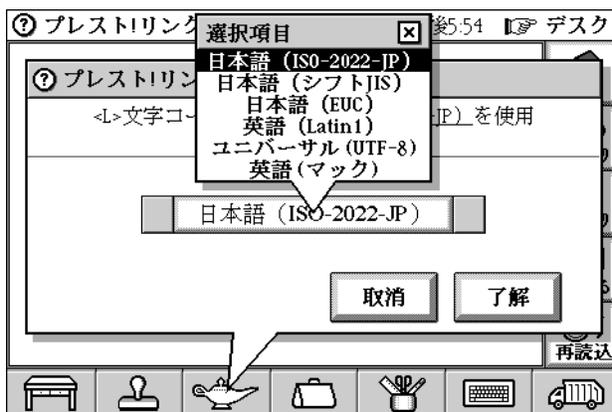
By default, Japanese Magic Cap uses an auto detector to determine how to decode the contents of a document. Switching the rule's setting causes Magic Cap to use the selected standard for decoding all documents.

• Use this rule to automatically download JPEG images along with text. With this rule switched off, images on web pages are represented as image placeholders.

Touch a placeholder to download an individual image. This rule is switched off by default.

> 2. Retrieve images from web pages automatically

• This rule shuts down the phone connection after the specified amount of time has elapsed. This rule is switched off by default.

> 3. Automatically disconnect after 3 minute(s) of no activity

• When this rule is switched on, touching a link will clear all pending requests and download that page. Turn this rule off to cause the linked page to be added to the end of the request list. This rule is switched off by default.

> ✔ 4. If more than one web page is requested, queue additional requests for subsequent retrieval

- Use this rule to control the total number of web pages cached in your communicator. Downloading more than the specified number of pages results in overwriting of the older cached pages. This rule is switched on by default.

> ☑ 5. Keep the last 5 visited web page(s) in Presto!Links.

- This rule causes your communicator to check a web page's size prior to downloading it and to open a confirmation window if the web page is greater than the specified size. This rule is switched on by default.

> ☑ 6. Warn me before retrieving a web page larger than 10K

- This rule allows you to set how many web pages your communicator remembers. These pages are listed in the History window when you touch the *history* button. The setting range for this rule is 6 to 50. If this rule is switched off, the limit is 50. This rule is switched on by default.

> ☑ 7. Remember up to 20 pages in the history list. The history list can contain at most 50 pages.

- This rule causes the web browser to show the HTML source text, as the example below illustrates, instead of interpreting the HTML source and rendering it on the page.

> ☐ 8. When retrieving a web page, do not interpret its HTML tags. Show the page as HTML source text instead.
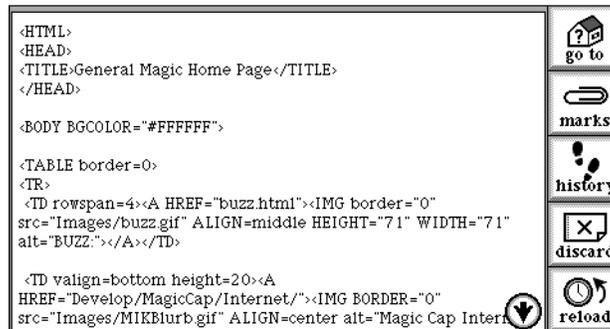
```
<HTML>
<HEAD>
<TITLE>General Magic Home Page</TITLE>
</HEAD>

<BODY BGCOLOR="#FFFFFF">

<TABLE border=0>
<TR>
 <TD rowspan=4><A HREF="buzz.html"><IMG border="0"
src="Images/buzz.gif" ALIGN=middle HEIGHT="71" WIDTH="71"
alt="BUZZ:"></A></TD>

 <TD valign=bottom height=20><A
HREF="Develop/MagicCap/Internet/"><IMG BORDER="0"
src="Images/MIKBlurb.gif" ALIGN=center alt="Magic Cap Inter
```

go to | marks | history | discard | reload

- This rule causes the web browser to more closely mimic desktop browser behavior with respect to the "back" and "forward" arrows at the top of the screen. By default, these arrows navigate through the downloaded pages in the order that pages are placed in the stack—each new page is added to the end of the stack. Therefore, if the user touches a link and then touches the "back" arrow, the web browser displays the page preceeding the current page, which may not be the page from which the link was initiated. A desktop browser, on the other hand, displays the previous page when the user clicks on the "back" button. Users can switch this rule on to more closely mimic the navigation of a desktop browser.

> ☐ 9. Always insert new web page after the current page. This more closely mimics other web browsers.

8

Localized versions of Magic Cap

Note that where the user interface is different for a localized version of the Magic Cap software, those changes are indicated in this specification by a special symbol representing that language.

⚐ Japanese

Japanese Magic Cap

One of the major features implemented in Japanese Magic Cap is Input Method API. For Kana-to-Kanji Conversion engine implementation and HandWriting Recognition engine implementation, please refer to the API documentation ("Magic Cap Programming Reference" or "Interface files" included in Magic Cap 3.1 [Rosemary] Software Developers Kit.) This specification defines the user interface portions of those new features.

Text localization

All system messages, text that appears in windows, and text in books are translated into Japanese.

Localization tools

The Localization Tools enables package developers to easily localize Magic Cap packages. Please refer to the SDK for package localization information.

Application Programmer's Interface (APIs)

This section of the specification describes the Application Programmer's Interface for the Internet services configuration and communications and the Magic Cap mail framework.

Chapter 9 Internet services configuration and communication

Chapter 10 Formatting Internet Mail

<div align="right">

9

</div>

Internet services configuration and communication

The Rosemary version of Magic Cap provides a revised communications framework that makes it easier for developers and users of Magic Cap to connect to the Internet.

Note: These APIs may change due to experience gained during implementation and third-party use.

InternetProvider class

This class is the system's representation of an Internet Service Provider. There are three primary components of an `InternetProvider` object which may be of interest to developers of Internet packages: the provider template (`providerSetup`), the connection options available for communicating with the provider (`meansList`), and the list of Internet services offered by the provider (`serviceInfoList`).

```
[The following is an abbreviated class description. Refer to the source
code for its full implementation]
Define Class InternetProvider;
  inherits from Object;

  field image: Image, getter, sharedSetter;
  field providerSetup: InternetProviderSetup, weak, getter, setter;
  field meansList: ObjectList, getter, setter;
  field serviceInfoList: ObjectList, getter, setter;

  attribute Image: Image;
    // representative image of this provider
```

```
   attribute ProviderSetup: InternetProviderSetup;
     // used by the Internet Center for initial setup of the provider.

   attribute MeansList: ObjectList;
     // list of ways can connect to this provider. The items in
     // this list are subclasses of Means.

   attribute ServiceInfoList: ObjectList;
     // list of configuration information (specific port #s,
     // hostnames, passwords, etc.) for Internet services (POP,
     // SMTP, DNS, etc.) offered by this provider. List items are
     // subclasses of InternetServiceInfo.

   operation CollectInternetServiceChoices(serviceTypes: IntegerList;
     inquiringService: Object; choiceList: ObjectList);
     // query this provider for services matching the requested
     // service types. For each match, an InternetServiceChoice
     // entry is added to the choiceList, with its 'service' field set to
     // 'inquiringService'. If 'serviceTypes' is nilObject, a single
     // entry is added for this provider with its 'internetServiceInfo'
     // field left empty (since no particular service type was requested).
     // (See Internet.h for common serviceTypes)

   operation PreferredServiceInfo(serviceType: Unsigned)
 :InternetServiceInfo;
     // return the first item matching the requested serviceType
     // (See Internet.h for common serviceTypes)

   operation CollectServiceInfo(serviceType: Unsigned;
 resultList:ObjectList);
    // add to resultList those items in serviceInfoList which match
    // the requested serviceType. (See Internet.h for common serviceTypes)

   operation PreferredMeans(): Means;
     // return the preferred means for connecting to this provider.
     // This may be based on certain system parameters, like the
     // user's current location setting

   operation FindOrMakeProviderContact(addToMasterList: Boolean):
 Contact;
      // searches iContactsMasterList for a contact matching the provider's
 name.
     // If not found and providerSetup isn't nil, searches
 iContactsMasterList
    // for a contact matching providerSetup's prototype contact.  If still
     // not found, a copy is made of the prototype (if present) or the
 generic
     // iPrototypeProviderContact.  'addToMasterList' determines if the
     // new contact is added to iContactsMasterList.

   operation RegisterProviderDNS();
     // adds provider's DNSes to iDNSResolver's list of DNSes to query

   operation UnregisterProviderDNS();
    // removes provider's DNSes from iDNSResolver's list of DNSes to query
 End Class;
```

InternetProvider_providerSetup

`InternetProviderSetup` objects provide support for easy initial setup of an `InternetProvider` by the user.   Setup is typically done via the Internet Center building in Downtown. In addition to providing a prototype `Contact`, the `InternetProviderSetup` class acts as an editor for a target `InternetProvider`.

Subclasses should define attributes that work with the `editSteps` to create &/or access the default `Means` & `InternetServiceInfo` for the target provider (`editStepsTarget`).

```
Define Class InternetProviderSetup;
        inherits from Object;
        inherits from EditAttributeClient;
        abstract;

        field contact: FullContact, getter;

    field editSteps: AttributeStepList, getter;
     field editStepsTarget: InternetProvider, weak, getter, setter;

    attribute Contact: FullContact, readOnly;
       // prototype contact for InternetProviders using this setup
    attribute EditSteps: AttributeStepList, readOnly;
       // edits steps for InternetProvider
    attribute EditStepsTarget: InternetProvider;
       // InternetProvider currently being edited by edit steps
End Class;
```

A simple example of using an InternetProvider's providerSetup field to configure the provider follows.

```
  Reference providerSetup = ProviderSetup(internetProvider);
  SetEditStepsTarget(providerSetup, internetProvider);
  EditAttribute(EditSteps(providerSetup), providerSetup, ...etc...);
```

InternetProvider_meansList

The `meansList` field stores a simple list of objects which are subclasses of `Means`. Items in this list define the various ways that the Magic Cap device can connect to the Internet Service Provider.

The `PreferredMeans` operation will return the preferred method of communicating with the Internet Service Provider. This will change based on certain system parameters. The Internet Center building, for instance, provides an interface allowing the user to associate items in a provider's `meansList` with locations defined in the Phone Location scene.

Note that the function of `Means` (and its subclasses) has changed between 1.x and Rosemary. In 1.x, `Means` contained fields or attributes for every element of a "connection", from the physical layer (i.e., `iModem`) up through TCP hostnames & port numbers. In Rosemary, `Means` defines only the underlying physical & data link connection over which a communication stream will run. A `DialupPPPMeans` object, for example, contains just the information necessary to bring up a PPP modem connection to the Internet Service Provider.

```
Instance DialupPPPMeans acmeSanJose 'san jose (PPP)';
        image: iTelephoneMeansImage;
        driver: iModem;
    phoneNumber: '+1\t(408) 555-5555';
    accountName: 'myaccount';
        password: 'gadzooks';
promptForPassword: false;
 localIPAddress: 0;
End Instance;
```

Parameters for Internet services that will run on top of a connection (i.e., hostnames & port numbers) are now specified in `InternetServiceInfo` (& subclass) objects.

InternetProvider_serviceInfoList

The `serviceInfoList` field stores a list of objects which are subclasses of `InternetServiceInfo`. Items in this list define the various Internet services (i.e., mail, web proxy, DNS, etc.) offered by the Internet Service Provider, including any user-specific configuration information (i.e., account name, password, etc.) for those services. The following is an example of service information for a POP mail account:

```
Instance POPServiceInfo acmePOPAccount 'mailbox (POP)';
          image: iPOPInternetServiceImage;
      serviceType: 110;
        hostName: 'pop.acme.net';
            port: 110;
     accountName: 'myaccount';
        password: 'gadzooks';
promptForPassword: false;
End Instance;
```

The `CollectServiceInfo` and `PreferredServiceInfo` methods can be used to query an Internet Service Provider for information on a given service. Constants defining various Internet services (`serviceType`) can be found in the `Internet.h` header file.

The Internet Center building provides an interface allowing the user to add, remove, and modify items in the `serviceInfoList`.

iInternetProviders (InternetProviderList)

The system indexical `iInternetProviders` stores the list of `InternetProvider` objects known to the system.

```
[The following is an abbreviated class description. Refer to the source
code for its full implementation]
Define Class InternetProviderList;
  inherits from DenseObjectList;

  operation CollectInternetServiceChoices(serviceTypes: IntegerList;
inquiringService: Object; choiceList: ObjectList);
    // on behalf of the inquiringService, query all providers for services
    // matching the requested service types (see Internet.h). For each
match,
    // an InternetServiceChoice entry is added to the choiceList. If
    // serviceTypes is nilObject, one entry is added for each provider,
but the
    // internetServiceInfo fields are left empty (since no particular
service
    // type was requested).
End Class;
```

Collecting InternetServiceChoices

The `CollectInternetServiceChoices` operation allows Internet packages to discover what Internet Service Providers in the system can provide a requested Internet service. A POP mail client package, for instance, might do the following to pick a mailbox to collect from:

```
  Reference preferredChoice = nilObject;
  Reference serviceChoices = NewTransient(ObjectList_, nil);
  Reference serviceTypeList = NewTransient(IntegerList_, nil);
  AddIntegerLast(serviceTypeList, kPOP3InternetService);

  CollectInternetServiceChoices(iInternetProviders, serviceTypeList,
self, serviceChoices);
  if (Count(serviceChoices) > 0)
    preferredChoice = CopyTransient(At(serviceChoices, 1));
  Destroy(serviceChoices);
  Destroy(serviceTypeList);

  if (preferredChoice == nilObject)
    return;

  <use the information in preferredChoice to connect>
```

In practice, after calling `CollectInternetServiceChoices`, many Internet packages would want to display the possible choices to the user. A simple choice box in a popup window might be sufficient for this. The items collected by this operation are objects of type `InternetServiceChoice`.

InternetServiceChoice class

The `InternetServiceChoice` class is a subclass of `ServiceChoice`. It contains all the information necessary for initiating an Internet connection between an Internet Service Provider and an Internet service client on the Magic Cap device. Each "choice" represents a unique combination of physical connection (`Means`), Internet Service Provider, and service configuration (i.e., a specific mailbox).

```
[The following are abbreviated class descriptions. Refer to the source
code for their full implementation]
Define Class ServiceChoice;
    inherits from Object;

    field service: Object, getter, setter, weak;
    field means: Means, getter, setter, weak;
    field image: Image, getter, setter, weak;

    attribute Service: Object;
     // communications service client
    attribute Means: Means;
        // connection for this service choice
    attribute Image: Image;
        // image used to represent this service choice
End Class;

Define Class InternetServiceChoice;
    inherits from ServiceChoice;

    field internetProvider: InternetProvider, getter, setter, weak;
    field internetServiceInfo: InternetServiceInfo, getter, setter, weak;
End Class;
```

The Internet Center package

The Internet Center package provides a visual front end to `InternetProviderList, InternetProvider,` and other classes described above. By going into the "Internet Center" building Downtown, users can add and remove Internet Service Providers from the system, and completely configure provider service and connection information.

Developers of Internet packages may be interested in the following system indexicals which the Internet Center package makes use of: `iInternetCenterScene, iInternetProviderPrototypes, iInternetMeansPrototypes,` and `iInternetServiceInfoPrototypes.`

iInternetCenterScene

Entering the Internet Center building places the user in the Internet Center "lobby". This scene is actually a scrollable corridor, much like the Hallway. Internet packages may install doors or any other viewable object in this scene by installing the viewable into `iInternetCenterScene.`

iInternetProviderPrototypes

In the Internet Center "lobby" is a directory of Internet Service Providers. When the user taps the 'new internet provider' button in the Magic lamp, a window pops up offering a choice of "templates" for major Internet Service Providers (i.e., Netcom, AT&T WorldNet, etc.) To add to this list of template providers, install a preconfigured `InternetProvider` object in the `iInternetProviderPrototypes` list.

iInternetMeansPrototypes and iInternetServiceInfoPrototypes

Tapping on a provider in the Internet Center "Provider Directory" takes the user to the provider editing scene. This scene allows the user to modify the items in the `InternetProvider meansList & serviceInfoList.` By installing additional items in the `iInternetMeansPrototypes` and `iInternetServiceInfoPrototypes` lists, Internet packages may extend the choices a user has when selecting new connections and services for the Internet Service Provider.

Example: adding a new InternetProvider

The following is an example of a simple package that adds a new `InternetProvider` to the system. This example is more instructional than demonstrative of a practical application.

```
Instance SoftwarePackageContents contents 'AcmeProvider';
    dateCreated: 0;
    timeCreated: 0;
   dateModified: 0;
   timeModified: 0;
   autoActivate: true;
```

```
            installationList: (ObjectList installationList);
                    author: iGeneralMagic;
                  publisher: iGeneralMagic;
            helpOnObjects: nilObject;
        sceneIndexicalList: nilObject;
        stackIndexicalList: nilObject;
              startupScene: nilObject;
               startupItem: nilObject;
              creditsScene: nilObject;
                      logo: nilObject;
        responseCardStationary: nilObject;
                    hidden: false;
             dontDeactivate: false;
        End Instance;

        Instance ObjectList installationList;
            entry: iInternetProviders;
            entry: (InternetProvider acme);
        End Instance;

        Instance InternetProvider acme 'acme.net';
                        image:    iSmallGeneralMagicLogo;
                 providerSetup:   nilObject;
                     meansList:   (ObjectList meansList);
               serviceInfoList:   (ObjectList serviceInfoList);
              lastPreferredMeans: nilObject;
                     inUseList: nilObject;
                   inUseCounts: nilObject;
        End Instance;

        Instance ObjectList meansList;
            entry: (DialupPPPMeans acmePPP);
        End Instance;

        Instance DialupPPPMeans acmePPP 'dialup (PPP)';
                    image:  iTelephoneMeansImage;
                   driver:  iModem;
              phoneNumber:  '+1\t(408) 774-6900';
              accountName:  'myaccount';
                 password:  'gadzooks';
        promptForPassword: false;
           localIPAddress:  0;
        End Instance;

        Instance ObjectList serviceInfoList;
                    entry: (POPServiceInfo popService);
                    entry: (SMTPServiceInfo smtpService);
                    entry: (InternetServiceInfo dnsService);
        End Instance;

        Instance POPServiceInfo popService 'mailbox (POP)';
                    image:  iPOPInternetServiceImage;
              serviceType: 110;
                 hostName: 'pop.acme.net';
                     port: 110;
              accountName: 'myaccount';
                 password: 'gadzooks';
        promptForPassword: false;
        End Instance;

        Instance SMTPServiceInfo smtpService 'mailer (SMTP)';
```

```
              image:  iSMTPInternetServiceImage;
        serviceType:  25;
           hostName:  'smtp.acme.net';
               port:  25;
       replyAddress:  'myaccount@acme.net';
End Instance;

Instance InternetServiceInfo dnsService 'name server';
              image:  iDNSInternetServiceImage;
        serviceType:  53;
           hostName:  '192.216.16.2';
               port:  53;
End Instance;
```

Example: bringing up a TCP connection

The following is an example of bringing up and taking down a TCP connection to an Internet Service Provider's POP mail server. In order to be more instructive, this code exposes details of setting up a connection that Internet-enabled packages, in practice, will not have to worry about. Magic Cap provides utility functions to bring up and take down a data link connection with a single method call.

```
Method void
POPMailClient_ConnectToServer(ObjectID self)
  {
 NewTCPStreamParameters  tcpParameters;
 Reference ticket = nilObject, means, stream;
 Reference serviceInfo, internetProvider, serviceChoices,
preferredChoice;
 Reference serviceTypeList;
 volatile Reference driver, dataLink;

  // for this example, find the first Internet provider that
  // advertises POP server support
  preferredChoice = nilObject;
  serviceChoices = NewTransient(ObjectList_, nil);
  serviceTypeList = NewTransient(IntegerList_, nil);
  AddIntegerLast(serviceTypeList, kPOP3InternetService);

  CollectInternetServiceChoices(iInternetProviders, serviceTypeList,
self, serviceChoices);
  if (Count(serviceChoices) > 0)
    preferredChoice = CopyTransient(At(serviceChoices, 1));
  Destroy(serviceChoices);
  Destroy(serviceTypeList);

  if (preferredChoice == nilObject)
    return;

  // get the important information for this connection
  means = Means(preferredChoice);
  serviceInfo = InternetServiceInfo(preferredChoice);
  internetProvider = InternetProvider(preferredChoice);
  Destroy(preferredChoice);

  // get the hardware driver we'll be using for this connection (i.e.
iModem)
  driver = Driver(means);

  // check if there is an active connection to this provider
  dataLink = FindActiveLink(iIPSwitch, internetProvider);
```

```
    // if no active connection, start one up; otherwise, bump the
    // usage count on the existing connection
    if (dataLink == nilObject)
      {
      Reference  exception;

      // catch any errors in order to clean up properly
      if ((exception = Try()) != nilObject)
        {
        if (dataLink != nilObject)
          {
          Destroy(dataLink);
          Disconnect(driver);
          }
        Fail(exception);
        }

      // connect the hardware driver (i.e. iModem)
      Connect(driver, means, ipMyStatusAnnouncement);

      // create a new DataLinkServer (i.e. PPPServer) to run over
      // the driver
      dataLink = NewDataLink(means);
      SetUseCount(dataLink, 1);

      // start the DataLinkServer connection
      StartDataLink(dataLink, ipMyStatusAnnouncement);

      // tell the IP layer about the new connection
      AttachLink(iIPSwitch, dataLink, internetProvider);
      Commit();
      }
    else
      SetUseCount(dataLink, UseCount(dataLink)+1);

    // get the IP address & port number for the POP mail server.
    // create a new TCPStream to run over the DataLinkServer, and connect
    // it to the POP server
    tcpParameters.remoteIPAddress = MakeIPAddress(HostName(serviceInfo));
    tcpParameters.remotePort = Port(serviceInfo);
    stream = NewTransient(TCPStream_, &tcpParameters);
    Connect(stream, nilObject);

    // for this example, we just store our references to the created
    // DataLinkServer and TCPStream in 'self' so we can get to them later
    SetMyDataLink(self, dataLink);
    SetMyStream(self, stream);
    }

Method void
POPMailClient_DisconnectFromServer(ObjectID self)
  {
  Reference   stream = MyStream(self);
  Reference   dataLink = MyDataLink(self);

  // disconnect & destroy the TCPStream
  if (stream != nilObject)
    {
    if (Connected(stream))
      Disconnect(stream);
    Destroy(stream);
    SetMyStream(self, nilObject);
    }

  // decrement the usage count of the DataLinkServer.
  // If it's not being used by anyone else, stop the connection
```

```
                // and destroy the DataLinkServer.
                if (dataLink != nilObject)
                  {
                  ulong useCount = UseCount(dataLink);
                  if (useCount > 0)
                    SetUseCount(dataLink, --useCount);
                  if (useCount == 0)
                    {
                    StopDataLink(dataLink);
                    DetachLink(iIPSwitch, dataLink);
                    Destroy(dataLink);
                    SetMyDataLink(self, nilObject);
                    }
                  }
                }
```

10

Formatting Internet Mail

The Magic Cap Internet Mail Formatting API is a set of classes you can use in your applications for formatting, and encoding and decoding Internet mail.The purpose of this chapter is to give you the information you need to use the API. For details about Magic Cap, Magic Cap objects, Magic Cap's mail service, and developing packages for Magic Cap, refer to:

- *Package Development Guide*
- *Guide to Development Tools*

The Internet Mail Formatting API classes provide the means for:

- Formatting mail for encoding
- Encoding and decoding mail for the Internet

The API relies on Magic Cap objects such as Telecards, the Post Office, and Transfer Tickets to process mail. The API gives you transparent access to these and other Magic Cap objects and classes that your application needs to successfully format mail for the Internet.

How the API Works

Two classes, `MailFormatter` and `MailDecoder`, supply the primary entry points for encoding and decoding mail.

`MailFormatter` supplies:

> `PreflightMessage()`, which is called by the Magic Cap Post Office to let the `MailHandler` class look over the formatted mail before it is sent.

FormatMessage(), which is called by the Post Office to format and send a message using a specified transfer ticket.

RegisterPartForFormatting(); which is called to add an object to be encoded by the PartEncoder class.

MailDecoder supplies:

ReadEntireMessage(), which is called for each message that needs to be collected for decoding.

These classes provide access to other API classes that perform formatting, and encoding and decoding details. These classes include:

Class	Description
ContentTypeLabel	Stores and manages message header fields, especially the Content-Type header field, which is central to MIME.
MagicCapMailExtras	
MagicCapMailFormatter	
MailHandler	The MailHandler class receives mail elements from the MailFormatter class and prepares them for mailing.
PartDecoder	
PartEncoder	
RFC822Handler	Handles encoding and decoding to meet RFC822 specifications.

Each of these classes is described later in this chapter, in alphabetical order, following descriptions of the MailFormatter and MailDecoder classes. The descriptions of MailFormatter and MailDecoder include discussions about their interfaces with these other classes.

The MailFormatter Class

This class contains methods for formatting the mail elements contained on a specified Telecard. It also contains the primary entry points to the mail encoding interface. The Post Office uses methods in this class to pass information to the MailHandler class and to format and send a message using a specific transfer ticket.

The MailFormatter class calls operations in PartEncoder and MailHandler. It also interfaces with ContentTypeLabel through PartEncoder and MailHandler operations.

MailFormatter Attributes

Attributes	Description
`AdditionalParts:ObjectList`	A read-only attribute containing all the objects that are going to be formatted as individual parts. Used as the outlist by the flattener
`TelecardToFormat:Telecard`	The specific `readOnly` type Telecard that the `MailFormatter` class is currently processing.
`FormToFormat:Form`	A read-only copy of the prototype form, containing all the form data, but not installed on the Telecard.
`Destination:MailHandler`	The transfer ticket this class uses to pass parts of the message to the mail service. This is a read-only attribute.
`Preflighting:Boolean`	The `mailformatter` is currently preflighting the message.

MailFormatter Operations

MailFormatter operations use the following parameters

Parameter	Description
`destination`	The handler to call, in this case, `MailHandler`.
`part`	The object to encode.
`partEncoder`	The `PartEncoder` to be used to encode the object
`partLabel`	The unique identifier for the object identified by the `part` parameter.
`Telecard`	The specific Telecard currently being processed.

PreflightMessage (telecard:Telecard; destination:MailHandler);

Called by the Post Office to let the `MailHandler` look over the message before it is sent.

FormatMessage (telecard:Telecard; destination:MailHandler);

Called by the Post Office to format and send a message using a specific transfer ticket, which is represented in the `MailHandler` class. The `Mailhandler` operation, `GetStreamForPart()`, is a `MailFormatter` interface to the `ContentTypeLabel` class.

RegisterPartForFormatting (part:Object; partEncoder:PartEncoder):Unsigned;

Call to add an object to be encoded later. Returns the index of the item in the additionalParts list. Called by the `RegisterPartForEncoding` operation from the `PartEncoder` class. This operation from `PartEncoder` is a `MailFormatter` interface to the `ContentTypeLabel` class. See `PartEncoder` and `ContentTypeLabel` for more information.

StartMessageFormatting ();

This is called from the `FormatMessage()` operation before any other formatting operations are called. You can override this operation to do any setup that is needed before formatting. Use the `StartMessageFormatting` override from the `MagicCapMailFormatter` class.

FormatMessageDetails ();

Called from `FormatMessage` to emit details about the message that are not strictly part of the message contents such as the subject line and recipients.The default operation calls the following operations in the order listed:

```
StartHandlingDetails(handler);
FormatOriginators(self);
FormatToRecipients(self);
FormatCCRecipients(self);
FormatBCCRecipients(self);
FormatReplyToAddresses(self);
FormatSubject(self);
FormatInReplyT(self);
FormatMessageIdentifier(self);
FormatFormIdentifier(self);
FinishHandlingDetails(handler):
```

You can override this operation to do additional handling of message details. To modify the handling of specific details override one or more of the preceding operations. These operations are summarized below.

Operation	Description
`FormatOrignators();`	Collects the originators and passes them to HandleOriginators. May be overridden by subclasses.
`FormatToRecipients();`	Collects the To: recipients for the service specificed by the destination in a list and passes it to `HandleToRecipients`. May be overridden by subclasses.
`FormatCCRecipients();`	Collects the CC: recipients for the service specificed by the destination in a list and passes it to `HandleToRecipients`. May be overridden by subclasses.
`FormatBCCRecipients();`	Collects the BCC: recipients for the service specificed by the destination in a list and passes it to `HandleToRecipients()`.
`FormatReplyToAddress();`	Collects the reply to addresses and passes it to `HandleToRecipients()`. May be overridden by subclasses.
`FormatSubject();`	Passes the value of the Subject attribute of the Telecard to `HandleSubject()` if that value is not empty. May be overridden by subclasses.
`FormatInReply();`	Passes the value of the `InReplyTo` attribute of the Telecard to `HandleSubject()` if that value is not empty.
`FormatMessageIdentifier();`	Passes a text identifier of the form of the Telecard to the mail handler. Default implementation does nothing. You can override the default with the FormatFormIdentifier override from the MagicCapMailFormatter class. This override adds extra objects defined by operations in the MagicCapMailExtras class.
`FormatFormIdentifier();`	Passes the message ID to the mail handler.

The `StartHandlingDetails` operation in the `MailHandler` class is called for MailHandler to process the details from the `Format . . .()` operations just listed.

`FinishHandlingDetails` is called to notify `MailHandler` that all of the details have been passed, and to begin to handle message content.

DoneWithMailElements ();

Called after the last `mailElement` has been passed to `FormatMailElement()`. Default method does nothing. You can override this operation by calling the `DoneWithMailElements` override from the `MagicCapMailFormatter` class. The override processes the elements in `attachmentsToSend`, generating either MIME parts to be formatted or objects to be sent along with the extras container.

DoneWithParts ();

Called after the last part has been passed to `FormatPart()`. Default method does nothing. Override to do any sort of final processing or cleanup after all parts have been processed.

FinishMessageFormatting ();

Called from `FormatMessage` after all other formatting operations are called. Override to do any cleanup that is needed after formatting.

MailFormatter Overrides

Init;

Overriden to extract the required parameters from the new parameters structure.

The MailDecoder Class

`MailDecoder` decodes mail. It contains a call to each message that needs to be decoded, operations for interfacing with classes `PartDecoder`, `ContentTypeLabel`, and `MagicCapMailExtras`.

`MailDecoder` retrieves a message, decodes its parts, applies them to the correct portions of the destination telecard, then puts the decoded message in an inbox.

MailDecoder Attributes

Attributes	Description
DestinationTelecard:Telecard	The Telecard that is being composed by the decoder.
MessageDetails:ContentTypeLabel	A read-only attribute containing the details to decode.
PartCount:Unsigned	A read-only attribute that counts of the number of parts.

MailDecoder Operations

`MailDecoder` operations use the following parameters:

Parameter	Description
contentLabel	A copy of the content label for a specified part.
extras	The `MagicCapMailExtras` object containing text styles and other Magic Cap specific adornments
index	The index of the part in the list of parts.
nearThis	An object that controls where other new objects are created. A fundamental Magic Cap convention.
Stream	The source stream containing the message.

Parameter	Description
Telecard	The destination telecard.
TransferTicket	The transfer ticket.

AddPart (part:Object; contentLabel:ContentTypeLabel);

Adds a part to the list of parts belonging to the message currently being decoded.

RemovePartAt (index:Unsigned);

Removes a part from the list of parts for this message. This operation should be called after a part is applied to the destination Telecard.

PartAt (index:Unsigned; var contentLabel:ContentTypeLabel):Object;

Returns the object based on an index. Used for iterating over all the parts. Pass nil for the `contentLabel` parameter if you don't want a copy of the `contentLabel` for the part created and returned.

ReadEntireMessage (source:Stream; ticket:TransferTicket; nearThis:Object):Telecard;

Call for each message that needs to be collected.

ClearParts ();

Call to clear out all remaining parts. Called by `ReadEntireMessage()`.

ReadAndAddParts (source:Stream; nearThis:Object), noMethod;

Called by `ReadEntireMessage`. Override to collect all the message parts from the mail source and add them using `AddPart()`.

**ReadAndAddOnePart
(source:Stream; contentLabel:ContentTypeLabel; nearThis:Object);**

Utility routine to properly decode a part, given a source stream and a `ContentTypeLabel`.

CreateTelecardFromDetails (extras:MagicCapMailExtras; nearThis:Object):Telecard;

Called from `ReadEntireMessage()` to create a Telecard and set its details from the `contentTypeLabel` in `messageDetails`.

ApplyPartsToMessage (card:Telecard);

Called from `ReadEntireMessage()` to take the contents of all the parts and apply them to the correct portion of a Telecard.

DeliverMessageToInBox (message:Telecard);

Call to take the message and put it in the inbox.

The ContentTypeLabel Class

Use `ContentTypeLabel` to store and manage message header fields. This class provides a specialized representation of the Content-Type header field, which is central to MIME. It also provides methods for accessing and manipulating the Content-Type header field. You will find more information about MIME in the chapter addressing that subject.

The Content-Type header field is used to specify the nature of the data by giving type and subtype identifiers, such as type "text" and subtype "plain" for mail messages.

ContentTypeLabel Attributes

`ContentTypeLabel` defines the following attributes:

Attribute	Description
`ContentType:Text;`	Returns the content type, i.e. "text" for the case of "text/plain; charset = us-ascii"
`TypeIsText:Boolean,`	readOnly;
`ContentSubtype:Text;`	Returns the content subtype, i.e. "plain" for the case of "text/plain; charset = us-ascii"
`FormattedContentType:Text,`	A readOnly attribute returning `a line formatted as per RFC1521, i.e."text/plain; charset = iso-2022-jp; hoopy = frood"`
`ContentTypeAndSubtype:Text , readOnly;`	Returns the type and subtype combined, such as "text/plain" intended to be used as a key for looking up a decoder

ContentTypeLabel Operations

`ContentTypeLabel` operations use the following parameters:

Parameter	Description
`parameterKey`	The name of the MIME Content-Type parameter (i.e. "charset")
`tagKey`	The name of the RFC822 header (i.e. "Subject")
`tagIndex`	The index of the mail header, used to iterate over all the headers
`source`	A complete Content-Type header to be parsed into a `ContentTypeLabel` instance

ContentParameterValue (parameterKey:Literal):Text;

Returns the value for the specified parameter, i.e. "us-ascii" when passed "charset" for the case of "text/plain; charset = us-ascii" returns an empty text object if there is no such parameter.

SetContentParameterValue (parameterKey:Literal; parameterValue:HasText);

Sets the value for the specified parameter.

ContentTagValue (tagKey:Literal):Text;

Returns the value for the specified tag, i.e. "1" when passed "form-index." Returns an empty text object if there is no such parameter.

SetContentTagValue (parameterKey:HasText; parameterValue:HasText);

Sets the value for the specified parameter.

FormattedContentTag (tagIndex:Unsigned):Text;

Returns a tag in the form "Subject: Check this out" when passed the index of the subject tag. Used to iterated over all tags when outputing them in the header of a MIME part.

SetUpContentTypeLabel (source:HasText):Boolean;

Given a content type line in source and extracts and stores the various pieces. Returns true if the line was legal as specified by RFC1521.

ContentTypeLabel Intrinsics

`NewContentTypeLabel` uses the following parameters:

Parameter	Description
type	A MIME Content-Type header primary type (i.e. "text", "audio")
subtype	MIME Content-Type header subtype (i.e. "plain", "jpeg")
parameters	Additional MIME Content-Type header parameters (i.e."charset=ISO-2022-JP")

NewContentTypeLabel
(type:Literal; subtype:Literal; parameters:Literal):ContentTypeLabel;

Call this intrinsic to create a transient `ContentTypeLabel`. Pass in any desired initial values, or pass nil to leave it as the default value. The `contentParameters` parameter can have any number of parameter key/value pairs and should not start with a semicolon.

Example:

```
label = NewContentTypeLabel ("text/plain", "charset=iso-2022-jp; hoopy =
frood");
```

The MagicCapMailExtras Class

Processes the sendable objects on the message that are not part of the form. This includes font and style information for the text in the text part of the message, and position, size and image information about the stamps on a message.

MagicCapMailExtras Attributes

Attribute	Description
FormForTelecard:Form	Defnes a non-standard form the telecard may be using.
Adornments:ObjectList	Top-level viewables on the telecard lacking a natural MIME encoding.
NeedsEnvelope:Boolean	Indicates the telecard has a non-standard form and has a separate envelope.

MagicCapMailExtras Operations

Operations in this class use the following parameters:

Parameter	Description
defautlStyle	
text	
MailDecoder	The MailDecoder.
Telecard	The telecard to which to add the extras.

RecordStylesForText (text: HasText; defaultStyle: TextStyle), noFail

Creates entries in stylesForText and textWithStyles for the styles in text.

ApplyExtrasToMessage (telecard: Telecard; decoder: MailDecoder), noFail

Marks the items in textWithStyles with the text styles recorded in stylesForText adds the items in adornments to the telecard.

MagicCapMailExtras Overrides

CanEncodePart;

Just encode ourselves.

ContentTypeForPart;

Application/X-Magic-Cap-Extras.

RegisterPartForEncoding;

Only registers this object if it contains useful state, such as a form, adornments, or text styles.

Init;

Creates initial values for adornments, fontDescriptions, and stylesForText.

Finalize;

Clears out the owning lists so we don't own what we shouldn't when destroyed.

The MagicCapMailFormatter Class

Performs formatting tasks for `MagicCapMailExtras`. This class contains the following overrides:

FormatFormIdentifier;

If the form isn't "well-known", adds it to the extras object to be sent.

FormatMailElement;

Adds the element to attachmentsToSend.

StartMessageFormatting;

Resets attachmentsToSend and extras.

DoneWithMailElements;

Processes the elements in attachmentsToSend, generating either MIME parts to be formatted or objects to be sent along the with extras container.

FormatPart;

Creates a stream and encoder for the part and calls EncodePart.

Init;

Fills in the extras field when self is created.

The MailHandler Class

The `MailHandler` class receives mail elements from the `MailFormatter` class and prepares the mail for mailing (preflight), and sends the mail.

MailHandler Attributes

Attributes	Description
Preflighting:Boolean	A read-only attribute defining operations for preflighting message parts.

MailHandler Operations

`MailHandler` operations use the following parameters:

Parameter	Description
noMethod	The subclass must implement this method.

StartPreflightingMessage ();

Called by the `MailFormatter` at start before calling `CreateStreamForPart` for each part of the message.

FinishPreflightingMessage ();

Called by the `MailFormatter` after all parts have been preflighted.

StartHandlingDetails (), **noMethod**;

Called by the `MailFormatter` before calling any of the other detail handling operations.

HandleOriginators (recipients:ObjectList), **noMethod**;

Called with a list of originators of this message. Generally this is a single entity representing the sender.

HandleToRecipients (recipients:ObjectList), **noMethod**;

Called with a list of To: recipients for this handler. This can be a subset of all the To: recipients for this message, as some might be being sent by a different handler. This list can be empty, if the destination service claims to allow messages with no To: recipient.

HandleCCRecipients (recipients:ObjectList), **noMethod**;

Called with a list of CC: recipients for this handler. This is otherwise the same as `HandleToRecipients()`.

HandleBCCRecipients (recipients:ObjectList), **noMethod**;

Called with a list of BCC: recipients for this handler. This is otherwise the same as `HandleToRecipients()`.

HandleReplyTo (addressesToReplyTo:ObjectList), **noMethod**;

Called with a list of addresses that should be used for replies to this message.

HandleSubject (subject:HasText), **noMethod**;

Called to format the subject line of a message for sending

HandleMessageIdentifier (messageID:HasText), **noMethod**;
Called to format the subject line of a message for sending

HandleFormIdentifier (formIdentifier:HasText), **noMethod**;
Called to include the name of the form in the message

HandleInReplyTo (referencedMessageIdentifier:HasText), **noMethod**;
Called to include the reference to a message to which this one is a response.

FinishHandlingDetails (), **noMethod**;

StartHandlingMessage (), **noMethod**;
Called after all message details have been handled. Message contents will follow.

GetStreamForPart
(partLabel:ContentTypeLabel; **uniqueID:HasText):Stream**, **noMethod**;
Called by `MailFormatter` to get a stream to act as a destination for part of a message. This stream is owned by the mail handler. During preflighting it will return nilObject for the stream in the case where the data for the part does not need to be written out.

FinishedWithStream (partStream:Stream), **noMethod**;
Called by `MailFormatter` to return a stream, created with `CreateStreamForPart()`, to the handler.

FinishHandlingMessage (), **noMethod**;
Last call for a message; time to send.

The PartDecoder Class

This class is called to decode parts of a message and uses the following operations:

DecodePart(source:Stream; contentType:ContentTypeLabel; MailDecoder:
MailDecoder; nearThis: Object):Object;

// Called by MailDecoder to create an object from a MIME part. Works by looking up a decoder based on the type and subtype of the part. Default method returns a buffer object containing the data for the part. Subclasses should override to return more specific kinds of objects, such as text, images or telecards.

ApplyPartToTelecard(part:Object; **contentType:ContentTypeLabel**;
mailDecoder:MailDecoder);
Operation called to put this part on a telecard. Default method puts an undecoded part label on the telecard. You can override it to do something better.

GetDecodingStream(source:Stream; **contentType:ContentTypeLabel):Stream**;

This is a utility routine to create a decoding stream if the content label specifies a content transfer encoding.

FinishedWithDecodingStream(decodingStream:Stream; contentType:ContentTypeLabel);

Called to dispose of the stream created with `GetDecodingStream`. This routine removes tags or parameters from contentType as they no longer apply. For example, if the base64 encoding is removed from an application/excel part, the Content-Transfer-Encoding tag isl be deleted.

FindClosestPartDecoder(contentType:ContentTypeLabel):PartDecoder;

Given a content type label, returns the best possible part decoder. First looks for a part decoder that matches both type and subtype, then looks for a decoder that matches the type. If no match is found it will return an instance of class `PartDecoder`.

The PartEncoder Class

This class is called to encode parts of a message and uses the following operations:

CanEncodePart(part:Object):Boolean

Returns true if the part can be encoded.

RegisterPartForEncoding(part:Object; formatter:MailFormatter):Object

Calls `RegisterPartForFormatting(formatter, part, self)` and returns part called by `MagicCapMailFormatter_DoneWithMailElements` override to do any other pre-encoding tasks (such as storing text styles) return the object actually to be encoded (such as the text in a textfield).

ContentTypeForPart(part:Object):ContentTypeLabel

Returns a label describing the part and how it will be encoded

EncodePart(part:Object; stream:Stream; outList:ObjectList; contentType:ContentTypeLabel)

Call to encode any Magic Cap object. This method simply flattens the object and writes it out to the destination. Override to use some other method to encode the object.

RFC822Handler

Handles encoding and decoding for MIME formats.

RFC822Handler Attributes

Attributes	Description
ToAddressLine:Text	The formatted "To:" header line for the message.
FromAddressLine:Text	The formatted "From:" header line for the message.
CCAddressLine:Text	The formatted "CC:" header line for the message.
BCCAddressLine:Text	The formatted "BCC:" header line for the message.
ReferenceLine:Text	The formatted "In-Reply-To:" header line for the message.
ReplyToAddressLine:Text	The formatted "Reply-To:" header line for the message.
Subject:Text	The formatted "Subject:" header line for the message.
FormIdentifier:Text	The formatted "X-Magic-Cap-Form:" header line for the message.
MessageID:Text	The MessageID of the message.
BoundaryText:Text	A read-only attribute defining the MIME boundary of this message, derived from the MessageID.
DestinationStream:Stream	A read-only override to provide the stream the RFC822 message should be written to.

RFC822Handler Overrides

RFC822Handler overrides use the following parameters:

Parameter	Description
stream	The mail stream. In this case, it could be any stream. Just a place to write the folded/encoded header.
headerTag	The name of the RFC822 header (i.e. "Subject")
headerValue	The contents of the RFC822 header (i.e. "emailaddress@aol.com")
labelForPart	The label for the part
uniqueIDForPart	The part's ID
recipients	Whether RFC1522 encoding should be used to translate non-ASCII data in the headerValue

StartHandlingDetails;

Does nothing, but MailHandler requires an implementation.

StartPreflightingMessage;

Resets numberOfParts.

StartHandlingMessage;

Does nothing, but MailHandler requires an implementation.

HandleOriginators;

Formats the address list and stores it in fromAddressLine.

HandleToRecipients;

Formats the address list and stores it in toAddressLine.

HandleCCRecipients;

Formats the address list and stores it in `cCAddressLine.`

HandleBCCRecipients;

Formats the address list and stores it in `bCCAddressLine.`

HandleReplyTo;

Formats the address list and stores it in `replyToAddressLine.`

HandleSubject;

Formats the subject and stores it in subject.

HandleMessageIdentifier;

Stores the message ID in `messageID.`

HandleFormIdentifier;

Formats the form identifier and stores it in `formIdentifier.`

HandleInReplyTo;

Formats the referenced message ID and stores it in `referenceLine.`

FinishHandlingDetails;

Writes out the standard RFC822 headers for the message.

GetStreamForPart;

If preflighting, only increments `numberOfParts` otherwise writes out the MIME headers for the part and creates the appropriate encoding stream to return.

FinishedWithStream;

Closes and destroys the stream.

FinishHandlingMessage;

Writes the final MIME boundary if the message is multipart.

MIME formats used in Magic Cap

This section of the specification discusses MIME formats used in Rosemary.

Chapter 11 MIME formats

11

MIME formats

Note: This chapter represent our current understanding of proper MIME formats used in Magic Cap. Some changes may be necessary as implementation proceeds.

MIME formats for Magic Cap mail

Magic Cap gives its users is the ability to compose messages containing a rich set of elements, including text, sounds and handwriting.

In Magic Cap version 1.x, users can send rich content messages only to other subscribers of the same electronic mail service. Some existing mail service providers address the problem of sending between services by including only the plain text portions of the message and appending a warning message about missing information.

This section describes a standard format for rich content messages that will remove this limitation, and allow subscribers of different providers to exchange all sorts of content.

Goals for sending and receiving Magic Cap mail

- The mail must get through.

Mail sent between providers through gateways must be transmitted with as much fidelity as would be expected if both the sender and receiver were using the same provider. For example, a message sent from a Magic Cap client must successfully convey to the recipient as much of its message data as possible, no matter what service the recipient is using.

- The mail must work well with non-Magic Cap mail readers.

Messages sent using the Magic Cap software will often be read with mail clients that are not based on Magic Cap, such as Eudora. It is important that as much of the content as possible be formatted in a way that is meaningful to most existing mail readers.

- The mail must be small.

Future products using Magic Cap 3.1 (Rosemary) may include wireless communications capabilities. Wireless communications are often expensive, so it is important that the defined mail format minimize the size of transmitted messages. The mail format should avoid requiring duplicate copies of the same information in different formats.

Implementation

The vast majority of electronic mail service providers use Internet gateways to exchange mail with other service providers. There are also a large number of people who use the Internet as their primary means for sending and receiving electronic mail. For Magic Cap 3.1 (Rosemary), the new format for Magic Cap mail messages takes advantage of standards already in place for exchanging electronic mail messages via the Internet.

There are four important Internet standards that Magic Cap 3.1 (Rosemary) mail messages conform to: RFC821, RFC822, RFC1521, RFC1522. RFC822 defines how text messages must be formatted for transmission on the Internet. RFC1521, (also known as MIME), defines a standard for the structure and content of messages. Magic Cap 3.1 (Rosemary) complies to the standards in the RFCs listed above in that it can handle any incoming e-mail that conforms to these RFCs without losing any information from the message. Outgoing e-mail generated by Magic Cap is formatted in a way that fully complies with the formats and structures defined in the RFCs.

Following is an excerpt from RFC1521. For more information about RFC822 and RFC1521, refer to:

```
http://info.internet.isi.edu/1s/in-notes/rfc/files
```

Abstract of RFC1521

STD 11, RFC822 defines a message representation protocol which specifies considerable detail about message headers, but which leaves the message content, or message body, as flat ASCII text. This document redefines the format of message bodies to allow multi-part textual and non-textual message bodies to be represented and exchanged without loss of information. This is based on earlier work documented in RFC934 and STD 11, RFC1049, but extends and revises that work. Because RFC822 said so little about message bodies, this document is largely orthogonal to (rather than a revision of) RFC822.

In particular, this document is designed to provide facilities to include multiple objects in a single message, to represent body text in character sets other than US-ASCII, to represent formatted multi- font

text messages, to represent non-textual material such as images and audio fragments, and generally to facilitate later extensions defining new types of Internet mail for use by cooperating mail agents.

This document does not extend Internet mail header fields to permit anything other than US-ASCII text data. Such extensions are the subject of a companion document [RFC-1522].

RFC822 headers used in Magic Cap

RFC822 allows for optional user-defined header fields. Small amounts of information can be included in these user-defined header fields to define content that is not defined in the standard. Magic Cap defines certain user-defined headers in order to encode special aspects of the message. For example, to indicate the form used in a Magic Cap message the `X-Magic-Cap-Form` identifier is used in the RFC822 header.

Note: Data types that have not been registered with Internet Assigned Numbers Authority (IANA) are preceded by an `X-`, as in

```
X-Magic-Cap-Form:   postcard
```

Standard RFC822 headers

The sample template below illustrates the information Magic Cap 3.1 (Rosemary) sends with a message.

```
Date:
From:
Message-ID:
MIME-Version: 1.0
```

To specify the recipients, one or more of the following headers are used:

```
To:
bcc:
cc:
```

The values in each of these fields is in the format according to RFC822.

Magic Cap extensions to RFC822 headers

These headers are sent by Magic Cap 3.1 (Rosemary) devices but not required for incoming mail. If omitted, `plain-letter` is used by default.

```
X-Magic-Cap-Form:
X-Magic-Cap-Form-Index:
```

`X-Magic-Cap-Form` names the form used for this message. The built-in possibilities are:

```
postcard
business-letter
plain-letter
form-included
```

In Magic Cap, instances of the Form class contain a list of form items (also called Form Elements). The `X-Magic-Cap-Form-Index: n` identifies the data that follows as data for the form element in position "`n`".

Specification of MIME message parts used for Magic Cap

By default Magic Cap Internet mail can encode and decode the MIME content types listed in this section. Developers and licensees can also extend Magic Cap mail functionality by adding new encoders/decoders for any MIME types desired.

Multiple Parts

```
Content-Type: multipart/mixed; boundary="=zboundary=xxx"
Content-ID:   1
```

Magic Cap mail messages can contain multiple parts. One of the parts contains the main body text from the message. This part can be read by any mail reader on any platform.

Another part contains any style information about the body text, along with any stamps or other portions of the message that are not text but are specific to the way Magic Cap represents the message. Simple text messages can omit this part.

Certain components of a Magic Cap message store additional kinds of data that can be sent in additional MIME message parts. For example, an attached package has a part that contains the data for the package. Storing the package in a separate MIME part allows mail readers on Macintosh or Windows computers to save the package to a file on a hard disk. Later, the file could be transferred to a communicator with Magic XChange or used with Magic Cap for Windows.

Encoding a Magic Cap mail message as one or more MIME message parts allows non-Magic Cap users to enjoy as much of the contents of a mail message as their mail readers can interpret.

PC-based mail readers could be extended with plug-ins to allow display of Magic Cap scribbles.

When there is more than one part in a message, the first content-type is specified as:

```
Content-Type: multipart/mixed; boundary="=zboundary=xxx"
```

Each part is subsequently marked by the boundary marker, as defined in the MIME RFC. If there is just one text body, this is omitted.

Text

The text part contains all of the body text of a message.

The content-type of this part is `text/plain`. The content-encoding is `quoted-printable` (as defined in the MIME specification) or `base64`. The charset parameter for US versions of Magic Cap 3.1 (Rosemary) should be `us-ascii`, unless portions of the text cannot be represented in ASCII. In that case, the charset parameter should be `UNICODE-1-1-UTF-7` or `ISO-2022-JP`.

US versions of Magic Cap 3.1 (Rosemary) send:

```
Content-Type: text/plain; charset=us-ascii
```

```
Content-Transfer-Encoding: quoted-printable or base64
```

Japanese versions of Magic Cap 3.1 (Rosemary) send:

```
Content-Type: text/plain; charset=ISO-2022-JP
Content-Transfer-Encoding: quoted-printable
```

US versions of Magic Cap 3.1 (Rosemary) can receive:

```
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: quoted-printable, or base64, (or none specified)
```

Japanese versions of Magic Cap 3.1 (Rosemary) can receive:

```
Content-Type: text/plain; charset=ISO-2022-JP
Content-Transfer-Encoding: quoted-printable, (or none specified)
```

Other character sets can be supported. The Magic Cap 3.1 (Rosemary) mail framework allows for plug-ins of other character sets.

Magic Cap objects

This part contains a list of Magic Cap objects, which includes all of the sendable objects on the message that are not part of the form. This includes font and style information for the text in the text part of the message, and position, size and image information about the stamps on a message. The format in which the individual objects are encoded is discussed in the section entitled "Encoding Objects," on page 282.

Magic Cap 3.1 (Rosemary) devices send and receive Magic Cap objects using:

```
Content-Type: application/X-Magic-Cap-Extras
Content-Transfer-Encoding: base64
```

Sounds

Magic Cap supports X-WAV as the standard sound format for Magic Cap 3.1 (Rosemary). Only some subformats of X-WAV can be decoded. Messages can contain sound stamps which contain brief sections of compressed user-recorded audio. The stamp is contained in the Magic Cap objects part. The data for the sound is contained in a sound part. Separating the sound data from the stamp allows users to play the sound on desktop systems. A `Content-ID` field will be present to help associate the sound part with its stamp.

Magic Cap 3.1 (Rosemary) devices send and receive Magic Cap recorded sounds using:

```
Content-Type: audio/X-WAV
Content-Transfer-Encoding: base64
```

Internally, Magic Cap 3.1 (Rosemary) supports two standard compressed sound formats. The larger format is 4-bit ADPCM, which is defined by Intel/DVI standard. This is the sound format used when a Magic Cap user records a sound with the option key pressed. A sound object with the Transform field set to iADPCM4bitCompression is in this format. The more compact format is 2-bit ADPCM, which is the default recording format defined by CCITT Standard G-726. A sound object with the Transform field set to iADPCM2bitCompression is in

this format. When these compressed sound objects are sent by Magic Cap, they get converted to standard WAV format commonly used by IBM PCs. The reverse happens when receiving sound from PCs or Magic Cap 3.1 (Rosemary) devices.

All other sound objects, such as built-in, uncompressed sounds, songs, or instruments are encoded as normal Magic Cap objects (`X-Magic-Cap-Extras`).

Packages

Packages can be attached to Magic Cap messages. The storage box stamp is contained in the Magic Cap objects part. The data for the package is contained in a package part. Separating the package data from the storage box allows the package to be received on desktop systems and later downloaded to a communicator.

Magic Cap 3.1 (Rosemary) devices send and receive Magic Cap packages using:

```
Content-Type: Application/X-Magic-Cap-Package-2.0
Content-Transfer-Encoding: base64
```

A `Content-ID` field will be present to help associate the package part with its stamp.

Images

When a scribble is part of a Magic Cap message it will be sent in an `image/X-Scribble` part. The data of the scribble part is the `ExtraData` of the `Scribble` object, which is a highly compressed representation of the scribble itself. (See the Magic Cap Class Reference.)

Magic Cap 3.1 (Rosemary) devices send and receive Magic Cap scribbles using:

```
Content-Type: image/X-Scribble
Content-Encoding: base64
```

Note: The content-types `image/gif` and `image/jpeg` are currently not supported in Magic Cap 3.1 (Rosemary) mail. Support for these types could be added by third-party developers. Magic Cap-native images are sent as Magic Cap objects, not in an image part.

MIME encoding examples

Example of a simple Magic Cap text message

Representation on the Magic Cap screen:

Representation as a MIME compliant message:

```
From: "Rob Tsuk"
Date: Mon, 16 Oct 1995 19:09:01 -0700
X-Mailer: Magic-Cap-2.0
To: "Laura Tsuk"
Subject: dinner tonight
Mime-Version: 1.0
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: quoted-printable
X-Magic-Cap-Form: Postcard

Dear Laura,

Don't forget that we are going over to the Smith's for dinner tonight.

I was thinking that we should leave work a little early to stop at the
package store and pick up a bottle of something nice.

Seeya!
Rob
```

Note: `X-Magic-Cap-Form` is an example of how the user-defined header fields of RFC822 will be used to encode the Magic Cap Form type.

Example of a Magic Cap message with an attached package

Representation on the Magic Cap screen:

Representation as a MIME compliant message:

```
From: "Rob Tsuk"
Date: Mon, 16 Oct 1995 19:09:01 -0700
X-Mailer: Magic-Cap-2.0
To: "Laura Tsuk"
Subject: latest DataMinder
Mime-Version: 1.0
Content-Type: multipart/mixed; boundary=unique-magic-cap-boundary-1
Content-Transfer-Encoding: quoted printable
X-Magic-Cap-Form: postcard

--unique-boundary-1
Content-Type: text/plain; charset=us-ascii
Content-Transfer-Encoding: quoted-printable

Dear Laura,

Here is the latest DataMinder. If you've gotten this on your PIC, press =
the install button to install it or the discard button to throw it away.

--unique-boundary-1
Content-Type: application/x-magic-cap-extras
```

```
Content-Transfer-Encoding: base64

Ok8GeNdQt4tI8Fa/baZDaf8ACOWl15YjtmsobZgTKoXbGweV4RH/ABcHGAQvYWvwS8GWTX0l
u2pLJqLWzTN9qJA8iUzRiNMbICTFpd0aq3mPJICHkdmyrX9m34cWRsGtYb+F9Li8iyaOVIzb
p50M/wAmlAA3nW1u+/G8NCuG5bOz4h+DHgvxTZS6dq8FzJBMb0uqSLHuF1KJZgSFyQWVQPYY
OcnMOvfA7wV4i1bUNauhewXGpRRRS/Z5EjCCOIxRlDsLLtRmAAOPnbj5jVzwx8IPBXhDxAPF
GkWc/wDaC2rWUbzTGRIYD5YEcSH5YVVYo0VYwoCqFxgDHXQbd8+3r5nzfXav9MVNRRVTVtKs
9b0240nUEka2ukMcojmeFip9HQhl+oIrxa88D+NhK8Gn/BPwqwe7jRbmTxleqogaZllkaJbb
O5IAjbQx3s5TKgbq29L8FS6X4O8R+Idc8I2fh7V107VLSC2sNZudQh+xuiENIXCI0reQhzsy
g+VWwWLQ/C34m+FPDPwk8C2evXN3aMujaVpsLCzmuFuLk6dazLFH5KuTIyzKEjOHdlcIrYzX
Rx/G74f3FtZ6jY319dadeGUrfw6dcm1RESGRpHlKBQm24jO4ZBAlPSGUpBafHz4a32nQaxb6
pfNZXOmHVoZBpl0We3CPISIRGZclELKNn7zI8vecgaFx8XfBltJATcXz2k89xB9vSxmNmnk+
UJZGuCoQRAzL+8BK4SVs7YZWSsnxx+HDadBrDaveR2N3NLb2s7aZdhbiSMRs6R/uss2Jchcb
mWKZgCsMhV4+NPgA3lpbJqN40V9YQ6jb3Y0+4NvJHMEaBRJswZJFkDKg5IV+6sBY0P4teDfE
AA4A/4IAgQCBAOUAAP/+AAAOAP+CAIEAgQDlAAD//gAACoH/gf+B/+T//gAA/w==
```

```
--unique-boundary-1
Content-Type: application/x-magic-cap-package-2.0
Content-Transfer-Encoding: base64
Content-ID: xxxxxxx.1

AAAAAAAAAAAAAAAAAAAAAAAAQwAAAEDsAAAAAAAP//8BwAADAAcAAAAAAAABAAB/AAD//wAA
AIAAAAAAAAAgAAAAAAAABgkAd0AigAAAFYAAAAAAAAAE5WAABOXk51hGl1haW4AAABOVv/o
SOcHAC88h4MgAS88h4MgAnAzTq3/0C4AUI8vBy88h4MgAXRwTq3/+i8HLwd0Yk6t//pYjy8A
cDNOrf/QUI8vAC8HdGNOrf/6Lwd0N06t//oqAFiPLwUvPIeCwAB0cE6t//ovBTQ8AR5Orf/6
    *** 312 lines removed ****
gAAhfIAAIZyAACG0gAAh0IAAIeiAACIAgAAiHIAAIjSAACJQgAAicIAAIoyAACKkgAAiwIAA
ItiAACOkgAAj/IAAJCCAADskgAA8zAAAAVSAADtogABAwA==
--unique-boundary-1--
```

Encoding Objects

Magic Cap objects in messages must be encoded before sending to make them compatible with Internet mail standards as well as to preserve the relationships between the objects and the message containing the objects.

Desired Characteristics of the Magic Cap encoding scheme

- Can encode integers, text, object references and references to contents of other parts of a message.

- Can encode or decode directly from a stream without backtracking.

- Can encode or decode packages. Uses unified frozen format for all packages.

- Is fast enough to keep up with a 14,400 baud modem.

- Can be extended and still maintain compatibility.

Encoded objects are produced by passing Magic Cap objects through the Magic Cap 3.1 (Rosemary) Flattener. This converts objects to their frozen (portable) representation. For more information, refer to the *Frozen Objects Format* document for Magic Cap 3.1 (Rosemary).

MIME formats supported by the web browser

The Magic Cap 3.1 (Rosemary) web browser is a separate package that receives data directly from the Internet. It is compatible with HTTP 1.0 and any standard web server. Magic Cap 3.1 (Rosemary) can receive the following types of content:

- text/plain

- text/HTML (Magic Cap 3.1 supports HTML 2.0 but currently does not support backgrounds, text color, and background color.)

- forms (supports displaying and submitting forms per HTML 2.0)

- image/gif (accepts any color GIF but converts to 2-bit by dithering for Magic Cap display)

    - GIF 87A

    - GIF 89A (only stores and displays first frame in GIF 89A data)

- image/jpeg (accepts any jpeg but dithers to 2-bit grayscale for Magic Cap display)

    - jpeg images can be received directly from a web site or converted from gif by proxy

    - progressive jpeg supported but not renderd progressively

- application/x-magic-cap-package-2.0 (for 2.0 communicators only)

Other types of content are not downloaded to the communicator and an announcement will appear indicating to the user that Magic Cap could not decode the content.

Modularization of Magic Cap

This section of the specification discusses how Magic Cap can be broken out into modules to suit a ROM developer's particular needs.

Chapter 12 Modularity

12

Modularity

This section describes how the modularization of Magic Cap 3.1 (Rosemary) affects the user interface, and by extension, users of the Magic Cap software. For information about building customized versions of Magic Cap using modules, refer to the *ROM Development Guide.* For information about building packages that run on customized versions of Magic Cap, refer to the *Guide to Development Tools* for Magic Cap 3.1 (Rosemary)*.*

Magic Cap 3.1 (Rosemary) is the first release of the Magic Cap software that enables licensees to customize the look and feel of Magic Cap. This is accomplished by selecting sets of features and functionality (modules) to be included in ROM, and customizing or replacing Magic Cap elements. It is our hope that this flexibility will encourage licensees to customize the look of Magic Cap in order to save ROM space and differentiate their products so that they can target their customers' specific needs. Licensees will be able to implement customizations without explicit development support from Icras, Inc.. This release is not targeted to dramatically reduce the ROM size by removing system classes.

In Magic Cap 3.1 (Rosemary), licensees can choose from one of two different bundle configurations without explicit development support from Icras. Licensees using Schedule D of the Magic Cap Contract have the option of using any of these two bundles; royalty rates vary depending on the bundle. Bundles B and D as defined in Schedule D are supported. Please consult the contract for further details. The bundles include increasing levels of functionality, culminating in Bundle D, which is the traditional, complete Magic Cap product with all modules. Bundle B includes telephony and adds messaging. Bundle D includes more Personal Information

Management (PIM) features and additional platform features of Magic Cap. The Japanese version of Magic Cap will take additional ROM space. Refer to the Magic Cap *3.1 (Rosemary) Feature Definition* for details.

Note: For the Magic Cap 3.1 (Rosemary) release, Icras will quality test and support only the bundles B and D as defined in Schedule D of the Magic Cap license agreement.

Note: Magic Cap 3.1 (Rosemary) includes a "fallback" location for feature level applications that can no longer install where they normally would—the Library in the Hallway, for example. If Downtown is not in ROM, packages that would normally install Downtown will first try to install in the Hallway, if available, or alternatively install in the Desk accessories drawer. If the Hallway is not in ROM, packages that would normally install in the Hallway will first try to install Downtown, if available, or alternatively install in the Desk accessories drawer. Licensees and package developers can change this default "fallback" location themselves to suit their specific needs.

Magic Cap modules

This section describes the modules currently available in the Magic Cap software and for each one, it lists some of the ramifications involved if the module is removed.

Authoring tools

This module includes the copy, move, and stretch tools, and the text field tools. These tools control the layout of objects.

Ramifications of excluding this module from ROM

- It would not be possible to reposition pencil strokes, text fields, shapes, lines, and objects that can't be moved by simply sliding. Some objects, such as new types of stationery, can only be removed with the move tool.

- Users could no longer make a copy of an object.

- Users could no longer change the size of a text field, shape, or line.

Calculator

This module contains the Calculator icon in the Desk accessories drawer and the Calculator scene itself. Removing the Calculator shouldn't affect other parts of Magic Cap 3.1 (Rosemary).

Clock

The Clock module includes all clocks, such as the one on the Desk, and includes the Date picker and the Clock scene. This module was created to allow licensees the ability to replace the mechanism for setting the date and time. Replacing the Clock should be a straightforward implementation.

If this module is removed, there must be some other way to set the time and date. Various Magic Cap 3.1 (Rosemary) features depend on the user being able to set or know the time, including Datebook appointments and automatic mail collection.

Ramifications of excluding this module from ROM

If there is no way to set the date and time, the following limitations will exist:

• Users can't set the date and time, and their time zone.

• Users can't use the World clock features.

• The Datebook cannot determine the correct date and therefore will not function properly.

• The rules used to automatically connect to a communication service won't work properly if the date and time are not set correctly.

• Users can't register for a communication service until the date and time are set correctly.

• Packages in the Storeroom won't show the correct date.

• Third-party applications that rely on the date and time won't work.

• In the File cabinet, the sorting criterion that uses the month won't work properly.

Control bar

The Control bar is not a module and is not implemented in the same way as other modules. The Control bar can be built in two configurations: the buttons representing the control bar that are normally at the bottom of the screen can be hidden so that licensees can use hardware buttons instead, or the Control bar can be built-in so that it is viewable and fully operational. The Control bar includes buttons for the Desk, Stamper, Magic lamp, Tote bag, Tool holder, Keyboard, and Trash truck.

Ramifications of excluding this module from ROM

• If the Control bar is hidden, there is no Tote bag icon and so users could no longer slide objects directly onto the Tote bag image, slide objects out from the Tote bag image, and *option-*slide a copy of an object from the Tote bag. Instead, just the Tote bag window would be available. It opens when the user touches the Tote bag hardware button. So, moving objects between scenes using the Tote bag

becomes difficult because the Tote bag window may obscure the object a user is trying to move.

- There is no way for the user to know what tool is currently selected.

- Throwing objects into the Trash truck becomes difficult if the Trash window obscures the object a user is trying to throw away.

- Users can no longer look at the images of the Tote bag and Trash truck to quickly see whether they contain items. Normally, the Tote bag and Trash truck bulge when they contain items.

Datebook

The Datebook module consists of the Datebook icon on the Desk, the main Datebook scene, task views that display day, week, month, and year at once, the Choose an appointment type window, task editors for various appointment types, and various windows, including Notes, Alarm and other details, and Repeat options. Removing this module takes away the Datebook and all its features.

Ramifications of excluding this module from ROM

- Users would not be able to schedule appointments.

Desk

The Desk scene is the main scene that appears when users start the Magic Cap software for the first time. Users can touch the Desk button on the left edge of the Control bar to go to the Desk scene at any time, which allows the Desk scene to act as a base for users who wander into an unfamiliar part of Magic Cap and want to return to some known scene.

The Desk scene doesn't provide any functionality itself, but it does contain icons that users can touch to get to many of the main parts of the Magic Cap software, including the Datebook, Name cards, and new messages. The Desk scene also includes the Desk accessories drawer, which can contain icons that lead to other packages, such as the Calculator. Although these icons are in the Desk scene, they are not part of the Desk module. Instead, each icon is included in the module it is associated with; for example, the Datebook icon is in the Datebook module, and so on.

Because the desk scene acts as the user's main focal point, it should be removed with caution– though its appearance and visual theme can be changed. If the desk scene is removed, the icons on the desk and in its drawers will have to appear somewhere else. For example, instead of a desk, alternative implementations could provide a briefcase or a shopping mall as their main scene. The Desk scene might be removed entirely for highly specialized implementations, such as an automated teller machine or information kiosk.

If the Desk scene is removed, the icons on the Desk and in the Desk drawers will appear in a "fallback" location, specified by the licensee. A licensee must determine in what scene the device will boot, and what is the fallback location for icon installation. There are no automatic defaults for these when the desk is removed.

Ramifications of excluding this module from ROM

• The Desk button would have to be changed or removed.

• If the Desk module is replaced or left out of ROM, the lessons in *Getting Started* that use the Desk scene would have to be modified.

Downtown

The Downtown scene includes buildings that represent communicating application packages, such as America Online, and includes the Internet Center where users set up and configure ISP connection information. Downtown also contains other miscellaneous objects, such as directories, a building that leads back to the Hallway, and any other software packages built in to ROM.

Downtown provides an important install point for third-party communicating packages. If Downtown is removed, third-party applications install in the default "fallback" location. The first default "fallback" location provided in Magic Cap 3.1 (Rosemary) is the Hallway, if available, and alternatively the Desk accessories drawer. Licensees and package developers can change this default "fallback" location themselves to suit their specific needs.

Ramifications of excluding this module from ROM

• Items that would normally appear Downtown will appear in a "fallback" location, such as in the Hallway or Desk accessories drawer

• Users won't be able to navigate as gracefully. If the implementation has no Hallway in which to install Downtown packages, these packages will appear in the Desk accessories drawer by default. The Desk accessories drawer was meant to hold small images representing objects that one would normally expect to find in an office such as a calculator; it was not designed with navigation in mind. Objects that would have appeared Downtown and now appear in the drawer often overlap each other, making it hard to tell what is in the drawer. Currently, there is no way to rearrange objects in the drawer so that the icons don't overlap each other.

• Third-party applications that would normally install their entrance point Downtown would have to install elsewhere. Although they can choose amongst the locations available, they may not find this as ideal and may not have designed their products with this in mind.

Drawing tools

This module includes lines, shapes, the Select line style window, and text fields.

Ramifications of excluding this module from ROM

- Users would be unable to draw with lines, or use shapes and text fields.

Favorite places

The Favorite places scene gives the user the ability to create shortcuts to other places and scenes in the Magic Cap software This module includes the Favorite places window and its *add this place* button.

Ramifications of excluding this module from ROM

- Users would no longer have the ability to easily create navigational shortcuts.

Game room

The Game room module contains the Game room scene and its entrance in the Hallway, and the Coin. Removing the Game room does not affect the rest of Magic Cap. Third-party packages that attempt to install icons in the Game room will be redirected to the Hallway or Desk accessories drawer by default.

Hallway

The Hallway scene includes entrances to other rooms, which represent groups of features and functions (Desk, Control panel, Game room, Library, Storeroom) or application packages (third-party packages) available in the communicator. The Hallway also provides access to the Image gallery, Credits, Hallway directories, and drawers which contain padlocks for locking rooms. If this module is removed, the Hallway scene, the drawers, the Image gallery, and the Hallway directories would be inaccessible.

The Hallway provides one of the most important install points for third-party packages. If the Hallway is removed, these packages would be installed somewhere else.

Note: Magic Cap 3.1 (Rosemary) includes a "fallback" location for feature level applications that can no longer install where they normally would. If the Hallway is not in ROM, packages that would normally install in the Hallway will first try to install Downtown, if available, or alternatively install in the Desk accessories drawer. Licensees and package developers can change this default "fallback" location themselves to suit their specific needs.

Ramifications of excluding this module from ROM

- Items that would normally appear in the Hallway will have to appear elsewhere, such as in the Desk accessories drawer.

- Users won't be able to navigate as gracefully. If the implementation has no Downtown in which to install packages that would normally appear in the Hallway, these packages will appear in the Desk accessories drawer by default. The Desk accessories drawer was meant to hold small images representing objects that one would normally expect to find in an office such as a calculator; it was not designed with navigation in mind. Objects that would have appeared in the Hallway and now appear in the drawer may overlap each other, making it hard to tell what is in the drawer. Currently, there is no way to rearrange objects in the drawer so that the icons don't overlap each other.

- Users may not remember that these objects are in the Desk accessories drawer because it is not intuitive to them (i.e., Storeroom in the drawer).

- Third-party applications that would normally install their entrance point in the Hallway would have to install elsewhere. Although they can choose amongst the locations available, they may not find this as ideal and may not have designed their products with this in mind.

Library

The Library module includes the Library scene and its entrance in the Hallway, but not the books. Books can exist outside of the Library, so vital books could be placed somewhere else, such as in the Desk accessories drawer.

Ramifications of excluding this module from ROM

- Third-party packages that attempt to install books in the Library will be redirected to a "fallback" location.

Library books

This module includes all the books normally found in the Library except *Getting Started,* which remains in the system. Some books provide features *(Word Lists, Countries)* that would have to be replaced or abandoned if removed.

Ramifications of excluding this module from ROM

- Users won't be able to add new countries and their dialing codes.

- Users won't be able to edit dialing codes for countries.

- The *expand* button on the Keyboard will still work, but users will not be able to switch this feature on and off.

- Automatic completion of typing will work, but users will not be able to manually control the word lists (add, change, and remove entries, change the limit setting).

- Users would have no way to disable the hot text feature.

- Users would have no way to disable the automatic capitalization of proper names typed into text fields.

Magic hat

The Magic hat includes objects that can be used to customize various parts of the Magic Cap software. Some of these objects require scripts or programming to be useful (switches, buttons, etc.) while others can be used to change the appearance of objects (shadows, colors, borders) but in practice are used mainly by package developers. The objects in the Magic hat are accessed using Construction mode.

Mail

This module provides the basic features for electronic mail, faxing, and beaming, including the new message icon on the Desk, the new message scene in which new messages are composed, the In box and Out box, and the items in the Stationery drawer on the desk.

Ramifications of excluding this module from ROM

- Without this module, the user can't send or receive electronic mail, faxes, or beams.

- The mail command, normally in the Magic lamp, is no longer available.

Name cards

The Name cards module includes the icon on the Desk and the Name cards scene used for displaying all name cards. This module also includes the people picker which is the Address to: window that appears when the user addresses a message, chooses a meeting participant in the Datebook, or uses various phone features to choose a person to call.

If the Name cards were removed, there would need to be a new user interface for functions that require the user to choose a person, such as sending a message or making a phone call. Removing this module is risky because so many parts of Magic Cap depend on choosing a person (datebook appointments, messaging, phone calls).

Ramifications of excluding this module from ROM

- Users would have no way to personalize their communicators.

- Because there would be no mechanism for creating one's name card, messaging would not be possible on a communicator that didn't have the Name cards module.

- The *save* button in the Telephone will no longer allow users to save phone numbers if the Name cards don't exist, although they could use speed-dial buttons instead.

Notebook

The Notebook module includes its icon on the Desk, the Notebook scene, the Notebook index scene, and the Select a new page window. Other parts of Magic Cap don't depend on the Notebook.

Optional sounds and songs

The Magic Cap software includes three kinds of synthesized sounds: sound effects that are an essential part of the user interface, sound effects that aren't as essential, and songs created from instruments that are used to add fun to messages and other objects. There are 12 total sound effects in the user interface. These sound effects are vital and are not removed if this module is left out of ROM: error, touch, trash, magic, alarm, tick, DTMF (phone tones).

Songs are available in a drawer in the Stamper, and instruments appear in the Sound control panel. This module includes non-essential sounds along with all songs and instruments. Sound effects that are vital to the user interface are not included in this module and are therefore not removed if the module is not included in ROM.

Stamps

This module includes the stamps found in the stamp drawers that are always available: general, office, occasions, animations, faces, symbols, leisure, songs, and misc. Most of these global stamps are decorative and don't perform any function. Some stamps perform a function—the sound recording stamp, sticky note, and folder, for example. Several other stamps can be used on messages to trigger various rules for handling, such as the confidential and urgent stamps.

Many scenes include stamps that provide important functions. For example, the Name cards scene uses stamps to add addresses and phone numbers to name cards. Scenes add their own stamps in two ways: a scene can add stamps to the bottom drawer of the main bank of stamps, as the Datebook does, or a scene can install one or more entire banks of drawers, as the Name cards scene does with its labels drawers. Stamp drawers that belong to an individual scene are placed in the scene's module and so are not affected by the Stamps module. Currently, removing the Stamps module leaves the Stamper and the bank of drawers empty of stamps.

See also "Stamps window" on page 179.

Ramifications of excluding this module from ROM

- Users will no longer have stamps available with which to decorate messages.

- Users won't be able to create sticky notes.

- Users won't be able to mark messages urgent, confidential, low-priority.

Telephone

The Telephone module includes the Telephone icon on the Desk, the Telephone scene and its 5 cards: keypad for standard dialing, names for dialing by name, log of calls, services, and the setup scene.

There are three implementations of the Telephone module: installed and fully functional, installed with just the dialing location setup (includes the *location* button in the Controls panel, the Telephone setup page, and the Dialing location scene), and removed completely.

Leaving the Telephone module out of ROM takes away the ability to set a dialing location, which cripples communications, and it takes away the ability to place a phone call directly with the Telephone's keypad interface. Various modules provide other dialing features that depend on the Telephone module for their implementation, but not their user interface. For example, the user can touch a phone number on a name card to dial that number. These dialing features would remain in the system and are not part of the Telephone module, although this would only work if users can set a dialing location.

See "Telephone setup" on page 297.
See also "Phone" on page 120.

Ramifications of excluding this module from ROM

- Because there is no way to set a dialing location, messaging will not work.

- Because there is no way to set a dialing location, Internet connections and web browsers will not work.

Telephone setup

The Telephone setup implementation of the Telephone module includes the *location* button in the Control panels, the Telephone setup page, and the Dialing location scene. This module was created so that licensees could remove the Telephone but still give their users the ability to setup and edit dialing locations, essential for messaging and other communication.

System images and sounds

In Magic Cap 3.1 (Rosemary), licensees can themselves customize the look and feel of Magic Cap by replacing system images and sounds. Replacement images should be roughly the same size in pixels as the originals. Refer to the *ROM Development Guide* for specific instructions. By replacing or altering system images and sounds, licensees to customize the look and feel of Magic Cap in order to differentiate their products so that they can target their customers' specific needs.

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