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To go to the next page, click on this button at the bottom of the document window, or press

sparatext[Section] 1

Command-7.

Welcome to
FrameMaker®

FrameMaker is a complete solution for creating publication-quality documents of any type. FrameMaker seamlessly combines advanced word processing, page layout, and graphics in a single, easy to learn and use package.

Word processing

g
•

• Paragraph and character formatting

• Spell checking and hyphenation in 12 languages

• Search and replace

•

• Automatic change bars

• Optional filters for

importing standard text and graphic formats

•

• Automatic save

•

• File locking

•

• Conditional text

Page layout

•

• Typographic controls, such as character

Are you tired of hidden commands? With FrameMaker, what you need is right at the top.

Choosing a command

Most commands are in a menu. To choose a command, follow these steps:

- 1. Click on** Page in the main FrameMaker menu and hold down the mouse button.
- 2. Move the pointer to the right and down until** Go To is highlighted.
- 3. Release the mouse button.**
The Go To dialog panel appears.
- 4. To cancel the dialog**

panel, click the button labeled Cancel.

Selecting text

To indicate what text you want to change, select it as follows.

Point on this sentence and click the left mouse button (left-click). The insertion point () appears. Point on the end of this sentence, hold down Shift, and click. Text is highlighted from the insertion point to the end of the sentence.

To deselect the text, left-click anywhere in the document window.

Typing text

To type text:

1. Point to the right of
Demo done by: in the
next column and left-
click. The insertion

point appears after
the colon.

2. Type your name.

Getting help

Click on Info in the main FrameMaker menu. Then
choose Help from the Info menu for on-line Help
(created with the FrameMaker hypertext feature).

To continue

To go to the next page, click the Next Page
button or press Command-7.

Demo done by:

To put the insertion point in text; to select and
deselect text.

The basics

Right mouse button is configurable for left handers.

DATE: at

Are you spending too much time creating documents?
Use a FrameMaker template to create professionally
formatted documents as fast as you can type.

In this exercise, all you do is type and press the
Return key. The document template provides
the format.

1. Point in the blank area under TO: and click.

2. Type a name and press Return.

FrameMaker supplies the next heading.

3. Type a name beside FROM: and press Return.

4. Type a few words beside RE: and press Return.

**FrameMaker supplies the next heading and a
rule.**

5. Type a name beside CC: and press Return.

6. Type a few words.

Now that you're in the body of the memo, each
paragraph uses the same format until you
choose a different one. To learn how to change
the format of a paragraph, go to the next page
(press Command-7).

TO:

A document in minutes

Make your paragraphs look their best. Try one of the many formats provided with FrameMaker, or create your own.

To change a paragraph format, choose one from the ¶ (Paragraph Format) Catalog, as follows:

- 1. Click the Paragraph button on the left side of the document window.**
The ¶ Catalog appears.
- 2. Click the top line of text in the example to get an insertion point.**
- 3. In the ¶ Catalog, click Heading.** FrameMaker reformats the paragraph with the insertion point.
- 4. To undo the change, press Command-z, or from the FrameMaker menu click Edit, then click Undo.**
You can undo most commands.
- 5. To close the ¶ Catalog, click its close button.**

6. Go to the next page.

Report from the National Endowment for the Arts

The National Endowment for the Arts is pleased to present the attached report on arts education. In this report we:

1. Identify the arts that should be taught in school.

2. Show why the present state of arts education is unsatisfactory and suggest avenues for its improvement.
3. Explain the present state of arts curriculum, testing, evaluation, and research.
4. Examine the role of the National Endowment.

In Summary

The following excerpts are from the Introduction. I have included them here because our group feels they summarize our findings elegantly and concisely.

We need to help our children move toward civilization. As we stand on the threshold of the 21st century, we are concerned, and rightly so, with the quality of the education of young Americans and whether it is preparing them for the challenges of the future.

Many of the challenges will, obviously, be scientific and technological—and our schools must give our children the tools to deal with them. Less obvious, many of the challenges will be cultural.

Craig Stanton

Chairman

National Endowment for the Arts

Stored paragraph formats

Make your text sparkle with font sizes from 4 to 400 points and your choice of styles.

To change the format of selected text, give it a character format, as follows:

- 1. Click the Character button on the left side of the document window.**

The f Catalog appears.

FrameMaker

2. Click The Arts Endowment to put the insertion point in it.

3. To select the line, press the key labeled Esc and then type h and l (lowercase L).

4. In the f Catalog, click Big Title.

The font size is now 44 points.

5. Select a word in the main text of the report. To do that, double-click the word (point over the word and rapidly click the mouse button twice).

6. In the f Catalog, click Emphasis.

FrameMaker changes the character format of the selected text.

7. To close the f Catalog, click its close button.

THE ARTS ENDOWMENT

*A Report
Prepared by the Chairman
of the National Endowment for the Arts
December 1982*

LEGISLATIVE BACKGROUND

Difficult as it is to pinpoint the beginning of new eras, it is clear that after World War II a new and closer relationship developed between the federal government and the arts.

President Eisenhower was the first of several presidents to take significant steps to draw the two together. Announcing in a State of the Union address that "the Federal government should give official recognition to the importance of the arts and other cultural activities," Eisenhower in 1958 signed a law creating a national cultural center. Later named the John F. Kennedy Center of the Performing Arts, it opened its three performance halls and exhibit areas in Washington D.C. in 1971.

President John F. Kennedy, responding to a report called The Arts and the National Government, established the Advisory Council on the Arts by the executive order in 1963. Kennedy was assassinated before he had appointed the members of the council.

Words that stand out

FrameMaker takes the effort out of creating tables. There are many features to help you work with tables easily.

Adding text is as easy as typing in a cell.

1. In the table to the right, click in the cell with the word Resistor and type some text.

The text wraps in the cell and the row expands.

2. To make new rows, hold down Control and

press Return. Make enough rows to continue the table on the next column.

To change the table's format:

- 1. Click in the cell with the word Resistor.**
- 2. Choose** Table Format from the Table menu.
- 3. In the Table Format window, point on the scroll list (Table Catalog) in the top-left corner and click on Format B.**
- 4. Click to set the check buttons as follows:**
- 5. Hold down Shift and click Apply.**

To close the Table Format window, click its close box.

Electronic Symbols

The following table is a list of electronic symbols and their definitions.

Table 1. Common Symbols

Symbol	Definition
	Resistor
	Capacitor
	Diode
	Coil
	Ground

Number footnotes the way you want them: numeric, Roman, symbol, or combine number formats.

When you rearrange text containing a footnote, FrameMaker rennumbers the footnotes.

To add a footnote:

1. Click in the paragraph indicated by the arrow.

2. Choose Footnote from the Special menu.

A new footnote number appears at the bottom of the page.

3. Type: This is a footnote.

4. To move the insertion point back

to the body paragraph, use the keyboard shortcut for the Footnote command: press

Command-N. (Be sure to hold down the Shift key when you press N.)

5. To select the entire paragraph, press Esc and then type h and p or triple-click in the paragraph.

6. From the Edit menu, choose Cut or use Command-x.

7. Put the insertion point at the beginning of the first body paragraph.

8. From the Edit menu, choose Paste or use Command-v.

FrameMaker pastes
the paragraph in the
column and

renumbers the
footnotes.

1. Ecological damage

Ecologists will have to fill gaps both on the applied and basic research level to meet the needs society has asked them to satisfy.

Michigan Environmental Review Board

The State of Michigan in an attempt to perform such an integration has several avenues to resolve environmental conflicts: legislated standards, the Environmental Protection Act, and the Michigan Environmental Review Board¹.

Cooper uses his experience as Chairman of this Review Board in providing his views on environmental assessment. This Board's recommendations, which arise from review of impact statements, directly enter the administrative structure via the Governor's office.

¹ - Present address: Council on Environmental Quality

Methodology

Burns emphasizes the necessity of using sublethal and chronic toxicity data in making impact assessments. To some degree this is due to technological improvements making acute toxicity problems less of a consideration. Most importantly however is the fact that the science has passed the point where we must rely on acute lethality data in making predictions.

Sublethal and Chronic Toxicity

The sublethal toxicity levels will assure that the the several substances do not exceed a permissible concentration: These gross effects studies provide only crude evaluations.

This impact may, however, be of no significance at the pollution or community level which is where the assessment emphasis should be placed. He further provides some examples of studies where sublethal effects have had a large impact at the "population" levels.

Footnotes made easy

FrameMaker doesn't just check your spelling. It

FrameMaker

questions repeated words, extra spaces, unusual punctuation, irregular hyphenation, and much more.

To spell check a page:

- 1. Put the insertion point in the sample text.**
2. From the Edit menu, choose Spelling Checker.
- 3. Move the Spelling Checker window to the lower-left corner of the screen. Point on the title bar, hold down the mouse button, and drag the window.**
4. In the Spelling Checker window, click Options.
- 5. Notice the many options available in the Spelling Checker Options dialog panel. Click OK to close it.**
6. In the Spelling Checker window, click the button beside Current Page.
- 7. In the Spelling Checker window, click Start Checking.**
8. There are five errors in the sample. Each time FrameMaker finds an error, click Correct Word.
9. To close the Spelling Checker window, click its close box.

More than a spelling

FrameMaker can number paragraphs, such as section titles, lists, equations, figures, tables, and footnotes. If you rearrange numbered paragraphs, FrameMaker rennumbers them.

1. Put the insertion point in the paragraph indicated by an arrow. Press the Esc key and then type h and p.

2. From the Edit menu, choose Cut.

3. Put the insertion point at the beginning of the paragraph numbered 1-1.1a.

The insertion point appears after the number.

4. From the Edit menu, choose Paste.

With paragraph numbering like this, imagine how quickly you can create outline-like numbering.

1. Put the insertion point at the end of the heading 1-1 Introduction.

2. Press Return four times.

FrameMaker numbers each new paragraph.

Text that no longer fits on the page flows to the next page.

Paragraph numbering

When was that document last changed? FrameMaker knows. Use variables to insert the current date, modification date, document name, page number, or paragraph text. You can even create your own variables.

In the sample document, the header and footer contain variables. Notice the current date in the header and the heading Disclaimer in the footer.

- 1. Select the** heading 1-4 Disclaimer by pointing on it and double-clicking. (To double-click a mouse button, press it twice quickly.)
- 2. Press** Delete.

3. Type FrameMaker.

4. To update the footer with the text you typed, press Control-I (lower case L) to redisplay the page.

Automatic text

See Figure 8 in Chapter 3.2, "Circuits." Do you avoid cross-references like this because they're

too hard to maintain? FrameMaker does it for you. And you can even cross-reference paragraph text, paragraph numbers, and page numbers across documents.

The text in italics beside the 1-5 heading is a cross-reference to a heading you changed on the previous page. To update the cross-reference:

- 1. In the section 1-5 heading, point on the cross-reference (it's in italics).**
- 2. Double-click the mouse.*
- 3. In the Cross-Reference dialog panel, click Update.**
- 4. In the Update Cross-References dialog panel, click OK.**

FrameMaker updates the cross-reference.

- 5. Click Done** in the Cross-Reference dialog panel.

Notice also that your name is now a part of the heading for section 1-5.1. The heading includes a cross reference to page 3, where you typed your name.

- 6. Press Control-I** to update the cross-reference in the sample document's footer.

Cross-references

Loading the *DynaLoadster*

Your *DynaLoadster* is designed to carry a payload anywhere you need to go. With 4-wheel drive, extra high clearance, and the new DynaPower 6-cylinder engine, you can take your load past any obstacle.

Weight Specifications

Maximum Payload 363 kg (800 lbs.)

Curb Weight lbs.)

Max Total Weight lbs.)

Cover Your Load It is against the law in many states to carry an uncovered load. Be sure to cover your load and secure it with *DynaLoadster* Tiedowns (optional).

You might have separate documents for similar products, such as the owner's manual on the right. You can keep both manuals in one conditional document.

To view the owner's manual for a pickup truck

1. **Choose** Conditional Text from the Special menu.

The Conditional Text window appears. Move it to the bottom of the screen.

2. **Click the** Show/Hide button.

The Show/Hide dialog panel appears.

3. **Click on** Van in the Show scroll list. Then click the arrow button that points to the right.

4. **Click on** Pickup Truck in the Hide scroll list. Then click the arrow button that points to the left.

Pickup Truck is now in the Show list and Van is in the Hide list.

5. **Click** OK.

Now you see the variation for the pickup truck. Notice the changes that appear in the title,

body, and table.

To close the Conditional Text window, click its close box.

Conditional text

Use FrameMaker to anchor a graphic to text or to a page.

To see graphics flow with the text:

- 1. Put the insertion point in the first line of the first body paragraph.**
- 2. Press** Return **four times.**
Notice the graphics moving with the text, and the text filling the left column when the graphic moves to the right column.

Those graphics are anchored to the text. The rotated graphic in the left margin doesn't move because it isn't anchored to the text.

To copy a graphic into the text:

- 1. Point on the rotated text in the left margin and click. Handles appear around the object.**

2. **From the** Edit menu, choose Copy.
3. **Click to put the insertion point near the top of the right column.**
4. **From the** Edit menu, choose Paste.
FrameMaker anchors the copied graphic in the text and turns on the borders. The border around each graphic is an anchored frame.

To turn off borders:

1. **From the** View menu, choose Borders.

Evaluation of Stress Intensity Factors

One of the strongest features of the NASCRAC code is the wide range of stress intensity factor solutions it contains. The code utilizes both closed-form K -solutions and influence functions.

Through the use of influence functions, a very wide range of crack configurations and stress systems can be analyzed. Table I summarizes the stress intensity factor solutions included in the code and indicates the configurations for which influence functions and J -integral solutions are also available.

In the event that the crack configuration to be analyzed cannot be idealized into one of the current existing solutions within the NASCRAC code, the code also has the capability to generate a new influence function. The new influence function can then easily be incorporated into the user's version of the code, thereby expanding the library of available solutions.

The value of K due to a stress $\sigma(x)$ on the crack surface is then given by an equation

The influence function results are made more convenient for use by curve-fitting the point-wise results to an assumed functional form. The NASCRAC code incorporates an assumed functional form suitable for surface-connected cracks or

buried cracks with symmetry with respect to the crack midpoint.

The procedure for automated generation of planar influence functions has been incorporated into the NASCRAC code and was demonstrated in Reference 9 by application to two problems: an edge-cracked strip and an edge-cracked disk. Alternative influence functions exist for the edge-cracked strip [14], as well as stress intensity factor solutions for uniform and linearly varying tension [6]. Stress intensity factor solutions exist for the edge-cracked disk only under uniform and parabolic tension [6]. As reported in Reference 9, influence functions were generated for both geometries using the Williams-series expansion truncated at 50 terms. The influence function for the edge-cracked strip was compared directly to the influence function of Orange [14] and excellent agreement was observed.

Graphics that flow with text

FrameMaker makes it easy to experiment with page design. You can resize, split, and connect columns of text. You can combine multiple columns of different widths on the same page.

To resize a column:

- 1. Point in the left column, hold down the Control key, and click.**
- 2. Point on the lower-middle handle (), hold down the mouse button, and drag the handle down the page.**

Text fills the column.

To split one column into two:

- 1. Click in the right column.**
 - 2. From the Page menu, choose Column Connections.**
 - 3. In the Column Connections dialog panel, click the button beside Split into Columns. Click OK.**
- FrameMaker splits the column.**

The two changes to column layout you made can be done in one step by applying a different layout from a master page. This enables you to quickly see what a document would look like with different column layouts. You can also copy page designs between documents.

Introduction

The increasing need for high reliability in a wide variety of lightweight aerospace structures has led to increasing requirements for techniques for analysis of crack behavior. In conjunction with this, the large number of components requiring analysis has led to a need for easily-implemented standard procedures employable by a number of users.

A user-oriented comprehensive fracture mechanics code employing state-of-the-art procedures for analysis of crack growth would provide the necessary tool.

The purpose of this paper is to describe such a tool, which has been developed by Failure Analysis Associates (FaAA) for NASA-Marshall Space Flight Center. The code is called NASCRAC; an acronym for NASA CRack Analysis Code.

Portions of the code have been described in an earlier paper, and this paper will concentrate on aspects of the code not emphasized earlier. The primary function of the NASCRAC code is analysis of fatigue crack growth under linearly elastic conditions. In order for this to be accomplished for a wide range of geometries and stress systems, many capabilities are necessary.

One example is the use of influence functions for evaluation of stress intensity factors for complex stress distributions. The code concentrates on fatigue crack growth under Mode I (opening mode) loading. This is the loading mode that drives fatigue cracks, and growing fatigue cracks orient themselves so as to grow under Mode I conditions [2,3].

In addition to provisions for analysis of fatigue crack growth, many other features useful for analysis of cracks are included in the code. Figure 1 provides a block diagram of types of analysis that the code is capable of performing, with the areas receiving special emphasis in this paper indicated by an asterisk.

NASCRACT:

A Fracture Mechanics Analysis Code

Custom page layouts

Importing graphics is easy. Use the same command to import Sun rasterfile, MacPaint, xwd, pcx, and EPSI graphics. Also, you can scale, crop, rotate, and annotate imported graphics.

To import an image on this page:

1. Point on the border of the rectangle to the right and click to select it.

2. Choose Import from the File menu.

The Import dialog panel appears.

3. In the box titled Name, type:

imports / import.tiff

4. Click OK.

A dialog panel appears.

5. Click the button beside 72 dpi, and click OK.

FrameMaker imports the image.

You can use a frame to crop an imported image:

1. Select the border of the rectangle.

2. Point on a handle (◻), hold down the mouse button, and drag the handle to make the rectangle smaller. Release the mouse button.

Notice how the frame's border crops the image.

Imported graphics

With FrameMaker you can draw bezier curves, rotate text, design arrowheads, flip, align, scale, and much more.

To flip a picture:

1. Click the drawing of the ship to select it.

2. From the Graphics menu, choose Flip L/R.

To draw an object:

1. Open the Tools window.

Click the Tools window button on the left border of the document window.

- 2. In the Tools window, click the Arc button.**
- 3. Click the thickest line width and the line ending with an arrow, as circled below.**
- 4. Point in the blank area to the right and hold down the left mouse button.**
- 5. Drag the mouse across the area and release the mouse button.**

Graphics with pizzazz

FrameMaker takes full advantage of NeXTStep. You can import sound into a document to play back at any time.

Also, FrameMaker displays not just TIFF and EPS files, but raw PostScript code as well.

To hear a sound file, double-click the icon below.

Displaying PostScript:

- 1. In the text to the right, select the phrase Your Name.**
- 2. With the text selected, type your first name.**

3. Choose Flow from the Format menu.

The Flow Properties dialog panel appears.

4. Click the PostScript Code button to turn it on.

5. Click OK.

FrameMaker on the NeXT automatically creates an image from the raw PostScript file.

```
/NAME {
    (Your Name)
} def
/newline {currentpoint 11 sub exch pop 0 exch moveto } def
/nllfNec { currentpoint pop 333 gt {newline} if } def
/done? { currentpoint exch pop 0 lt } def
/flippage { /strg exch def
    ( ) {pop pop nllfNec} strg kshow done? {exit} if } loop } def
/center { 333 44 add NAME stringwidth pop sub 2 div 69 translate }
def
/printit {0 0 moveto NAME show} def
/Times-Bold findfont 11 scalefont setfont
0 198 moveto
.5 setgray (FrameMaker ) flippage
/Times-Roman findfont 60 scalefont setfont
center
.98 -.02 0 {setgray printit -1 .5 translate} for
1 setgray printit
showpage
```

Special effects

You can combine several FrameMaker documents into a book, and generate tables of contents and indexes.

Managing books is easy: you can open, save, or print

all documents in a book with one command.

You'll generate a table of contents that includes the heading at the top of each page (such as *Books*, at the top-left of this page).

Add some text to the heading, *Books*, as follows:

- 1. Click to the right of *Books*, above this column.**
2. Type some text. (It will appear in the table of contents you create.)

To generate a table of contents:

- 1. From the File menu, choose Generate.**
- 2. In the dialog panel that appears, click Generate.**
- 3. In the next dialog panel that appears, click OK.**

4. FrameMaker generates and opens a table of contents.

Notice that the text you typed appears in the table of contents.

To close the table of contents:

- 1. Click on the table of contents and choose**
-

Close From the File menu.

2. In the dialog panel that appears, click No.

Index

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Books

FrameMaker Demonstration

FrameMath is your integrated solution to typesetting equations. With it you can type, edit, format, evaluate, and solve equations.

Everything you need to create equations is available in the Equations window. To open the Equations window:

- 1. Click the equations button on the left side of the document window.**
- 2. To see a different page in the Equations window, click a button at the bottom of the window. The buttons are labeled Symbols, Operators, Large, Delimiters...**

To evaluate the derivative in the first expression:

- 1. Click in the equation to put the insertion point in it.**
- 2. Press the space bar until the entire equation is selected.**

- 3. Press Esc or v d.**

To insert symbols and operators in the equations:

1. Click in an equation.
2. Click a symbol or operator in the Equations window.

To close the Equations window, click the close button.

(1)
(2)
(3)

To multiply the matrices in the third equation, select the left side of the equation and type Esc x a.

A big plus: FrameMath™

Evaluating which publishing software to choose is difficult. Feature lists are long, and therefore difficult to compare.

To help you decide which publishing software is best for you, here's a generic checklist of key questions. The answers will help you determine the strength

of the software you're considering.

1. Is the company committed to technical support? Is there e-mail support?

2. Is the product difficult to install? What system resources (RAM, disk) are required to run effectively on all platforms?

3. Can you execute all

commands from the keyboard and the mouse? Can you create keyboard macros?

4. Can you zoom in on any page (text and graphics)? Can you display facing pages? Can you edit while in thumbnail view?

5. Is there open font architecture (for example,

More things to see

This demonstration on document shows only a few of the many FrameMaker features. For a complete list, request a FrameMaker data sheet.

You can also explore FrameMaker on your own. On-line Help is available by

choosing HELP from the Info menu.

On-line documents shipped with FrameMaker include:

- **Document templates.** Choose NEW from the File menu to see a list.
- **Clip art.** To see the clipart, choose Open from

the File menu and open the folder that contains the FrameDocs folder. Then type FrameDocs /ClipArt in the box titled NAME.

Click OK. The clip art documents appear in the scroll list. To open one, click its name in the scroll list and click OK.

*Thanks
for trying
FrameMa
ker!*

*To get your
FrameMaker
license
today,
contact us.*

By phone:
408-433-3311

*By FAX: 408-
433-1928*

By mail:

1010 Rincon
Circle
San Jose, CA
95131-1325

**By
electronic
mail:**
comments@fr
ame.com

*To close
this
documen
t*

From the File menu, choose
Close. Click
No in the
dialog panel
that appears.

*To quit
FrameMa
ker*

Choose Quit
from the main
FrameMaker
menu.

For more information