The Elm Reference Guide

A comprehensive list of all commands,
options and such to the **Elm** *mail system*

The Elm Mail System
(Version 2.4)

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1. Introduction

There are many parts to a complex software system and **The Elm Mail System** is no different. This document describes fully all the options available in the mailer, including the command line options, the commands (in considerably more detail than in *The Elm Users Guide*) and the *.elm/elmrc* file.

To be more explicit, this document covers: a discussion of the *.elm/elmrc* file, command line options of Elm, outgoing mail processing, responses of various commands, mail archive folders, the Alias system, system aliases etc, more on the Elm utilities, and a section for expert mail users.

Without any further ado, then, let's get this show on the road!!

2. The .elm/elmrc File

Elm, like lots of other software on the UNIX® system, has the ability to automatically read in a configuration file at each invocation. The file must be called *elmrc* and reside in the *.elm* directory located in your home directory. It can have any of the entries below, in any order. If you are missing any entries, or if you don't have an *.elm/elmrc* file, the default values (listed below for each option) or those values specified by your systems administrator in a system wide *elm.rc* file are used. Note that those options below designated with '*' can be altered using Elm via the options screen, while those designated with a '+' can be placed on the options screen using the **configoptions** variable. Also note that when you save a new *.elm/elmrc* file via the '>' command of the options screen, it is (re)created including only those options that you have changed via your original *.elm/elmrc* file or via the options screen.

The format for each line of the *.elm/elmrc* file is:

```
variable = value
```

String Variables

aliassortby*
: You can have your alias display sorted by any of the following ways:

alias	Sorts according to *aliasname* for each address.
name	Sorts according to *username* for each address.
text	Presents the aliases in the order found in the *aliases.text* file.

Each of these fields can also optionally be prepended with the sequence ''reverse–'' to reverse the order of the sort. This doesn't imply anything about the order of the message in the *aliases.text* file itself and affects only their order on the display screen. The default is *name* order.

alteditor+
: The editor to use when mailing to a message that already includes text, as the builtin editor cannot handle that situation. Messages that already include text are forwarded messages and replies where the original message is included in the reply. This value is not needed if the **editor** variable is not set to ''builtin''.

alternatives
: This is a list of other machine/username combinations that you receive mail from (forwarded). This is used when the *group reply* feature is invoked to ensure that you don't send yourself a copy of the outbound message. The default is a list of no alternatives.

attribution
: When you **forward** a message or **reply** to it, you can optionally attribute the quoted text to its original author. Defining the attribution string here allows you to indicate the form that the attribution should take. The sequence ''%s'' in the attribution is replaced by the name of the original author. Examples are:

```
attribution = According to %s:
attribution = %s writes:
```

calendar*
: This is used in conjunction with the '<' *scan message for calendar entries* command, as the file to append any found calendar entries to. The default is *calendar* in your home directory.

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charset — This is the character set used for messages with a ‘‘Content-Type: text/plain’’ header. The default depends on your site’s installation, but is usually US-ASCII. **charset** is only recognized if MIME (Multipurpose Internet Mail Extension) support is configured. You could set **charset** to your preferred national character set, but be aware that there is currently no way to change it online. Also you must be aware that Elm probably needs *metamail* to display messages with **charset**=US-ASCII if you change **charset**. Elm tries to know which character set could display US-ASCII too, but its list of compatible character sets is probably not complete.

compatcharsets — This is the list of character sets which are more or less a superset of US-ASCII. This enables Elm to display messages with **charset**=US-ASCII with the builtin pager, or your preferred pager, instead of calling *metamail*. **compatcharsets** is only recognized if MIME support is configured. The ISO-8859-X character sets are defaulted.

configoptions — This is a list of letters that indicate which of the run-time configurable options you desire placed on the options screen (see section 7, **Commands**, for the **options** command). There are 22 run-time configurable options, but only room for 15 on a 24-line screen. The default list is *^_cdefsopyv_am_un*. Two additional characters can be specified for formatting. Those are ‘_’, which adds a blank line, and ‘^’, which places the title message on that line instead of the bottom of the screen. The letters ‘i’, ‘q’, and ‘x’ are reserved for ‘‘return to index’’, ‘‘quit’’, and ‘‘exit’’, respectively, and are not listed as part of the **configoptions** list. The options controlled by each letter are:

a	A)rrow cursor *(arrow)*
b	B)order on copy *(prefix)*
c	C)alendar file *(calendar)*
d	D)isplay mail using *(pager)*
e	E)ditor (primary) *(editor)*
f	F)older directory *(maildir)*
h	H)old sent message *(copy)*
j	J) reply editor *(alteditor)*
k	K) pause after pager *(promptafter)*
l	A(l)ias Sorting *(aliassortby)*
m	M)enu display *(menu)*
n	N)ames only *(names)*
o	O)utbound mail saved *(sentmail)*
p	P)rint mail using *(print)*
r	R)eply copies msg *(autocopy)*
s	S)orting criteria *(sortby)*
t	T)ext editor (~e) *(easyeditor)*
u	U)ser level *(userlevel)*
v	V)isual Editor (~v) *(visualeditor)*
w	W)ant Cc: prompt *(askcc)*
y	Y)our full name *(fullname)*
z	Z) signature dashes *(sigdashes)*

displaycharset — This is the character set which is supported by your terminal. The default depends on your site’s installation but is usually US-ASCII. For sites with X Window System™ support, ISO-8859-1 is a reasonable default.

™X Window System is a trademark of the Massachusetts Institute of Technology.

easyeditor+ The editor to be used by the ``~e'' escape within the builtin editor. The default value is the value of the configuration variable *emacs_editor* (see *The Elm Configuration Guide*).

editor* The editor to use when typing in new mail. If you select ``none'' or ``builtin'' you'll get a Berkeley Mail style interface for all mail that doesn't already have text in the buffer (e.g. a reply, mail with a ``signature'', etc.) There are two possible formats for it, either a command that can have a filename appended to it before being executed, or a string that contains the metasequence ``%s'' which is replaced by the name of the file before being executed. Examples of each are:

```
editor = emacs −nw
editor = emacs −nw %s −f text-mode −f turn-on-auto-fill
```

The default is to use the value of $EDITOR in your current environment, and if not set, an editor selected by the person who configured Elm for your system.

escape The character used with the builtin editor (see **editor** above) to escape from text entry to input a command. When a line begins with this character, the builtin editor interprets it as a command rather than as text to add. The default is '~' (tilde).

fullname* This is the name the mailer uses in messages you send. It is highly recommended that you use your full name and nothing strange or unusual, as that can appear extremely rude to people receiving your mail. The default is to use the ``gcos'' field from the */etc/passwd* file on systems that use this field to store full names, and to use the contents of the *.fullname* file in your home directory on other systems.

hostdomain This is the domain name of your system. This variable is only valid in the system-wide *elm.rc* file. It is only necessary if the value returned by the *getdomainname* system call is incorrect for your mail use or if that system call is unavailable on your system. If this variable is specified, then the **hostfullname** variable must also be specified.

hostfullname This is the ``fully qualified domain name'' of your system. This variable is only valid in the system-wide *elm.rc* file. It is only necessary if the value returned by the *getdomainname* and *gethostname* system calls are incorrect for your mail use or if those system calls are unavailable on your system. It is required if either the **hostdomain** or the **hostname** variables are used within the system-wide *elm.rc* file.

hostname This is the local node-name of your system. This variable is only valid in the system wide *elm.rc* file. It is only necessary if the value returned by the *gethostname* system call is incorrect for your mail use or if that system call is unavailable on your system. If this variable is specified, then the **hostfullname** variable must also be specified.

localsignature See **signature**.

maildir* This is your folder directory. When you specify a folder name beginning with the '=' metacharacter,[1] it stands for this directory name. That is, if you save a message to folder =*stuff* the '=' is expanded to the current value of **maildir**. The default is the directory *Mail* in your home directory.

1. Note that '%' and '+' are synonymous with '=' throughout Elm.

pager*
This is the program to be used to display messages. You can specify ‘‘builtin’’ or the name of any standard pager. If you use ‘‘builtin+’’, each screenfull of displayed message is ‘‘paged’’ from the top of your screen with a title line, while ‘‘builtin’’ simply ‘‘scrolls up’’ subsequent screenfulls once it has ‘‘paged’’ the first screenfull. The default is to use the value of $PAGER in your current environment, and if not set, a pager selected by the person who configured Elm for your system, quite likely ‘‘builtin+’’.

precedences
Some mail transports look at a ‘‘Precedence’’ header in outbound mail messages to determine how to deliver the message. The Elm header editing menu allows you to place a precedence on your mail messages. By default, Elm allows any value to be specified as the message precedence. This option may be used to restrict the allowed precedences to a particular list. For example, you might say:

```
precedences = special-delivery air-mail first-class bulk junk
```

Exactly what precedences your mail transport supports and what they do (if anything at all!) will vary from site to site.

The distinction between the ‘‘Precedence’’ and ‘‘Priority’’ headers is subtle: the precedence tells the mail system how to handle the message and the priority tells the recipient how important the message is. Although these are quite different things, they are often related. This option will also allow you to associate message priorities with precedences. For example, you might say:

```
precedences = special-delivery:urgent air-mail:urgent first-class bulk j
```

In this example, if you select an ‘‘air-mail’’ precedence then the message priority defaults to ‘‘urgent’’. If you select a ‘‘first-class’’ precedence then no special priority is implied. The priorities given in this field are used only if you have not already assigned a priority to your message, and even if one is assigned via **precedences** you can always go back and change it.

prefix+
When you **reply** to a message or **forward** a message to another person, you can optionally include the original message. Defining the prefix value here allows you to indicate what the prefix of each included line should be. The default is ‘‘> ’’ (specified as ‘‘>_’’ — underscore is interpreted as space) and is standard in the UNIX community.

print*
This is the command used for printing mail messages. There are two possible formats for the command, depending on whether or not the command contains the sequence ‘‘%s’’. In the first form the mail message(s) to be printed are piped to the specified command. An example of this form is:

```
print = print −formfeed
```

In the second form the mail message(s) to be printed are dumped into a temporary file, and a ‘‘%s’’ in the command string is replaced with the name of the temporary file. An example of this form is:

```
print = pr %s | lpr
```

Another significant difference between the two forms is that in the second form all output from the command is discarded, but in the first form all output is displayed on the terminal. For example, if you wish to use the ‘‘pass-through’’ feature to print on the ‘‘aux’’ port of a terminal, you must use the first form. The second form is provided for backward compatibility with old versions of Elm. It is depreciated and might be removed in a future release. The default is set by the person who configured Elm for your system.

receivedmail — This is the folder to which incoming mail is saved after you've read it. When you answer *no* to ''Keep unread messages in your incoming mailbox?'' or *yes* to ''Store read messages in your ''received'' folder?'', this is where the messages go. The default is ''=received'', that is, a folder called *received* in your **maildir** directory.

remotesignature — See **signature**.

sentmail* — This is the folder to which a copy of outgoing mail is automatically saved. This is only done if the **copy** boolean variable is set ON. Also note that if the **savename** boolean variable is enabled then this folder may be ignored since the program may save to a folder that has the same name as the login of the person you're sending to. Whether or not a copy is saved, and to what folder, can be changed just prior to sending a message (see the **copy** command of the mail command sub-menu in section 7, **Commands**). The default is ''=sent'', that is, a folder called *sent* in your **maildir** directory.

shell — This defines the shell to use when doing '!' escapes and such. The default is to use the value of $SHELL in your current environment, and if not set, a shell selected by the person who configured Elm for your system. Note that the '!' escape is optional and may not be enabled in your version of Elm.

signature — This defines the file that is automatically appended to all outbound mail before the editor is invoked. Furthermore, if you'd like a different signature file for ''local'' mail and ''remote'' mail (remote being via other hosts), you can alternatively define two variables, **localsignature** and **remotesignature**, to have the same functionality. The default is to not have signatures appended to your messages.

sortby* — You can have your folder sorted in any of the following ways:

from	Sorts according to whom each message is *from*.
lines	Sorts *shortest* to *longest* by message.
mailbox	Leaves the messages in the order found in the folder.
received	Sorts *least recently received* to *most recently received*.
sent	Sorts *least recently sent* to *most recently sent*.
status	Sorts by *priority*, *action*, *new*, *tagged*, then *deleted*.
subject	Sorts according to the *subject* of each message.

Each of these fields can optionally be prepended with the sequence ''reverse–'' to reverse the order of the sort. This doesn't imply anything about the order of the messages in the folder itself and affects only their order on the index screen. The default is *mailbox* order.

textencoding — This is the value for the ''Content-Transfer-Encoding:'' header, which is used to tell MIME (Multipurpose Internet Mail Extension) capable mail readers how they should decode your mail. The default depends on your site's installation, but is usually *7bit*. Other possible values are *8bit*, *base64* or *quoted-printable* (see RFC1341 for details). *7bit* and *8bit* implies no encoding.

Note that Elm doesn't look at this value; it is just placed in your outgoing mail headers. If you put *base64* or *quoted-printable* as the value, Elm will NOT turn your message into a *base64/quoted-printable* encoded message. You will have to do that yourself with whatever means are available in your MIME capable mail reader. Metamail, for instance, has a program called mimencode that you can use.

tmpdir
: Use this if you want to define your own directory for the temporary file Elm creates while running. This is only necessary if using the system temporary directory could cause problems, such as when not all NFS clients mount the common temporary directory, or when the temporary directory is prone to being cleared periodically. The default entry of the system temporary directory is normally OK.

visualeditor+
: The editor to be used by the ‘‘~v’’ escape within the builtin editor. The default value is the value of the configuration variable *vi_editor* (see *The Elm Configuration Guide*).

weedout
: When specifying this option, you can list headers that you *don't* want to see when you are displaying a message. This list can continue for as many lines as desired, as long as the continued lines all have leading indentation. All headers in this entry append to the default weedout list. There are two special header flags. The first, ‘‘*clear-weed-list*’’, clears the default list. The second, ‘‘*end-of-user-headers*’’, terminates the entry, in case the following lines look like they might be more headers for the list. The default **weedout** list includes the following header strings:

```
>From
Apparently-To:
Content-Length
Content-Transfer-Encoding
Content-Type:
From
In-Reply-To:
MIME-Version
Message-Id:
Newsgroups:
Received:
References:
Status:
X-Mailer:
```

Note that the ‘‘From’’ entry weeds out both ‘‘From:’’ and the ‘‘From ’’ headers. If you just want to weed out ‘‘From ’’, for example, put a ‘‘*clear-weed-list*’’ at the start of the list followed by ‘‘From_’’ or ‘‘From ’’.

Numeric Variables

bounceback
: This is a hop count threshold value and allows you to set up the mailer so that when you send mail more than *n* machines away, it'll automatically include a ‘‘Cc:’’ to you through the remote machine. In practice this should be very rarely used. Note that this refuses to bounce mail off an Internet address. The default is to have it set to zero, which disables the function.

builtinlines
: This is used to determine if the builtin pager should be used on some messages even if you would usually use an external pager program. There are two ways of determining whether the builtin pager should be used. If you want any message that is shorter than *n* lines to use the internal pager, set this variable to *n*. If you want the builtin pager to be used if the message is *m* lines shorter than the number of lines on your screen, set this variable to *–m*. Setting this variable to zero will result in the message always being sent through your external pager. This variable is used only if the pager is not set to the builtin pager. The default is –3.

readmsginc This variable modifies the display of the message ‘‘Reading in *foldername*, message: #’’, which is displayed when reading a new folder. The message count is normally updated as each message in the folder is read. If you are on a slow terminal and are reading a folder with a large number of messages, the time it takes to redraw the message count can significantly exceed the time it takes to simply read the folder.

The **readmsginc** variable controls the frequency with which the message count is updated. If this parameter is set to 50, the message count will be updated after every 50 messages (i.e., at 50, 100, 150, and so forth). The default value for this parameter is 1. If a value of less than 1 is specified for this parameter, the value is ignored, and the default value is used instead.

sleepmsg This variable modifies the time Elm waits after displaying a transient message before erasing it and continuing. It can be set to zero to suppress the wait entirely. It is in units of whole seconds.

timeout On more advanced systems, it’s nice to start up the mailer in a window and let it sit in background until new mail arrives (see *wnewmail* for another window based program), at which point it can be brought up to the forefront of the system and read. In this case, it would be quite convenient to have the mailer internally resynchronize every so often. This option specifies the number of seconds that this occurs.

This is also useful for non-windowing terminals. For example, you can leave Elm running at night (I usually do) and when you come in in the morning it’ll be all ready to read your mail!

The default is a 300 second (5 minute) timeout period.

userlevel* This is what the program uses to determine the relative level of sophistication of the user. The values are ‘0’ for a new user (the default), ‘1’ for someone familiar with Elm, and ‘2’ for experts. Some advanced features are hidden from novice users, while experts get less verbose prompt messages. The default is ‘0’.

Boolean Variables

The value assigned to boolean variables can be ‘‘ON’’ or ‘‘OFF’’ only.

alwaysdelete Set ON to set the default answer to the ‘‘Delete messages?’’ prompt to *yes* (see the **quit** command in section 7, **Commands**, and the **ask** variable below). This default answer also applies to deletions from the alias system. The default for **alwaysdelete** is OFF.

alwayskeep Set ON to set the default answer to the ‘‘Keep unread mail in incoming mailbox?’’ prompt to *yes*. However, if you set **alwaysstore** OFF or answer *no* to the ‘‘Store read mail in ‘‘received’’ folder?’’ prompt, it is presumed that you also want to keep your unread mail in the incoming mailbox, so the value of **alwayskeep** is ignored in those cases. See the **quit** command in section 7, **Commands**, and the **ask** and **alwaysstore** variables below for more details. The default for **alwayskeep** is ON.

alwaysstore Set ON to set the default answer to the ‘‘Store read mail in ‘‘received’’ folder?’’ prompt to *yes* (see the **quit** command in section 7, **Commands**, and the **ask** variable below). The default for **alwaysstore** is OFF.

arrow* Sometimes you are forced to use a slow or ‘‘dumb’’ terminal. Set ON to make the current message pointer the ‘‘–>’’ sequence rather than the inverse bar. Note that this is overridden by the

‘‘−a’’ command line option (see section 3, **Command Line Options**). The default is OFF.

ask — Set OFF to tell Elm that you’d rather not be asked ‘‘Delete messages?’’ and such each time you quit, resynchronize, change folders, or return from the alias system, but that it should just use the values of **alwaysdelete**, **alwaysstore**, and **alwayskeep** without prompting. Note that when you quit **Elm**, if you use ‘Q’ instead of ‘q’, you will never be questioned, regardless of how you have **ask** set. See the **quit** commands in section 7, **Commands**, and the **alwaysdelete**, **alwayskeep**, and **alwaysstore** variables above for more details. The default for **ask** is ON.

askcc+ — Set OFF to allow sending mail without being presented the ‘‘Copies to:’’ prompt for each message. This still allows you to explicitly include addresses in the ‘‘Cc:’’ list via either the header editor or ‘‘~c’’ in the builtin editor (see section 8, **Using Elm with ‘‘editor = none’’**). The default is ON.

autocopy+ — Set ON for Elm to automatically copy the text of each message replied to into the edit buffer. Otherwise you will be prompted as to whether you want the message included in your reply. See the **prefix** variable under **String Variables** in section 2 for how copied text is marked. The default for **autocopy** is OFF.

confirmappend — Set ON to make Elm ask for permission to append messages to the end of any file that already exists. Whether the file is a mail folder in the user’s mail directory or an ordinary file makes no difference. The default is OFF.

confirmcreate — Set ON to make Elm ask for permission before it creates a new file to store messages in. It makes no difference whether the new file would be a mail folder in the user’s mail directory or an ordinary file. The default is OFF.

confirmfiles — This allows you to have some last resort control over Elm when a message would be appended (by copy, save, or auto-cc) to an existing file which is not a folder in your mail directory (see the **maildir** variable under **String Variables** in section 2). Set ON to make Elm ask for permission to append a message to the end of an ordinary file, otherwise it silently adds the message to the end of the specified file whether it is a folder or not. The default is OFF.

confirmfolders — Set ON to make Elm ask before creating new mail folders in your mail directory (see the **maildir** variable under **String Variables** in section 2), otherwise it silently creates new mail folders whenever a copy of a message is going to be stored in a folder that does not already exist. See the **copy**, **savename**, and **forcename** variables below for additional information about copying messages. The default for **confirmfolders** is OFF.

copy+ — Set ON to have silent copies made of all outgoing mail. Where the copy of the message is saved is determined by the **maildir** and **sentmail** string variables and the **savename** and **forcename** boolean variables. Whether a copy is saved and to which folder can also be set prior to sending a message — see the **copy** command of the mail command sub-menu in section 7, **Commands**, for details. The default for **copy** is OFF.

forcename — Set ON to force creation of folders for copies of outbound mail by the recipient name. For complete details of how to enable automatic copying of outbound messages, see the **copy** and **savename** boolean variables. The default is OFF.

forms — Set ON to enable the generation of ‘‘forms’’ type messages. See the *Elm Forms Mode Guide* for further information about mail forms.

keepempty — The mail system has a habit of deleting folders when you've removed everything from them. Set ON to preserve empty folders as zero-length files. Note that this option does not apply to your incoming mailbox. The default is OFF.

keypad — Set ON to indicate that you have an HP terminal and want the *<NEXT>*, *<PREV>*, *<HOME>* and *<SHIFT-HOME>* keys enabled. The default is OFF.

menu* — Set OFF to inhibit the menu display on all screen displays within Elm. Note that this is overridden by the ''–m'' command line option (see section 3, **Command Line Options**). The default is ON.

metoo — Set ON to get a copy of mail you send to a mailing list you are on, otherwise you do not get a copy of such messages. The default is OFF.

movepage — Set ON to enable commands that move through the folder by pages (see the '+', '–', *<right>*, and *<left>* keys in section 7, **Commands**) to move the current message pointer to the top of that page of messages. Set OFF to not alter the current message pointer location when moving through pages. The default is OFF.

names* — Set OFF to display the primary recipients' addresses on your screen with their full names when you send a message. Set ON to display only the full names. The default is ON.

noheader — Set ON to not include the headers of messages when copying a message into the edit buffer for replying or forwarding (see the **autocopy** variable above). The default is ON.

pointnew — Set ON to cause the current message pointer to point to the first new message in your incoming mailbox when started, instead of at message #1 of the index. This has no effect for other folders since they are not expected to have ''new'' mail. The default is ON.

promptafter+ — Set ON to display a command prompt rather than the index screen when exiting from an external pager. This variable has no effect on the builtin pager. See the **pager** variable under **String Variables** in section 2 to specify which pager to use to read messages.

If your external pager immediately exits when it reaches the end of the message, you should set **promptafter** ON so that the last screen of the displayed message is not immediately replaced by the index screen. If your external pager doesn't exit until you command it to, you have a choice. If you usually want to see the index screen before issuing a command, setting this variable OFF eliminates the extra keystroke needed to return to the index screen. If you usually don't need to see the index screen before issuing the next command, setting it ON allows you to enter your next command without waiting for the index screen to be redrawn. The default is ON.

resolve — Set ON to move the current message pointer to the next message on the index when a mail message is ''dealt with'' through deleting, undeleting, saving, forwarding, etc. or set OFF to leave the current message pointer unchanged. The default is ON.

savename — One of the problems with electronic mail systems is that one tends to get very large, one-dimensional (flat) files that contain lots of completely unrelated mail. Elm can use a more intelligent algorithm: for incoming mail, when you **save** or **copy** it (see section 7, **Commands**), the default folder is the login name of the person who sent you the message (changed by pressing anything other than *<return>* of course). Similarly, when sending mail, instead of just blindly saving it to the **sentmail** folder, Elm can save it to a folder that is the login name of the recipient of the mail.[2] Set **savename** ON to enable this algorithm.

If **forcename** is OFF (see above), the copy is saved to that folder only if the folder already exists. In practice, this means that important people that you communicate with (those that you tend to save mail from) have folders that are actually *a recorded log of the discussion in both directions* and others (random mailings) are all stuffed in the **sentmail** folder for easy perusal and removal (see the **sentmail** variable under **String Variables** in section 2). If you always want to save copies of outgoing messages in separate folders by recipient login name, you'll want to set **forcename** ON.

The default for **savename** is ON.

sigdashes+ Set ON to tell Elm that you wish to follow the convention of prefixing your signature with ''*newline dash dash blank newline*''. This is placed in your message before your signature file (see the **signature**, **localsignature**, and **remotesignature** variables under **String Variables** in section 2). If OFF, the signature file, if any, is placed at the end of the message without any prefix. The default is ON.

softkeys Set ON to tell Elm that you have an HP terminal with the HP 2622 function key protocol and that you'd like to have the function keys available while in the program. The default is OFF.

titles Set ON to have the first line of a message titled with:

`Message` *N/M* `from` *username* *date* `at` *time*

where all the information is extracted from the message. This is especially useful if you weed out all the headers of each message with a large **weedout** list (see the **weedout** variable under **String Variables** in section 2). The default is ON.

usetite Set ON to enable use of the *termcap/terminfo* **ti/te** capabilities. Many terminal emulators require it (not the least of which is the OpenLook *cmdtool*). Some terminal emulators clear the screen on **te** (some *xterm*s). Set OFF to disable use of **ti/te**. Note that this is overridden by the ''–t'' command line option (see section 3, **Command Line Options**). The default is ON.

weed Set ON to have Elm ''weed out'' certain headers from displayed messages, that is, not display them. The **weedout** variable under **String Variables** in section 2 allows you to custom define the set of headers you would like to not have displayed while reading messages. The default for the **weed** variable is ON.

For a better idea of how this all works, here's a sample *.elm/elmrc* file. While looking through it, notice that you can have lots of comments and blank lines for readability and that you can also use ''shell variables'' and the '~' (tilde) metacharacter for your home directory, and they are expanded accordingly when read in by the mailer. Note that this was automatically saved by the Elm program on the fly from the options screen.

```
#
# .elm/elmrc – options file for the ELM mail system
#
# Saved automatically by ELM 2.4 for Elm Development Group
```

2. When sending to a group, it's saved to the login name of the first person in the list only.

```
#

# For yes/no settings with ?, ON means yes, OFF means no

# where to save calendar entries
calendar = ~/.Agenda

# what editor to use ("none" means simulate Berkeley Mail)
# ´%s´ can be used as the temporary filename for the outgoing message
editor = none

# the character to use in the builtin editor for entering commands
escape = ~

# the full user name for outbound mail
fullname = Elm Development Group

# where to save received messages to, default file is "=received"
receivedmail = $HOME/Mail/received

# where to save my mail to, default directory is "Mail"
maildir = /users/elmdev/Mail

#directory to hold my temporary files to avoid NFS cross mount problems
tmpdir = /users/elmdev/Mail/tmp

# program to use for displaying messages (´builtin´ is recommended)
pager = builtin

# prefix sequence for indenting included message text in outgoing messages...
prefix = >_

# how to print a message (´%s´ is the filename)
print = lpr -Plw2 %s

# attribution string for replies (´%s´ is the author of original message)
attribution = According to %s:

# where to save copies of outgoing mail to, default file is "=sent"
sentmail = /users/elmdev/Mail/mail.sent

# the shell to use for shell escapes
shell = /bin/csh

# local ".signature" file to append to appropriate messages...
localsignature = localsig

# remote ".signature" file to append to appropriate messages...
remotesignature =  remotesig

# do we want dashes above signatures? (News 2.11 compatibility and convention)
sigdashes = ON
```

```
# how to sort folders, "Reverse Sent" by default
sortby = Reverse-Received

# should the default be to delete messages we´ve marked for deletion?
alwaysdelete = ON

# should the default be to store read messages to the "received" folder?
alwaysstore = ON

# should the default be to keep unread messages in the incoming mailbox?
alwayskeep = ON

# should we use the "->" rather than the inverse video bar?
arrow = OFF

# should the message disposition questions be displayed (ON) or
# auto-answered (OFF) with the default answers when we resync or change folders?
ask = ON

# would you like to be asked for Carbon-Copies information each msg?
askcc = ON

# automatically copy message being replied to into buffer?
autocopy = OFF

# threshold for bouncing copies of remote uucp messages...
# zero = disable function.
bounceback = 0

# save a copy of all outbound messages?
copy = ON

# do we want to be able to mail out AT&T Mail Forms?
forms = OFF

# should we keep folders from which all messages are deleted?
keepempty = OFF

# we´re running on an HP terminal and want HOME, PREV, NEXT, etc...
keypad = OFF

# should we display the three-line ´mini´ menu?
menu = ON

# would you like a copy of a message you send to an alias you are on?
metoo = OFF

# when using the page commands (+ - <NEXT> <PREV>) change the current
# message pointer...?
movepage = ON

# just show the names when expanding aliases?
names = ON
```

```
# when messages are copied into the outbound buffer, don´t include headers?
noheader = ON

# start up by pointing to the first new message received, if possible?
pointnew = ON

# prompt for a command after the external pager exits?
promptafter = ON

# emulate the mailx message increment mode (only increment after something
# has been ´done´ to a message, either saved or deleted, as opposed to
# simply each time something is touched)?
resolve = ON

# save messages, incoming and outbound, by login name of sender/recipient?
savename = ON

# save outbound messages by login name of sender/recipient even if the
# associated folder doesn´t already exist?
forcename = OFF

# are we running on an HP terminal and want HOME, PREV, NEXT, etc...?
# (this implies "keypad=ON" too)
softkeys = OFF

# set the main prompt timeout for resynching...
timeout = 60

# display message title when displaying pages of message?
titles = ON

# are we good at it?  0=beginner, 1=intermediate, 2+ = expert!
userlevel = 2

# enable the weedout list to be read?
weed = ON

# what headers I DON´T want to see, ever.
weedout = "Path:" "Via:" "Sent:" "Date" "Status:" "Original" "Phase"
            "Subject:" "Fruit" "Sun" "Lat" "Buzzword" "Return" "Posted"
            "Telephone" "Postal-Address" "Origin" "X-Sent-By-Nmail-V" "Resent"
            "X-Location" "Source" "Mood" "Neuron" "Libido" "To:" "X-Mailer:"
            "Full-Name:" "X-HPMAIL" "Cc:" "cc:" "Mmdf" "Network-" "Really-"
            "Sender:" "Post" "Message-" "Relay-" "Article-" "Lines:"
            "Approved:" "Xref:" "Organization:" "*end-of-user-headers*"

# alternative addresses that I could receive mail from (usually a
# forwarding mailbox) and don´t want to have listed...
alternatives = dsidev!elmdev  dsirel!elmdev  elmdev@dsidev  elmdev%dsidev

# list of delivery precedences allowed, or empty to allow anything
# precedence may be followed by optional ":priority" specification
precedences = special-delivery:urgent air-mail:urgent first-class bulk junk
```

```
# name of Character Set used with MIME text/plain Content-type
# US-ASCII is default. Be aware that if you use a national charset
# elm probably needs metamail to display US-ASCII. Elm tries to
# know if that charset could display US-ASCII too, but the list
# of us-ascii compatible charsets is not yet complete
charset=US-ASCII

# name of Character Set which the display supports. This is independent
# of the above "charset".
displaycharset=US-ASCII

# list of Character Sets, which are more or less a superset of US-ASCII
# so we know that we can display messages with charset=US-ASCII without
# help of metamail
compatcharsets = ISO-8859-1 ISO-8859-2 ISO-8859-3 ISO-8859-4 ISO-8859-5 ISO-8859-6 ISO-88

# would you like to use termcap/terminfo ti/te entries?
usetite = ON

# Value by which message count is incremented while reading a new mailbox.
# Setting this value to a number larger than one will speed up the time it
# takes to read a large mailbox when using a slow terminal.
readmsginc = 5

# time in seconds which Elm will wait after displaying a transient message
# and before erasing it.  Can be 0 or positive integer.
sleepmsg = 2
```

3. Command Line Options

There are a number of command line options to the Elm program, with only one that needs to be remembered: ‘‘−?’’or ‘‘−h’’ for help.

The options are:

−a This allows you to have the ‘‘−>’’ arrow pointer rather than the inverse bar. This can also be set in the *.elm/elmrc* file with the boolean variable **arrow**.

−c Check only. This is useful for expanding aliases without sending any mail. The invocation is similar to invoking Elm in send-only mode:

`elm −c` *list-of-aliases*

−d *n* Set debug level to *n*. Useful for debugging the Elm program, this option will create a file in your home directory called *ELM:debug.info* containing a running log of what is going on with the program. Level *n* can be 1 through 11, where the higher numbers generate more output. This option might be disabled by the the person who configured Elm for your system.

−f *folder* Read the specified folder rather than the default incoming mailbox. Note that you can use the same metacharacters (e.g. ‘=’) as when you *change folders* from within the program. You can also use the same abbreviatory symbols ('!', '>' and '<'), but remember to ''single quote'' them in case they have special meaning in the shell you use.

−h or −? Help message. Gives a short list of all these options and exits.

−i *file* Include a prepared file in the edit buffer before sending. This facilitates using Elm with other programs that interface with mail (like news readers, for example). There is an example of how to set up the *rn* news reading program to use Elm in *The Elm Users Guide*. The file specified is copied into the temporary file just before the signature file.

−k Keypad enable. This option lets the Elm program know that you're on an HP terminal, and it can then interpret the <PREV>, <NEXT> and <HOME>/<SHIFT>-<HOME> keys accordingly. If you are not on an HP terminal, it is recommended that you do NOT use this option. See also the **keypad** variable, described under **Boolean Variables** in section 2.

−K Keypad + softkeys enable. The Elm mailer can use the HP softkeys as an alternative form of input. If you specify this option be sure that you're on an HP terminal that can accept the standard 2622 terminal escape sequences! See also the **softkeys** variable, described under **Boolean Variables** in section 2.

−m Inhibit display of the 3-line menu when using the mailer. This, of course, gives you three more message headers per page instead. See also the **menu** variable, described under **Boolean Variables** in section 2.

−s *subject* In send-only and batch mode, this is how to indicate the subject of the resulting message. Please see the section on **Non-Interactive Uses of Elm** in *The Elm Users Guide* for more information.

−t Disable use of the *termcap/terminfo* **ti/te** capabilities. Many terminal emulators require it (not the least of which is the OpenLook *cmdtool*). Some terminal emulators clear the screen on **te** (some *xterm*s). See also the **usetite** variable, described under **Boolean Variables** in section 2.

−z This causes Elm not to start if you don't have any mail, but instead to display the message ''You have no mail.'' This emulates the behavior of programs like *Berkeley Mail*.

All the above options default to reasonable values, so there is usually no need to use them. Furthermore, the most used options are available through the *.elm/elmrc* file, described in section 2.

4. Multi-Media Capabilities of Elm

Elm optionally provides you with some Multi-Media features, which are compliant to the MIME (Multipurpose Internet Mail Extension) IETF draft.

If the support is compiled into Elm, on the receiving side Elm accesses Metamail from Nathaniel Borenstein of Bellcore. If you receive a MIME compliant message, Elm calls Metamail automatically to display the message. Metamail asks you if you want to display each part of the message and uses the display programs available at your site. This is controlled through the *mailcap* file.

On the sending side, there is a simple mechanism integrated in Elm to compose MIME compliant messages. If you have one or more key lines of the form

`[include` *file contenttype/subtype encoding*`]`

in the message body, at each of these key lines, a file is included, and becomes a part of the message. The text lines before, between and after the *include* lines go into extra message parts of type *text*.

As an example, say you want to include the file *foo.gif* into your message, which is a GIF image, and you want to use *base64* encoding, use the following line:

```
[include foo.gif image/gif base64]
```

Or you want to include a text file which contains plain ASCII:

```
[include foo.txt text/plain]
```

The *encoding* parameter is optional and the default is *7bit*.

Refer to RFC1341 for valid *contenttype/subtype* and *encoding* parameter values.

5. Special Outgoing Mail Processing

There are a few extra features that Elm offers on outgoing mail that are worthy of mention.

The first, and probably the most exciting feature,[3] is the ability to send *encrypted* mail! To do this is extremely simple: you need merely to have two key lines

```
[encode]
```
and
```
[clear]
```

in the message body.

Consider the following outgoing message:

```
Joe,
Remember that talk we had about Amy?  Well, I talked to my manager
about it and he said...
uhh...better encrypt this...the usual `key´...
[encode]
He said that Amy was having family problems and that it had been
affecting her work.
Given this, I went and talked to her, and told her I was sorry for
getting angry.  She said that she understood.
We´re friends again!!
[clear]
Exciting stuff, eh?
                                                Mike
```

While this is obviously quite readable while being typed into the editor, as soon as the message is confirmed as wanting to be sent, the Elm mailer prompts with:

3. Unfortunately, at many non-US sites, it's quite probable that you won't be able to use this feature since you won't have the *crypt()* library available due to licensing restrictions.

```
Enter encryption key: @
```

and accepts a key (a series of 8 or less characters) without echoing them to the screen. After entry, it will ask for the same key again to confirm it, then **poof** it will encrypt and send the mail.

If you have the **copy** option enabled, the program will save your copy of the message encrypted too. (This is to ensure the privacy and security of your mail archive, too.)

If the mailer doesn't ask for the encryption key, it's because you don't have the *[encode]* entered as the first 8 characters of the line. It MUST be so for this to work!!

On the other end, a person receiving this mail (they must also be using Elm to receive it, since this mailer has a unique encryption program) will be reading the message and then suddenly be prompted:

```
Enter decryption key: @
```

and will again be asked to re-enter it to confirm. The program will then on-the-fly decrypt the mail and display each line as it is decoded. The *[clear]* line signifies that the block to encrypt is done.

Note that it is not possible currently to **pipe** or **print** encrypted mail.

The other feature on outgoing mail is the ability to specify what section of the message you want to have archived (assuming **copy** is enabled) and what section you don't. This is most useful for sending out source file listings and so on.

To indicate the end of the section that should be saved in the archive, you need merely to have the key line

```
[nosave]
```

or

```
[no save]
```

appear by itself on a line. This key line is removed from the outgoing mail, and indicates the last line of the message to be saved. Other than this, the saved mail is identical to the outgoing mail.

6. Customized header lines

The mailer provides a facility for including customized header lines in the messages you send. If you have an *.elm/elmheaders* file, the mailer will include its contents immediately after the regular headers of all outbound mail. The mailer supports use of the backquote convention in this file to run commands and substitute the commands' output for the backquoted text. Here's a typical *.elm/elmheaders* file:

```
Organization: Hewlett-Packard Laboratories
Phone: (415)-555-1234
Operating-System: `uname -srv`
```

These lines will be inserted after all other header lines in the message.

7. Commands

This section discusses each command in the Elm program in more detail than above, including the prompts the user can expect upon executing the command, the meaning of different options, etc.

? Help. This command used once puts you in the *help* mode, where any key you press results in a one-line description of the key. Pressing '?' again at this point produces a summary listing each command available. Pressing '.' (period) leaves the help mode and returns you to the command level.

<space> Display the current message. <space> is useful for reading through a mail folder. When issued from the index screen, it displays the first screen of the current message. When issued while in the builtin pager, it pages through the message to the end. When issued at the end of a message (with either the builtin pager or an external pager), it displays the first screen of the next message not marked for deletion.

<return> Display the current message. <return> behaves somewhat differently from <space>. When issued while in the builtin pager, it scrolls the current message forward one line, and then when issued at the end of a message (with either the builtin pager or an external pager), it redisplays the first screen of the the *current* message. The latter is useful in case you have issued a non-pager command while in the builtin pager and want to restart the display of the current message.

! Shell. This allows you to send a command to the shell without leaving the program. Note that it is possible that the person who installed Elm on your system disabled this feature.

| Pipe. This command allows you to pipe the current message or the set of *tagged* messages through other filters as you desire. The shell used for the entire command is either the one specified in your *.elm/elmrc* file, or the default shell (see the **shell** variable under **String Variables** in section 2).

/ Pattern match. This command, at the command level, allows the user to search through all the *from* and *subject* lines of the current folder starting at the current message and continuing through the end. If the first character of the pattern is a '/', then Elm tries to match the specified pattern against *any* line in the folder. Again, this works from the current message through the end. Both searches are case insensitive.

– or <left>
Display the previous page of the message index.

+ or <right>
Display the next page of the message index.

<number><return>
Specify new current message. When you type in any digit, Elm prompts ''Set current to : *n*'', where *n* is the digit entered. Continue entering the full number and terminate with <return>. Note that changing the current message to a message not on the current page of headers results in a new page being displayed.

< Scan message for calendar entries. A rather novel feature of the Elm mailer is the ability to automatically incorporate calendar/agenda information from a mail message into the user's calendar file. This is done quite simply; any line that has the pattern

–> *calendar entry*

is automatically added to the user's **calendar** file when the '<' command is used (see the **calendar** variable under **String Variables** in section 2).

For example, let's say we had a message with the text:

```
Regardless of that meeting, here´s the seminar stuff:
–> 8/03 3:00pm: AI Seminar with Ira Goldstein of HP Labs
```

then using the '<' command would add the line:

```
8/03 3:00pm: AI Seminar with Ira Goldstein of HP Labs
```

to the user's **calendar** file.

a Alias. The alias system is a way by which more complex mail addresses can be shortened for the mail user. For example:

```
joe, bleu   =  Joe Bleu  =   joe@hpfcla.SSO.HP.COM
```

which allows mail to ''joe'' or ''bleu'' with the system expanding the address properly. Obviously, this saves having to remember complex addresses. A more detailed discussion can be found in either the section entitled *The Alias System* in this document or *The Elm Alias System Users Guide*.

b Bounce mail. This ''remails'' mail to someone else in such a way as to make the return address the original sender rather than you. The **forward** command is similar, but it makes the return address *you* rather than the original sender.

C Copy to folder. This command copies the current message or set of tagged messages to a folder. If there is anything in the folder currently the message is appended to the end, otherwise the folder is created containing only the newly copied messages. The prompt for this command is ''Copy to folder: ''. A response of <return> cancels the command and returns the user to the command prompt. The usual filename metacharacters are available, too. That is, this command expands filenames with '˜' (tilde) to your home directory and '=' to your **maildir** directory, if defined. This command also allows you to use '>' for your **receivedmail** folder, '<' for your **sentmail** folder, '.' for the last folder you saved or copied a message to and ''@alias'' for the default folder for ''alias''. If you use a shell wildcard in the file or folder name, you are given a list of all files or folders which match the wildcard. Elm uses your shell to find the names, so whatever wildcards you are used to will work. Finally, you can also enter '?' at the prompt to get detailed help.

c Change folder. Specifying this command allows the user to change the folder that is currently being read. This is intended for perusal and reply to previously archived messages. The prompt is ''Name of new folder: '' and entering <return> cancels the operation, while entering a filename causes the program to read that file as the new folder, if possible. This command expands filenames with '˜' (tilde) to your home directory and '=' to your **maildir** directory, if defined. This command also allows you to use '!' as an abbreviation for you incoming mailbox, '>' for your **receivedmail** folder, '<' for your **sentmail** folder, '.' for the last folder you saved or copied a message to and ''@alias'' for the default folder for ''alias''. If you use a shell wildcard in the file or folder name, you are given a list of all files or folders which match the wildcard. Elm uses your shell to find the names, so whatever wildcards you are used to will work. Finally, you can also enter '?' at the prompt to get detailed help.

d, u — Delete and undelete. Neither of these two commands have any prompts and indicate their action by either adding a 'D' to the current message index entry (indicating deletion pending) or removing the 'D' (indicating that the message isn't set for deletion).

<control>-D
: This command allows you to easily mark for deletion all messages that have a specific pattern. After **<control>-D** is pressed, Elm prompts for the string to match in either the *from* or *subject* lines of the messages.

<control>-U
: This is the direct opposite command to the **<control>-D** command — all messages that match the specified pattern have any mark for deletion removed by this command.

e — Edit mailbox. This allows you to modify the current mail file at a single keystroke. This is mostly useful for editing messages before saving them. Modifying headers should be done with extreme caution, as they contain routing information and other vital stuff for full functionality. This command may be disabled by whoever configured your Elm installation.

f — Forward. Allows the user to forward the current message to another user. This copies the message into the edit buffer and allows the user to add their own message too. The prompt is ''Forward to:'' and will expand an alias if entered. See also **bounce**, above.

Elm will ask you if you want to edit the message before sending it. If you answer *yes*, Elm will prepend your prefix string to each line of the message, and let you edit the result. If you do not want the prefix string on each line, answer *no*; you will have another chance to edit the message when you get to the ''send'' menu. See the **prefix** variable under **String Variables** in section 2.

g — Group reply. Identical to **reply** below, except that the response is mailed to *all recipients* of the original message except yourself. See the **alternatives** variable under **String Variables** in section 2.

h — Display the current message with all headers intact. When you display a message with other commands, certain header lines are formatted and others discarded according to the **weedlist** variable, described under **String Variables** in section 2.

i — Return to the index screen, when issued in the builtin pager or at the end of a message with either the builtin pager or an external pager.

j or <down>, k or <up>
: These four keys work similarly to what they would do in *vi* or any of the other (precious few) screen oriented programs. The **j** and **<down>** keys move the current message pointer down to the next message skipping over any marked deleted (going to the next page if necessary) and the **k** and **<up>** keys move the current message pointer back to the previous message skipping over any marked deleted (also changing pages if necessary).

J, K — These two keys work similarly to their lower case counterparts, except that they don't skip over deleted messages.

l — Limit. This feature allows you to specify a subset of the existing messages to be dealt with. For example, let's say we had a folder with four hundred messages in it, with only four or five different subjects. We could then limit what we're dealing with by using the **limit** command. Pressing **l** would result in the prompt:

```
Criteria:
```

to which we could answer ''subject *string*'', ''from *string*'' or ''to *string*''. In our example, we could use ''subject programming'' as a criterion for selection. Once we've limited our selections, the screen is rewritten with just the selected messages and the top line changes to have a message like:

```
Folder is "=elm" with 92 shown out of 124 [Elm 2.4]
```

We can further limit selections by using the **limit** option repeatedly to enter further criteria.

To clear all the criteria and get back to the ''regular'' display, simply enter ''all'' as the limiting criteria. It should be noted that the selection based on ''to'' isn't fully implemented for this version, so it is recommended that users stay with ''subject'' and ''from'' as the basis for their criteria.

m Mail. Send mail to a specified user. The prompt associated with this command is ''Send mail to: ''. Entering an alias name results in the full address being rewritten in parenthesis immediately. This prompt is followed by ''Subject: '' which allows the user to title their note. The final prompt is ''Copies to: '', which allows other people specified to receive ''carbon copies'' of the message, but see the **askcc** variable under **Boolean Variables** in section 2. Upon entering all three items the editor is invoked and the message can be composed.

n Next message that is not marked for deletion. Useful for displaying successive messages in a folder. When issued from the index screen, it displays the current message, and when issued while in the builtin pager or at the end of a message (with either the builtin pager or an external pager), it displays the first screen of the next message not marked for deletion.

o Options. This full-screen display allows you to alter the settings of a number of parameters, including the current sorting method, the method of printing files, the calendar file, the save file, and so on. It's self-documenting (where have you heard *that* before?) so isn't explained in too much detail here. See the **configoptions** variable under **String Variables** in section 2.

p Print. This allows you to print out the current message or the tagged messages to a previously defined printer. See the **print** variable under **String Variables** in section 2.

q Quit. If you in the pager, you are returned to the index screen. If you are at the index screen, Elm quits altogether. However, if you have the **ask** variable set ON, Elm first prompts you for the disposition of the messages in the current folder. If any messages are marked for deletion, it asks if you want them deleted. If the current folder is your incoming mailbox, you are also asked if read messages should be stored in your **receivedmail** folder, and if unread messages should be kept in the incoming mailbox. The default answers to these questions are set by the *.elm/elmrc* variables **alwaysdelete**, **alwaysstore**, and **alwayskeep** (see **Boolean Variables** in section 2). However, if you elect to not store your read messages (i.e. keep them) it is presumed you want to keep your unread messages, too.

Q Quick quit. This behaves similar to the **quit** command except that you are never prompted for answers to the message disposition questions. Elm disposes of messages according to the values you have set for **alwaysdelete**, **alwaysstore**, and **alwayskeep** in your *.elm/elmrc* file (see **Boolean Variables** in section 2).

r Reply. Reply to the sender of the current message. If the **autocopy** variable is set to OFF in your *.elm/elmrc* file, Elm prompts ‘‘Copy message? (y/n)’’, to which you can specify whether or not a copy of the source message is to be copied into the edit buffer. If copied in, all lines from the message are prepended with the **prefix** character sequence specified in your *.elm/elmrc* file (see **String Variables** in section 2).

s Save to folder. This command is like the **copy** command, except that the saved messages are marked for deletion and, if you are saving just the current message, the current message pointer is incremented afterwards (see the **resolve** variable under **Boolean Variables** in section 2). This command expands folder names with ‘~’ (tilde) to your home directory and ‘=’ to your **maildir** directory, if defined. This command also allows you to use ‘>’ for your **receivedmail** folder, ‘<’ for your **sentmail** folder (see **String Variables** in section 2), ‘.’ (period) for the last folder you saved or copied a message to and ‘‘@alias’’ for the default folder for ‘‘alias’’.

t Tag. Tag the current message for a later operation.[4]

T Tag and move to next undeleted message. This command is like the ‘Tag’ command but also increments the current message pointer to the next undeleted message.

<control>-T
Tag all messages containing the specified pattern. Since *tagging* messages can occur on screens other than the one being viewed, Elm first checks to see if any messages are currently *tagged* and ask you if you’d like to remove those tags. After that, it will, similar to the **<control>-D** command, prompt for a pattern to match and then mark all messages that contain the (case insensitive) pattern in either the *from* or *subject* lines.

x Exit. This leaves Elm and discards any changes to the mailbox. If changes are pending (such as messages marked for deletion) you are asked to confirm discarding the changes. If confirmed, no messages are deleted and the status of all messages is unchanged. That is, any messages that were new will remain new instead of being noted as old, and any messages that were read for the first time will be again noted as unread.

X Exit immediately. This leaves Elm in the quickest possible manner without even prompting about discarding the changes to the mailbox. No messages are deleted and the status of all messages is unchanged. That is, any messages that were new will remain new instead of being noted as old, and any messages that were read for the first time will be again noted as unread.

When you are about to send a message with the **forward**, **mail**, or **reply** commands (see above), a small menu of the following options appears:

c Specify the folder for saving a copy of the message. This allows you to override the **copy**, **forcename** and **savename** variables from your *.elm/elmrc* file (see **Boolean Variables** in section 2). It prompts you for the name of the folder where a copy of the outgoing message is to be saved. The default displayed is taken from those three *.elm/elmrc* options and can be changed. This command also allows you to use ‘>’ for your **receivedmail** folder and ‘<’ for your **sentmail** folder (see **String Variables** in section 2), and ‘=?’ to mean ‘‘conditionally save by name’’ and ‘=’ to mean ‘‘unconditionally save by name’’. Since you could next enter the **edit headers** command and change the recipients of your message, the name of the folder under the two ‘‘save by name’’ options is not

4. Currently only **copy**, **pipe**, **print**, and **save** support this.

established until you enter the **send** command. If you use a shell wildcard in the file or folder name, you are given a list of all files or folders which match the wildcard. Elm uses your shell to find the names, so whatever wildcards you are used to will work. You can also enter ‘?’ at the prompt to get help about saving.

e Edit message (or form). Entering this command allows you to edit the text of your message or form.

f Forget. This gets you out of sending a message you started. If you are in send-only mode, the message is saved to the file *Canceled.mail* in your home directory. Otherwise it can be restored at the next **forward**, **mail**, or **reply** command during the current session of Elm After issuing one of those commands you will be prompted with ‘‘Recall last kept message?’’

h Edit headers. This puts you into the *header editing mode*, whereby you can edit any of the various headers of your message. Like the options screen, it’s self-documenting, so it isn’t explained in too much detail here.

i Run *ispell* (or some other configured spelling correction program). The outgoing message is run through an interactive spelling correction program if one is available. The default spelling program is the GNU *ispell* program unless changed by the person who installed Elm on your system.

m Make form. This converts the message you have edited into a form. See the **forms** variable under **Boolean Variables** in section 2 and *The Elm Forms Mode Guide* for more details.

s Send. This sends the message as is without any further ado.

8. Using Elm with ‘‘editor = none’’

The Elm program also supports a builtin editor for simple message composition that is very (very) similar to the simple line editor available from the *Berkeley Mail* system.

To access it, you need merely to specify ‘‘**editor=none**’’ in your *.elm/elmrc* file. With that, any messages to be composed that don’t already have text in the buffer (e.g. no reply with the text included, etc.), will use this editor.

From the builtin editor, the following options are available for use. Each command here is prefixed with a ‘~’ (tilde). You can specify a different ‘‘escape’’ character in your *.elm/elmrc* file, if you desire (see the **escape** variable under **String Variables** in section 2).

~? Print a brief help menu.

~b Change the Blind-Carbon-Copy list.

~c Change the Carbon-Copy list.

~e Invoke the **easyeditor** editor on the message, if possible (see the **easyeditor** variable under **String Variables** in section 2).

~f Add the specified message or current message.

~h Change all the available headers (To, Cc, Bcc, and Subject).

~m Same as **~f**, but with the current **prefix** (see the **prefix** variable under **String Variables** in section 2).

~o Invoke a user specified editor on the message.

~p Print out, on the screen, the message as typed in so far.

~r Include (read in) the contents of the specified file.

~s Change the Subject line.

~t Change the To list.

~v Invoke the *vi* visual editor on the message.

~< Execute the specified UNIX command, entering the output of the command into the editor buffer upon completion. For example, ''~< who'' includes the output of the *who* command in your message.

~! Execute a UNIX command if one is given (as in ''~!ls'') or give the user a shell, either from the **shell** variable setting in the *.elm/elmrc* file or the default (see the **shell** variable under **String Variables** in section 2).

~~ Add a line prefixed by a single '~' character.

A useful note is that the **~f** and **~m** commands invoke the *readmsg* command, so you can pass parameters along too. For example, if we wanted to include a message from Joe, without any headers, but with each line prefixed, we could use:

```
~m -n Joe
```

to accomplish the task.

To learn more about how they work, try 'em!

9. The Alias System

As mentioned previously, there exists in the Elm system a set of aliases that associate an arbitrary word (such as a persons name) to a complex address or group. The advantages are readily apparent; rather than remembering an address of the form:

```
host1!host2! ... !hostN!user
```

the user merely has to remember a single word.

Two alias tables are available for a each user within Elm, namely the system alias file and the user's alias file. The system alias file is created and maintained (by the system administrator) by editing the file name defined for *SYSTEM_ALIASES* in the *sysdefs.h* file (see *The Elm Configuration Guide*) and as described in the documentation with the *newalias* command, then running the *newalias* program.

An individual user can also have an alias file which works in conjunction with the system aliases. To do this, one merely needs to enter the alias menu system and create aliases with the **a** (**alias current message**) or **n** (**make new alias**) commands. Alternatively, the user can peruse the documentation for the *newalias* command and create a file as indicated therein. After executing the program, the aliases are available for use from within Elm.

Please refer to *The Elm Alias Users Guide* for complete details.

Within Elm, however, the alias system acts as an entirely different program, with its own display, own commands, and own mini-menu. The aliases are presented in a list similar to the index screen with the following menu:

```
            Alias commands:  ?=help, <n>=set current to n, /=search pattern
      a)lias current message, c)hange, d)elete, e)dit aliases.text, f)ully expand,
         l)imit display, m)ail, n)ew alias, r)eturn, t)ag, u)ndelete, or e(x)it

    Alias: @
```

The commands are:

? Help. This command used once puts you in the *help* mode, where any key you press will result in a one-line description of the key. Pressing '?' again at this point produces a summary listing each command available. Pressing '.' (period) leaves the help mode and returns you to the alias command prompt.

<space> or <return> or v
Display the current alias address. The alias address is displayed below the alias menu. This command allows you to verify the address for a person or the contents of a group alias.

$ Resynchronize the alias text file (*$HOME/.elm/aliases.text*) and alias database by rebuilding the database from the text file by running *newalias*. Aliases marked for deletion are removed, tagged aliases are untagged, and new and changed aliases are recognized. The alias screen is updated to reflect these changes.

/ Pattern match. This command allows the user to search through all the *alias* and *username* entries in the alias list starting at the current alias and continuing through the end. If the first character of the pattern is a '/', then Elm also includes the *comment* and the fully expanded *address* fields in the search. The search is case insensitive. This allows the user to find a specific alias in the situation where there are a large number of aliases.

a Alias current message. This allows the user to create an alias that has the return address of the current message as the address field of the alias. It prompts for a unique alias name. If the alias name is not unique, you will be asked if you wish to replace the existing alias. For further information, please see *The Elm Alias System Users Guide*.

c Change current alias. This will prompt for changes to the current names and address. If other aliases are tagged you will be asked if you want to create a group alias from the tagged aliases. The original alias is replaced with the new information in your individual alias file (*$HOME/.elm/aliases.text*) and then added to the database (at the next alias resync). Aliases that have been changed are marked with an 'N' (for new) until the database is updated.

d, u Delete or undelete an alias. This allows the user to mark an alias for deletion in the same fashion as on the index screen. The deletions are not actually made until the user returns to the main menu with the **r**, **q**, or **i** commands or resyncs the display with the **$** command. Deletions on system aliases are not allowed. These commands (plus the **<control>-D** and **<control>-U** versions) behave identically to their index screen counterparts (see section 7, **Commands**).

e Edit the *.elm/aliases.text* file. The user alias file is edited using the editor defined in the **editor** variable in your *.elm/elmrc* file (see **String Variables** in section 2). *newalias* is run after the edit.

f Display fully expanded alias. The currently selected alias is fully expanded and displayed to the user. This is most useful when working with group aliases.

l Limit the display. You can limit the display by alias type (person/group or user/system) or by search pattern on name or alias. Otherwise, this works exactly like the limit command on the index screen.

m Send mail to the current alias. The user is prompted to compose a new mail message to be sent to the person or group specified by the selected alias. If aliases are tagged the message is mailed to the person(s) and/or group(s) specified by the tagged aliases. Tags are cleared after mailing the message.

n Make a new user alias. This prompts for a unique alias name and then for an address. If the alias name is not unique, you are asked if you wish to replace the existing alias. If aliases are tagged you are asked if you want to create a group alias from the tagged aliases. The information provided is added to your individual alias file (*$HOME/.elm/aliases.text*) and then added to the database at the next alias resync.

r or q or i
Return. Return to the index screen of the Elm program. Any pending deletions are processed and newalias is run to update the database. New additions are handled at this time as well.

R or Q or I
Quick return. This behaves like the ‘r’ command except that you are never prompted for answers to alias disposition questions. Elm disposes of aliases according to the value set for the **alwaysdelete** variable in your *.elm/elmrc* file (see **Boolean Variables** in section 2).

t Tag. Tag the current alias for a later operation.[5] This command (plus the **<control>-T** version) behaves identically to its index screen counterpart (see section 7, **Commands**).

x Exit alias menu. Exits the alias menu without processing any deletions. Aliases marked for deletion are unmarked and *newalias* is not run, even if alias additions have been made.

Additionally, the movement keys (‘j’, ‘k’, ‘+’, ‘–’, etc.) work in the same fashion as on the index screen (see section 7, **Commands**).

10. Elm and Signals

Elm can handle several standard UNIX *signals* to do some special processing. Signals are interrupt messages sent from one program to another. No detailed messages are sent, but a properly configured program (such as Elm) can watch for and handle these signals.

5. Currently only **mail**, **change**, and *n3w alias* support this.

In particular, Elm watches for the following signals and takes these actions:

ALRM This is the alarm clock signal or time warning. Elm uses this to wake itself up periodically and check for new mail.

HUP This is the hangup notice. It means that the terminal/modem/whatever which you have been using with Elm has become detached from the system where Elm was running. When Elm gets this signal, it aborts all the pending operations and exits, leaving your mailbox unchanged.

USR1 This is the first user-defined signal. When Elm gets this signal, it receives any pending mail, performs all the pending operations (deletes), and exits leaving all unread mail marked as new. This is the same as giving both the **$** and **X** commands.

USR2 This is the second user-defined signal. When Elm gets this signal, it receives any pending mail, performs all the pending operations (deletes), and exits, leaving all unread mail marked as old. This is the same as giving both the **$** and **Q** commands.

You would only use these signals yourself under the most unusual circumstances. For example, suppose you were using **Elm** to read mail on *host_1*. You have many messages, most of which have been read and filed (and therefore deleted), or simply deleted. You have not yet resynchronized your mailbox (**$** command). Now you go to lunch. On your return, you're stopped at the door and told to take care of an emergency. You go to another part of the building, and want to read your mail to see what the emergency is — but you can't, because Elm is still running at your desk.

What you really want is one of the scenarios given in the description of *HUP*, *USR1* or *USR2*. Use your local *ps* command to find out what the *process number* of your Elm session is. Then give the command

`kill` −*XXX process_number*

where *XXX* is either ‘‘HUP’’, ‘‘USR1’’ or ‘‘USR2’’ and *process_number* is the process number for your remote Elm session. Your remote session will terminate with the actions noted above.

11. Expert Mail Users and Debugging the Mailer

There are some additional facilities available in the Elm mailer for those people who are knowledgeable about mail protocols, or trying to debug/track down a problem.

The **h** (**display with headers**) command at the command prompt displays the current message ignoring the current setting of the **weed** variable (see **Boolean Variables** in section 2). This is most useful for answering questions of the form ‘‘I wonder what this guy put in his header?’’ and such. This command does not show up on the mini-menu because it is somewhat esoteric, but it does appear on the help screen.

The @ command at the command prompt outputs a screen of debugging information, including the number of lines and offsets of each of the messages in the current mailbox.

The **#** command at the command prompt displays the entire stored ‘‘record structure’’ for the current message.

The **%** command displays the full computed return address of the current message.

Starting up Elm with the **−d** (debug) option (see section 3, **Command Line Options**) creates a file called *ELM:debug.info* in your home directory which contains a wealth of useful information (to me, at least!) to aid in tracking down what errors are occurring and why.

If there are any problems with Elm, please try to recreate the error with the debug option enabled and set to the highest level (11) before sending defect reports my way.

One final note: all error names reported by the program are documented in the *AT&T System V Interface Definition Reference Manual* in **errno**(2).