Apple Manuals   Apple][Pascal   Macintosh   SwyftCard   Canon Cat

Jef Raskin Information

Canon Cat User's Notes

13 pages

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Apple Manuals   Apple][Pascal   Macintosh   SwyftCard   Canon Cat

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       LEAP to a key word, or to see examples, LEAP forward to PAGE — PAGE

                        ┌─────────────────────────┐
                        │ Canon Cat User's Notes │
                        └─────────────────────────┘

The examples on this disk will give you some ideas on working with
your Cat. New Cat users visualize what they want, and just do it.

You can view examples by other Cat users. LEAP forward to PAGE — PAGE

You can scroll through the text on this disk to read it all. Use
SHIFT — LEAP once, let go, and then hold down USE FRONT — LEAP.

To print all thirteen pages, press and hold USE FRONT, then press 7
(This is a simple LEARN command which prints a whole document).

The write-protect tab in the corner of this disk is pushed open, so
you cannot change the contents of this disk by recording onto it with
the Cat. Try it –– press DISK. Get a beep? Press EXPLAIN.

To make a copy of this disk so that you can fiddle with the examples,
add your own text and then save it, put in a blank disk and press DISK.

                    To move on, LEAP to: blue, and LEAP AGAIN

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1. Getting Started

The best way to get started with the Cat is to sit down and go to work. The Cat was designed to forgive errors, so you can try to do what you want just to see how it comes out. If you don't like the result, just press UNDO.

The Cat Tutorial disk gives you an introduction to the Cat's commands. You should work through it first to become familiar with the Cat's features.

The Cat has a compact and complete built-in manual. Just press and hold USE FRONT, then EXPLAIN, and then the blue-labeled command key you want to learn about. Hold USE FRONT down, and you can peruse the manual's screen. To get back to your work, just let go. Try it now: USE FRONT - EXPLAIN, then DISK.

If you give a command the Cat can't understand, or if you are about to make an error and put your text at risk, the Cat beeps. For an explanation and useful suggestions, press EXPLAIN before you press any other key.

As you become more familiar with the Cat, you will want to refer to the printed manuals to gain a thorough understanding of each of its features.

                    For Good Habits, LEAP to: bottom, and LEAP AGAIN

Establishing Good Habits

LEAP, don't creep. If you want to move the cursor more than two or three characters away, LEAPing is much faster.

Separate each separate project with a DOCUMENT character (SHIFT - PAGE).

Start each new project at the 'bottom' of your scroll of text. Your work will be recorded sequentially, and it's easier to visualize on the screen.

Make backup disk copies of all of your work. Make 'hard copy' printouts of your essential work to make it available in case of damage to your disks.

Remember the Cat's design goal —- to be compatible with humans. Do what you want to do, in an efficent way; the Cat will support your effort.

                    For Building up Speed, LEAP to: already, and LEAP AGAIN

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Building up Speed

After you feel comfortable with an editing technique, try a method using fewer keystrokes. The Cat lets you shave keystrokes off many editing tasks.

<u>To highlight a word</u>, LEAP from the first letter to SPACE, but don't let go of the right LEAP key. Press the left LEAP key, and the highlight extends.

<u>If you are trying to highlight a phrase</u>, and the cursor stops short of your intended target, but you have already extended the highlight, keep holding LEAP, press LEAP AGAIN and rehighlight.

<u>To underline a word</u>, just LEAP from its beginning to end, then press USE FRONT - UNDERLINE. You can highlight if you want, but it is not necessary. Other commands which 'autoextend' the highlight are BOLD, CAPS, COPY, and SEND. To use ERASE, you must extend the highlight, to confirm its action.

<u>To re-format a paragraph</u>, press USE FRONT while you set the LEFT MARGIN, then keep holding USE FRONT and change other format parameters all at once.

For LEARN, leap to: list, and LEAP AGAIN

2.   LEARN

If you have to do any job more than twice, let LEARN do the work. Show the Cat how to do it the first time, and watch it go! Remember that you cannot UNDO a LEARN sequence, just the last command in the sequence.

A simple LEARN command is stored on the '7' key on this disk. To print the document containing the cursor (like this one), hold USE FRONT and press 7.

You can store up to ten LEARN commands on each disk. Keep a list of your stored commands. Keep one numeral key reserved for temporary tasks like search and replace, or adding rows of expressions to a table.

<u>When you want to use CALC in a LEARN loop</u>, wait for the CALC to be completed before you enter the next command in the sequence. If you don't wait for the CALC to be fully executed, you may get a beep, and the loop may only be executed once. Wait for the CALC message to go off, then enter the next command, and the Cat will do just what you want, waiting for the end of each CALC before making its next move.

For ideas on filing, SORTing and CALCulating, LEAP forward to: PAGE - PAGE

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3. Filing Systems and Information Retrieval

TABS and MARGINS are important parts of the following examples. To see how they are used, check the ruler at the bottom of the screen, and remember that RETURN and PAGE characters contain the formatting information.

Build a 'Rolodex' file, and you can use the Cat for many things:

    You can LEAP to an address, COPY it, and drag it into a letter.

    You can LEAP to a name, highlight a phone number, and press PHONE; the
    Cat dials numbers in the highlight and ignores other characters. Pick
    up your phone to talk or let your Cat stay on the line for a data call.

Each entry, or 'record', in this address list has 8 'fields'. TAB
characters separate fields on the same line, and RETURN characters separate
fields on different lines. The last field in each entry is for notes. You
can LEAP to any part of any name, address, or note.

The Rolodex doesn't really need to be SORTed, as you can LEAP to anything.
Some people will find it useful to build their address list with separate
fields if they wish to SORT by ZIP code, for example. Scroll for more info.

To add an address, just type it between two others. Type a TAB between the
first and last name, and a TAB for each empty field. Highlight the finished
entry to check for the correct number of fields.

You should have two RETURN characters between records. To SORT, use SETUP
to set the SORT record separator to **2 breaks**. To SORT by ZIP Code,
highlight from the beginning of the list to the ZIP Code of the last entry.

SORTING KEY: Field   What's in it
                   1   First name
                   2   Last name
                   3   Company name
                   4   Street address
                   5   City and State
                   6   ZIP Code
                   7   Phone number(s)
                   8   Notes and miscellaneous information

    Richard E. Tynan
    Borrego Valley Foods
    P.O. Box 1096
    Borrego Springs, CA 92004
    619 767-5321
    Richard makes great Carne Asada in a mix of 23 spices.

    Clarence Brown Alignment Service
    7747 Vickers
    San Diego, CA 92117
    565-2981
    Located on dead-end just west of Convoy

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Make a Calendar

Using a series of LEARN commands, you can build a calendar, fill it
in, and then LEAP to any date, name, or occasion. In this example,
the month and day are separated by a TAB character, so to see what's
happening on December 5, you should LEAP to: d – e – c – TAB – 5.

```
Dec  1 Thu    1pm:  Power Lunch at Bonneville Electric
Dec  2 Fri    Buckle shoe; 11pm:  Fly by night

Dec  3 Sat
Dec  4 Sun    Shut the door
Dec  5 Mon    2pm:  F-Stops vs. Infrareds
Dec  6 Tue    Pick up sticks
Dec  7 Wed    7am:  breakfast at Tiffany's
Dec  8 Thu    Lay them straight
Dec  9 Fri    12 noon:  Luncheon on the grass; 5pm:  Dinner at
              Ziggy's; 8pm:  Tango in Paris

Dec 10 Sat
Dec 11 Sun    8am:  Mammoth tusk excavation
Dec 12 Mon    Final Exams Begin
Dec 13 Tue
```

4. SORT

You can sort a simple list:

```
                    Yams
                    Avocados
                    Rutabagas
                    Brussels Sprouts
```

Or you can sort on any of the eight columns in the table below:

Batting Leaders

Player	Team	Avg	AB	H	BB	SO	RBI
Belitski, Lightnin'	Boomtown	.376	394	148	42	33	97
Hogan, Pee Wee	Celesteville	.348	451	157	33	46	103
Abdul, Lefty	Smallville	.331	432	143	5	65	78
Banks, Robin	Mudville	.321	355	114	18	49	82

USE FRONT – EXPLAIN – SORT will tell you how

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5. Calculations

Good habits: Take extra care when setting up tables; define numbers with variable names. This makes it easy to modify tables later and leaves an 'audit trail' for tracing the sources of results.

Keep text with a lot of CALCs on a disk without too much other text. When you press CALC, you may have to wait while the Cat looks at everything in a large text. The Cat scans the entire text and recalculates each expression, updating any changes you might make.

Note: Changes in the surface text will not change the underlying definition of a value, and will not be considered in a re-CALC.

Changes in numbers which are ordinary text (like the prices in the following example) will affect results of an expression which uses them.

Build-a-Man Kit

Item	Price	Tax	Total
Parts	$56.95	$3.70	$60.65
Plans	12.95	.84	13.79
Batteries	7.50	.49	7.99
Whole Banana	$77.40	$5.03	$82.43

The sales tax rate is 6.5%, defined in the Cat's memory as .065, but rounded here to .07, since we told SETUP to display 2 decimal places.

To change the tax rate above, unpocket the underlying value by LEAPing to the number with the dotted underline. Press CALC, edit the number, and press CALC again. The tax and totals will be recalculated.

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Check Register -- June 1988

Date	Check #	To	For	Amount
6-3	3245	The Floppy House	disks	$15.90
6-5	3246	Max Headroom	alter ego	2500
6-8	3247	Doberman Recyclers	cracked block	50
6-18	3248	Bilgeco Marine	limber holes	132.67
			Total Debits	$2,698.57

DEPOSITS

Date		Amount
6-1	Paycheck	1868.34
6-20	Sale of IBM system	1100
6-22	Rolls Royce rebate	100
	Total Credits	$3,068.34

PREVIOUS BALANCE $384.22   CURRENT BALANCE $753.99

Dinosaur Inventory

Herbivores:	Yellow	Green	Blue	Striped	Species Total
Apatosaurus	5	7	1		13
Diplodocus	4			1	5
Stegosaurus	3	2		1	6
Triceratops		2	5	3	10
					Total=34

Carnivores:	Brown	Gray	Spotted	Species Total
Tyrannosaurus	3	2	1	6
Allosaurus	2	5		7
Herrerasaurus	7		1	8
Daspletosaurus	1	1		2
				Total=23

The total population of dinosaurs is 57, of which
60% are herbivores and 40% are carnivores.

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Boatbuilder's Estimator

In this example, we estimate the cost of a classic wooden boat. Since smaller boats have simpler rigs, are kept out of the water, and have no engines, galleys or heads, we use CALC's Boolean operators to set these expenses to zero, so that they are not simply scaled down.

Boats over 25 feet will have one engine, over 65 feet will have two. Boats over 22 feet will have heads and galleys. Boats over 20 feet will be kept at the marina at $11 per foot per month. Labor is $15 per hour.

To estimate a boat's cost, LEAP to the boldface number (with the dotted underline) defining the boat's length. Use CALC to unpocket the definition and change it to your planned boat's size. CALC again to revise the table.

To adjust an underlying expression to make the mathematical model more accurate, leap to the appropriate number, unpocket, edit, and recalc.

Overall Length of Boat: 37 feet

Materials:	Flywood	Mahogany	Spruce	Adhesives	Finishes	Total
Hull	4559	4306	1773	7091	5825	23554
Spars			3039	507	507	4052
Interior	1621	2279		760	507	5167

Materials: $32772
Labor: $60409

Sails:	Main	Jib	Genoa	Spinnaker
	2875	890	1848	3491

Sails: $9104

Rigging & Hardware $9371
Appliances & Electronics $6332
Engine & Electrical $8864

Total: $126852

  We estimate that the overall cost of custom construction of a 37-foot boat will be $126852, and it will cost $407 for monthly slip rental.

Advice to sailors with big ideas: materials for a hull of this size cost about 50.7 times as much as a 10-foot boat, and sails 13.7 times as much.

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6. The Cat is a Computer

The following suggestions describe unofficial Cat features which allow you to get more out of your Cat. Be advised, however, that some of these techniques temporarily disable some of the Cat's unique safeguards. They require extra care, and may result in loss of your text. Pay attention!

Type and highlight 'Enable Forth Language' (with a RETURN at the end), then use the ANSWER command (USE FRONT-ERASE), and the Cat will run FORTH and 68000 assembly language via the ANSWER key. Just highlight the code you want executed and press ANSWER. This command also turns off the Cat's disk read-write verification, which is a redundant step, so DISK is speeded up. This command is saved on the disk -- it does not need to be redone.

(The Cat runs tFORTH, which shares most features with the FORTH-79 standard described in Leo Brodie's excellent Starting Forth.)

CAUTION: If you mess around with Forth, make sure you take text disks out of the drive; certain strange combinations of FORTH words will destroy your text on the disk and 'hang' the system!

Sophisticated Cat users beware: the standard Cat, without the FORTH language enabled, is a very secure system and rigorously protects your text.
                                    However, when FORTH is enabled,
the USE FRONT - ; command (which you can hit by mistake instead of DISK, or SHIFT - ; to type ':') **may erase your disk.** This feature was retained from the development prototypes, which had double-sided disk drives, and the 'USE FRONT - ;' command would access the other side of the disk.

If you should hit USE FRONT - ; by mistake, the disk drive will make a different sound as it starts up. This may alert you to your mistake. If you notice this, press any key and immediately push the eject button and take out the disk. (It's ok to do this when the disk drive light is on.) You have probably salvaged your text on the disk. Play it safe and save your screen text on a blank disk. Then play back the questionable disk to verify it.

To put your own message on the blanked-out screen, in place of the 'Canon Cat' logo:

    1. First, turn on the FORTH interpreter with 'Enable Forth Language' as
    described above.

    2. then type the FORTH code:

            " string you want to put on screen" screensave$ "to ↵

    3. Note the leading space, then highlight this and use ANSWER.

                example: " Out of Service" screensave$ "to

Each disk stores its own 'screensave' message, so you can tell which disk is in the drive even the screen is dark. For a completely blank screen, use a single space (required by FORTH) to place an 'empty string' on the screen.

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7. Hardware Features

Memory Expansion: You can upgrade the Cat's memory (and the disk drive capacity) from 256K to 384K by installing 4 additional memory chips into the 4 vacant sockets in the main circuit board. No other work is necessary.

   Caution: Full text disks recorded on an expanded-memory Cat will not play back on the standard Cat with the smaller memory. If you want to use a standard Cat to play back the information from a full disk made on an expanded-memory Cat, you must first use the expanded-memory Cat to break the text down into two smaller parts on two different disks. Then each of the 'smaller' disks can be used on a standard Cat.

   Parts required:
   4 ea. Type 4464 or 41464 memory chips, rated at 150ns or faster.

Note: This modification voids the manufacturer's warranty, so we suggest you make this change after the expiration of the warranty period.

Built-in Null Modem: While you have the bottom cover off the machine, you can drill a 1/4" diameter hole in the back of the plastic case, centered between the openings for the serial and parallel ports. This will give you access to the small built-in null-modem switch on the rear edge of the main circuit board. After you have reassembled your Cat, you can use a small stick to slide the switch to the disk-drive side of the Cat to configure the Cat for direct serial communications with another computer or Cat.

Cat Self-Test: If you want the Cat to test itself, switch it on while you use a plastic or wood stick to press and hold the recessed blue button in the back of the machine below the identification plate. After the Cat beeps, let go of the button. Then you can follow the screen prompts to check your keyboard, see test patterns on the screen, and make other tests.

Caution: some options on the self-test menu will erase your disk! Play it safe and take your disk out of the drive before using the self-test.

If you have expanded your Cat's memory, note that the standard memory self-test will show an incorrect result. Don't worry, your Cat works fine, the standard test just doesn't recognize the extra memory.

Serial Port: Via the Cat's serial port, you can communicate with other devices:

   You can connect to serial printers, with an appropriate cable. Many printers now have both serial and parallel interfaces, so that you can use them with either port on the Cat.

   You can have two printers connected to the Cat. Use SETUP for each printer, and tell the Cat which one is the 'main' printer. If you use SETUP to set the parallel port to 'Main Printer' and the serial port to 'Alternate Printer', you can print text on one with PRINT (USE FRONT - J) and on the other with SHIFT - PRINT (USE FRONT - SHIFT - J).

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You can transfer your files from your old computer, or you can send text
back and forth to another computer if it runs a communications program.
SEND is all the Cat needs for communications. Connect an appropriate
cable from the Cat's serial port to the serial port of the other
machine. Use a null modem connector, or slide the Cat's null-modem
switch to the disk drive side of the Cat (see Null Modem above). Use
SETUP to set the serial port to the SEND command, with Full-Duplex
communications at 9600 baud. If the other machine's communications
program is set to these parameters, you can just start sending things
back and forth.

If you get too many RETURNs in the text coming into the Cat, try setting
both machines to **line terminator: None.**

All text coming into a Cat is Cat text, so you know what to do with it.

You can send text to other serial devices, such as a speech synthesizer,
which allows you to hear your text spoken.

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8.   Things not mentioned in the Cat manuals

SEND into a LOCKED Document is Unsuccessful
Caution: If the cursor is left in a LOCKED document, text sent from a remote source to the Cat will be lost, with no notice to the sender or the sendee!

DISK RECOVERY Warning
If you get a DISK RECOVERY message at the lower edge of the screen, hit any key and immediately remove the disk (it's ok to do this when the drive is spinning), then put in a blank disk and try to save your text. Check the original disk a few times by recording and playing back, as it is probably a bad disk and should be discarded.

9.   Odds and Ends

Saving Homeless Text
If you have no disk in the drive when you create some new text, you can save it safely on a disk which already has text recorded on it. Highlight the new text, put your disk in the drive, and press DISK. The new text, which had no disk source, will be 'copied up'. Then use DISK again to save it along with your old text on the disk.

A Fancy Way to Lose Your Text, While Thinking You Are Smart:
Take your disk out of the drive, because you are doing some weird CALC, LEARN or FORTH that may goof up your text. Then erase everything except a small amount of text in memory, which is a subset of your larger text on the disk. Fiddle around with the small text, then make a few notes about what you have done, highlight them and **try** to copy them up to your original disk. What you really do is write the little text over the big original text and wipe-out your original text on disk! Both the little text and the big text had the same source disk, so the Cat considers the little text to be an updated version of the big text.

Prevent Loss of Loved Ones Overboard
Save experiments on a separate disk, and always make backups of your important work.

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To see What's on This Disk, LEAP backward to: PAGE - PAGE

          O.   Summary of Examples, and Where to Find Them

Filing: Rolodex -- who's who
            (LEAP forward to: PHONE)
            Calendar -- who's doing what with whom
            (LEAP forward to: door)
SORT: Batting Leaders -- SORTing on several columns
            (LEAP forward to: eight)
CALC: Build-a-Man Kit -- simple table with relative addresses
            (LEAP forward to: banana)
            Check Register -- simple accounting
            (LEAP forward to: DEPOSITS)
            Dinosaur Inventory -- table, with expressions embedded in text
            (LEAP forward to: spotted)
            Boatbuilder's Estimator -- fancy table with Boolean operators
            (LEAP forward to: marina)

                    To return to this screen, LEAP forward to PAGE - PAGE

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