The Quick Answer™

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October 1996

Volume 7, Number 10

Merging Data with Complex Forms— A Case Study

Tom Marcellus

Organizing data to print on complex forms—even creating the forms in Write—isn't such a brutal task if you know a few tricks.

DOS

MY Congressman, Chris Cox, has been an avid Q&A user and *Quick Answer* reader for years. In fact, he developed his own Q&A 4.0 campaign management application to track information on thousands of supporters and their contributions. He uses Q&A Write and mail merge for his correspondence and fundraising mailings, and prepares his Federal Election Committee (FEC) reports from the information in his databases.

What has stumped Chris and his staff, though, is how to automate the preparation of these periodic FEC reports. It was taking two days to organize then manually enter the information into a forms program designed to print the reports, even though the raw data was already in his Q&A databases. The data crunching required to generate the information was complex. The form the FEC wanted it printed on was complex. Here's why:

- The FEC form accommodates exactly seven contributors per page. (See **Figure 1** on page 3) A full report for a given period might run to 20 or more pages.
- Each page must show the page number in a 1 of 20, 2 of 20, and so on, format, along with a subtotal of receipts for the page.
- The final page (20 of 20, for example), must show the grand total of all receipts (the sum of the page subtotals) for the reporting period.
- Persons making a campaign contribution during the reporting period have to be listed by name and address in a small address block, with their employer and occupation in adjacent blocks.
- The receipt date of *each* contribution along with the amount have to appear in two adjacent line-item-like columns. (A person might make several contributions during the reporting period.)
- Each contributor's aggregate year-to-date contribution amount must be shown.
- The report must show whether each contributor's contributions were for a Primary or General election.

Continues on page 3

Time's Almost Up!

Tom Marcellus, Editor

IF you see this by October 16, there's still time to register for *The Quick Answer*'s Q&A Master Seminar October 18 in Colorado Springs, Colorado. Call 800-780-5474 or 301-424-1658 right now to find out if we can squeeze you in. We'd love to see you!

If you've ever tried to spruce up a Q&A for DOS merge document with Line Draw, chances are you soon abandoned *that* little adventure. Trying to keep the lines from going all "kerflooey" as you carefully place the text or merge fields is practically impossible. And if you use a font other than Courier, your output looks like it exploded. Now there's a way you can add graphic lines and boxes—that won't distort—anywhere you like, and still precisely position your text or merge field data. Use the tricks I reveal to print sophisticated forms with your data joined or merged exactly where you want it.

Speaking of avoiding explosions, have you ever redesigned a database that contains saved reports, or used the Copy Design Only feature to copy a database's structure? If the answer is yes, your application could be headed for disaster. **Gordon Meigs** tells you why, and what you can do to prevent it.

In The Program Spec, **Jeff Nitka** shows you how to eliminate interim calculation fields from your database by using XPost and @XLookup to save and retrieve temporary variables externally. He also describes his technique for creating postable records on-the-fly. **QA**

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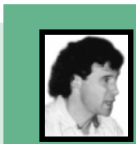
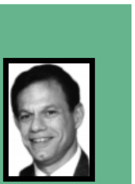

David Dvorin


Bill Halpern

Gordon Meigs

Tom Marcellus

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Merging Data ...

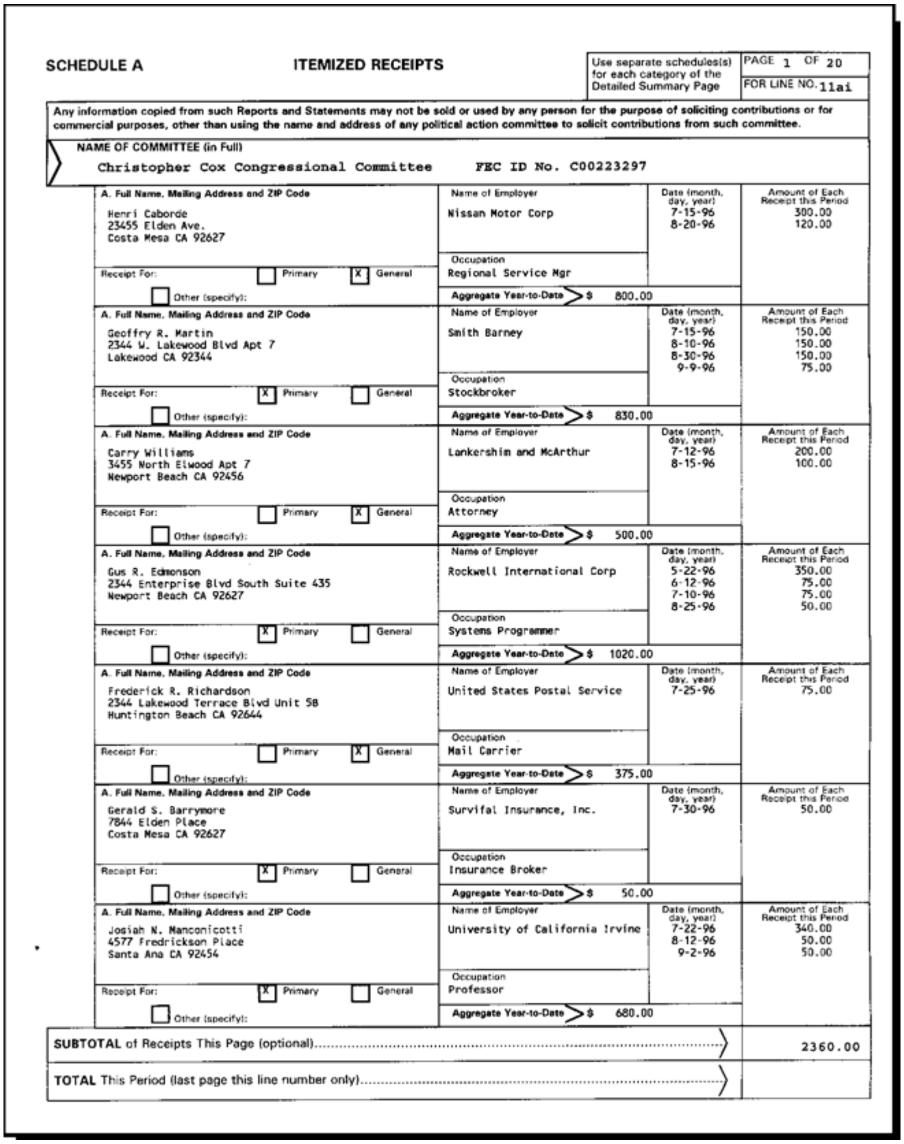
Continued from page 1

So we had three challenges: How to compile (organize) the data; how to arrange it to print to the FEC form; and how to automate the whole thing.

Square one

Virtually all the data required for the FEC report was in a check receipt database. Each CHECK.DTF record contained, among other things, an auto-assigned sequential check record number, the Donor ID, the amount of the contribution, and the date it was received.

They were printing a couple of columnar reports to generate the bulk of the required information—one that listed contributors, contribution dates, and amounts, and another that showed each contributor's year-to-date contribution total. Using these, they were retyping the data into this rather lame Windows forms program (designed for FEC filings) that lacked any data import facilities.



SCHEDULE A ITEMIZED RECEIPTS

Use separate schedules(s) for each category of the Detailed Summary Page

PAGE 1 OF 20

FOR LINE NO. 11ai

Any information copied from such Reports and Statements may not be sold or used by any person for the purpose of soliciting contributions or for commercial purposes, other than using the name and address of any political action committee to solicit contributions from such committee.

NAME OF COMMITTEE (in Full)
Christopher Cox Congressional Committee FEC ID No. C00223297

A. Full Name, Mailing Address and ZIP Code Henri Caborde 23455 Elden Ave. Costa Mesa CA 92627	Name of Employer Nissan Motor Corp	Date (month, day, year) 7-15-96 8-20-96	Amount of Each Receipt this Period 300.00 120.00
Receipt For: □ Primary ☒ General □ Other (specify):	Occupation Regional Service Mgr Aggregate Year-to-Date > $ 800.00		
A. Full Name, Mailing Address and ZIP Code Geoffry R. Martin 2344 W. Lakewood Blvd Apt 7 Lakewood CA 92344	Name of Employer Smith Barney	Date (month, day, year) 7-15-96 8-10-96 8-30-96 9-9-96	Amount of Each Receipt this Period 150.00 150.00 150.00 75.00
Receipt For: ☒ Primary □ General □ Other (specify):	Occupation Stockbroker Aggregate Year-to-Date > $ 830.00		
A. Full Name, Mailing Address and ZIP Code Carry Williams 3455 North Elwood Apt 7 Newport Beach CA 92456	Name of Employer Lankershim and McArthur	Date (month, day, year) 7-12-96 8-15-96	Amount of Each Receipt this Period 200.00 100.00
Receipt For: □ Primary ☒ General □ Other (specify):	Occupation Attorney Aggregate Year-to-Date > $ 500.00		
A. Full Name, Mailing Address and ZIP Code Gus R. Edmonson 2344 Enterprise Blvd South Suite 435 Newport Beach CA 92627	Name of Employer Rockwell International Corp	Date (month, day, year) 5-22-96 6-12-96 7-10-96 8-25-96	Amount of Each Receipt this Period 350.00 75.00 75.00 50.00
Receipt For: ☒ Primary □ General □ Other (specify):	Occupation Systems Programmer Aggregate Year-to-Date > $ 1020.00		
A. Full Name, Mailing Address and ZIP Code Frederick R. Richardson 2344 Lakewood Terrace Blvd Unit 5B Huntington Beach CA 92644	Name of Employer United States Postal Service	Date (month, day, year) 7-25-96	Amount of Each Receipt this Period 75.00
Receipt For: □ Primary ☒ General □ Other (specify):	Occupation Mail Carrier Aggregate Year-to-Date > $ 375.00		
A. Full Name, Mailing Address and ZIP Code Gerald S. Barrymore 7844 Elden Place Costa Mesa CA 92627	Name of Employer Survifal Insurance, Inc.	Date (month, day, year) 7-30-96	Amount of Each Receipt this Period 50.00
Receipt For: ☒ Primary □ General □ Other (specify):	Occupation Insurance Broker Aggregate Year-to-Date > $ 50.00		
A. Full Name, Mailing Address and ZIP Code Josiah N. Manconicotti 4577 Fredrickson Place Santa Ana CA 92454	Name of Employer University of California Irvine	Date (month, day, year) 7-22-96 8-12-96 9-2-96	Amount of Each Receipt this Period 340.00 50.00 50.00
Receipt For: ☒ Primary □ General □ Other (specify):	Occupation Professor Aggregate Year-to-Date > $ 680.00		

SUBTOTAL of Receipts This Page (optional)........ 2360.00

TOTAL This Period (last page this line number only)........

Figure 1. A complex form with complex data formatting requirements. You can create forms like this in Write, and place your data in them with precision.

Using a variety of techniques, we eventually came up with a way to organize the data and print it on the FEC form you see in Figure 1. I'll briefly cover how we did this, then describe the extraordinary merge document that brought it all together. Hopefully, you'll pick up a few ideas you can put to use in your own applications.

A SUMMARY database

We started by creating a SUMMARY database to organize the donation information (check amounts and dates received) for each person who made a contribution during the reporting period. (See **Figure 2**.) If someone made three contributions, his or her SUMMARY record would show the Donor ID, the three check record numbers, dates and amounts (from CHECK.DTF) along with the name, address, occupation, and employer (from ADDRESS.DTF).

The first data items we had to get into the SUMMARY database were the Donor ID numbers and check record numbers. With these, we could Mass Update SUMMARY with XLookups to pull in everything else.

To generate an importable disk file of Donor IDs and their check record numbers, we designed a CHECK.DTF report. The Retrieve Spec included all contribution checks received during the reporting period, and the Column/Sort Spec and derived column looked like this:

```
Donor ID: 1, AS, I
Check Record No: 3, AS, CS, F(JL)

Heading: Donor
Formula: #1 + "*"
   Spec: 2, AS
```

With the Report Global Options set to *No Repeating Values* and *Skip Line at Column Break*, and with a page length of 1000, the report prints the data to disk in Donor ID and check number order, like this:

```
Donor Check Record No
----- ---------------
933*  3488
      3732
      3800

1215* 3492
      3621

1217* 3490
      3611
```

The macro that prints the report, pulls the output file into Write, “presses” Shift-F4 twice to remove the column headings and separator dashes, then replaces the asterisks with carriage returns (@Cr). The reformatted output file looks like this:

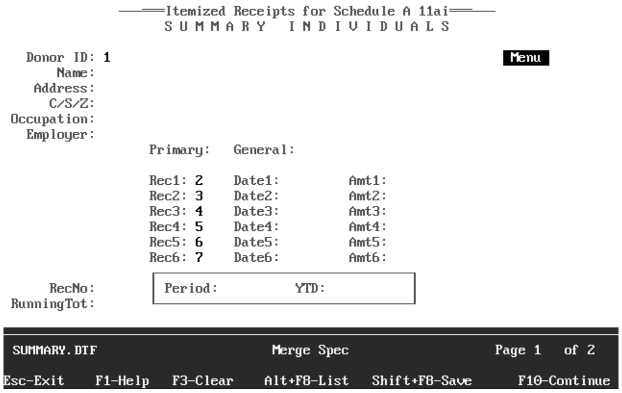
```
933
  3488
      3732
      3800

1215
 3492
      3621

1217
 3490
      3611
```

The file is now in a format suitable for importing as a Standard ASCII file into the empty SUMMARY database.

The Merge Spec for the import is a 1 in the Donor ID field, and 2 through 7 in the Rec1 through Rec6 fields. (See Figure 2.) Although our SUMMARY records could accommodate up to six donations, it’s rare that more than three are received from any donor during a reporting period.

At the ASCII Import Options screen, the Field Delimiter was set to Return. This way, two carriage returns serve as a Record delimiter.

With the import finished, SUMMARY contained one record for every person who made a campaign contribution during the reporting period, along with his or her pertinent check record numbers.



```
        ══Itemized Receipts for Schedule A 11ai══
           S U M M A R Y   I N D I V I D U A L S

  Donor ID: 1                                          Menu
      Name:
   Address:
     C/S/Z:
Occupation:
  Employer:
             Primary:   General:

             Rec1: 2    Date1:          Amt1:
             Rec2: 3    Date2:          Amt2:
             Rec3: 4    Date3:          Amt3:
             Rec4: 5    Date4:          Amt4:
             Rec5: 6    Date5:          Amt5:
             Rec6: 7    Date6:          Amt6:

     RecNo:    Period:          YTD:
RunningTot:

 SUMMARY.DTF                Merge Spec                 Page 1   of 2
Esc-Exit   F1-Help  F3-Clear   Alt+F8-List  Shift+F8-Save    F10-Continue
```

Figure 2. SUMMARY.DTF’s Merge Spec filled out to import the disk report containing Donor IDs and check record numbers.

The YTD database

Since the report also requires the aggregate year-to-date contribution amount for each listed donor, we created a YTD.DTF database with two fields—Donor ID and YTD Amt—and a second CHECK.DTF disk report. This report retrieves all the CHECK records for contributions made in the current year, and totals them by Donor ID using the following Column/Sort Spec and derived columns:

```
Donor ID: 1,AS,CS
Check Amount: 2, I

Heading:
Formula: #1
Spec: 50, I

Heading: YTD
Formula: @Text((#1<>#50),@Str(@Total(#2, #1)))
Spec: 3, F(N2)
```

With the page length set to 1000, the macro prints the report to disk, then brings it into Write, where it looks like this:

```
Donor ID   YTD
-------- -------
933       900.00
1215     1000.00
1217      125.00
1311      500.00
1322      200.00
1420      375.00
1566      540.00
```

The macro removes the column headings and separator lines, resaves the file, then imports it as a Standard ASCII file into the empty YTD.DTF database.

The Merge Spec for the import is 1 in the Donor ID field, and 2 in the YTD Amt field. At the ASCII Import Options screen, the *Field* delimiter is set to *Space*. With the import done, YTD.DTF is ready to serve as a lookup file for the SUMMARY.DTF Mass Update to follow.

Mass Updating SUMMARY.DTF

At this point, each SUMMARY record contains a Donor ID and between one and six check record numbers.

Using the Donor ID as the key value, the Mass Update performs an XLookup to retrieve the name, address, occupation and employer from ADDRESS.DTF, and the year-to-date aggregate from YTD.DTF.

Using the check record numbers in the Rec1 through Rec6 fields as key values, the check-received dates and amounts are retrieved via XLookup from CHECK.DTF. The contributor’s total amount for the reporting period is then calculated by adding the Amt1 through Amt6 fields.

The macro ends at this point so the SUMMARY data can be spot checked. If everything looks okay, a second macro performs a second SUMMARY Mass Update. This one numbers the SUMMARY records (the RecNo field) starting at 1, and calculates the running total from record to record. If, for example, SUMMARY contains 167 records, then the lowest Donor ID's record is assigned 1, and the highest Donor ID's record is assigned 167. Record 167, therefore, contains the grand total of all contributions from all donors during the reporting period.

We knew we had to merge seven records with each page of the report. Therefore, we also knew, for example, that SUMMARY record number 40 will be the fifth record to print on page 6, record number 113 will be the first one on page 17, and so forth. By including in the SUMMARY Mass Update a statement to calculate the running totals of the records from record 1 on up to however many records there might be, we can get the subtotal for each report page (seven records), along with the grand total for the final report page.

Printing the report forms

At this point, all the data required for the FEC report is neatly organized in the SUMMARY.DTF records. The second part of the procedure automates printing it to the report forms.

The mailing label

To print a group of records to a page, we created a custom mailing label that includes merge fields for the name, address, employer, occupation, YTD amount, check-received dates and amounts—all from SUMMARY.DTF. Here are the particulars:

```
Width: 8"            Height: 1.7"
Left margin: .6"     Other margins: 0

Regular font: LaserJet Line Printer 16
Lines per label sheet: 86
Blank lines at top: 13
Print to: PtrE
```

The label height, characters per inch, and lines per label sheet work together to produce the precise line spacing needed (in this case, just a hair under 8 lines per vertical inch) to fill the FEC form with seven records.

The macro prints a group of seven labels to FILE rather than to the forms. We installed Printer E to print to FILE, specifying the correct printer, an HP LaserJet 4. (Later, you'll find out why we didn't print directly to the forms.) The macro then opens the file, deletes the first and last lines (containing LaserJet printer control codes), then resaves it. The resulting 3PAGE.LBL document is then *joined* with a Write merge document (more on this later), and out comes the FEC form page with the data from the seven records in it.

The printing procedure

Each page of the FEC report is a seven-record group. The data originates from SUMMARY.DTF, reformatted by the mailing label output. The macro prints "labels" for the first seven SUMMARY records to the 3PAGE.LBL output file, strips out the printer control codes, then joins it with the master 4FORM.DOC merge document to print as page 1.

The macro then prints the next seven records to 3PAGE.LBL, and joins that file with 4FORM.DOC to print as page 2, and so on until the entire report has been printed.

This process is controlled from a small one-record database named CONTROL.DTF. When the operator gives the command to print, an XLookupr statement in CONTROL retrieves the highest record number in SUMMARY. If it's evenly divisible by 7 (*@Mod(MaxRecNo, 7) = 0*), that's how many pages the printed report will be. Otherwise, it'll be that many pages plus 1. The number is stored in CONTROL's LastPageNo field.

When the print command is invoked, CONTROL's PrintPageNo field is set to 1, the StartPrintRecord field is set to 1, the EndPrintRecord field is set to 7, and the Subtotal field is set to the subtotal for page 1. The macro saves the record and heads for the "mailing label."

The label's Retrieve Spec is comprised of two @XLookup expressions that retrieve the StartPrintRecord and EndPrintRecord values from the single CONTROL record, so Q&A knows to print labels for SUMMARY records 1 through 7.

The macro prints the seven labels to 3PAGE.LBL, sends the merge document to the printer (joining 3PAGE.LBL), and returns to the CONTROL record as the page is printing. StartPrintRecord and EndPrintRecord are bumped to 8 and 14, respectively, PrintPageNo is set to 2, the page Subtotal is updated, and the macro is re-invoked (via @Macro) to process and print page 2 in the same manner.

This cycle repeats until CONTROL's PrintPageNo equals Pages, at which time the Grand Total is retrieved from the highest record number in SUMMARY, and the macro is invoked for the last time. (This is a variation on a theme by Jeff Nitka. See his "Make Your Macros Loop the Loop" in the June 1996 issue.)

As each page of the report prints, merge fields in the 4FORM.DOC document merge the PrintPageNo, Pages, Subtotal, and Grand Total fields from the single CONTROL record. The Grand Total field remains blank until the final page is processed.

Figure 3 shows how everything fits together.

The merge document

We started out by printing to photocopies of the FEC forms, but the problem of positioning the original exactly when making the copies gave mixed results.

Moreover, when you run even high quality paper through a photocopier, the sheets curl enough to make running them back through a laser printer problematic. The first few might print with the data dead on, the next few a bit off, then the printer might jam due to the curling and physical handling.

But that wasn't all. The original FEC form was *designed* just enough out of whack to cause problems. The box for the first contributor's data was 30 cm high, the next one a bit bigger, and the next a bit bigger still, so that by the time printing reached the sixth and seventh boxes, the Q&A data was creeping up, printing a few centimeters off and on top of the lines and text labels designed into the form. All these factors conspired to make printing to *copies* of the form too chancy.

The great escape

Roger Skidmore—an optician—helped me see the light. In his "Create Shaded Text Boxes—and More" in the March 1996 issue, Roger shows how to type LaserJet control codes in a Write document to print precision graphic lines. (If you've ever tried to use Line Draw to spruce up a Write document containing merge fields or proportionally spaced fonts, you know the mess that results. You're about to find salvation.)

When you use the *decimal* printer codes that Q&A accepts at every Print Options screen, Q&A's printer driver converts them to the *escape* codes for the printer. Escape codes, not the decimal equivalents, are what actually control the printer.

Q&A's printer drivers aren't designed to handle certain printer functions. For example, you can type the *decimal* code to set eight lines per inch printing or invoke a printer font, and it'll work. But try to specify *nine* lines per inch printing using a decimal code and it won't. Likewise, if you use decimal codes to draw a box, the page will emerge from the printer with a "lucky charm" on it but no box.

The question was, could I use this escape code technique to duplicate (create from scratch) the FEC form on plain paper *in the printer*, and merge the Q&A data into it at the same time? It turned out I could.

Programming the printer with escape codes

When using escape codes in a Write document, you have to think in terms of the physical page. (Laser printers create an entire page before printing any of it.) You can use a 300 dpi-based grid (300 dots per inch) to position the elements (lines, text, or whatever) precisely on the page. Using *x* as the horizontal axis, and *y* as the vertical axis, you can tell the printer to print a six-inch horizontal line beginning one-inch from the left and three inches down. Here it is in English:

1. Move 300 dots (one inch) to the right.
2. Move 900 dots (three inches) down.
3. Print an 1800-dot (six inch) line, 4-dots thick.

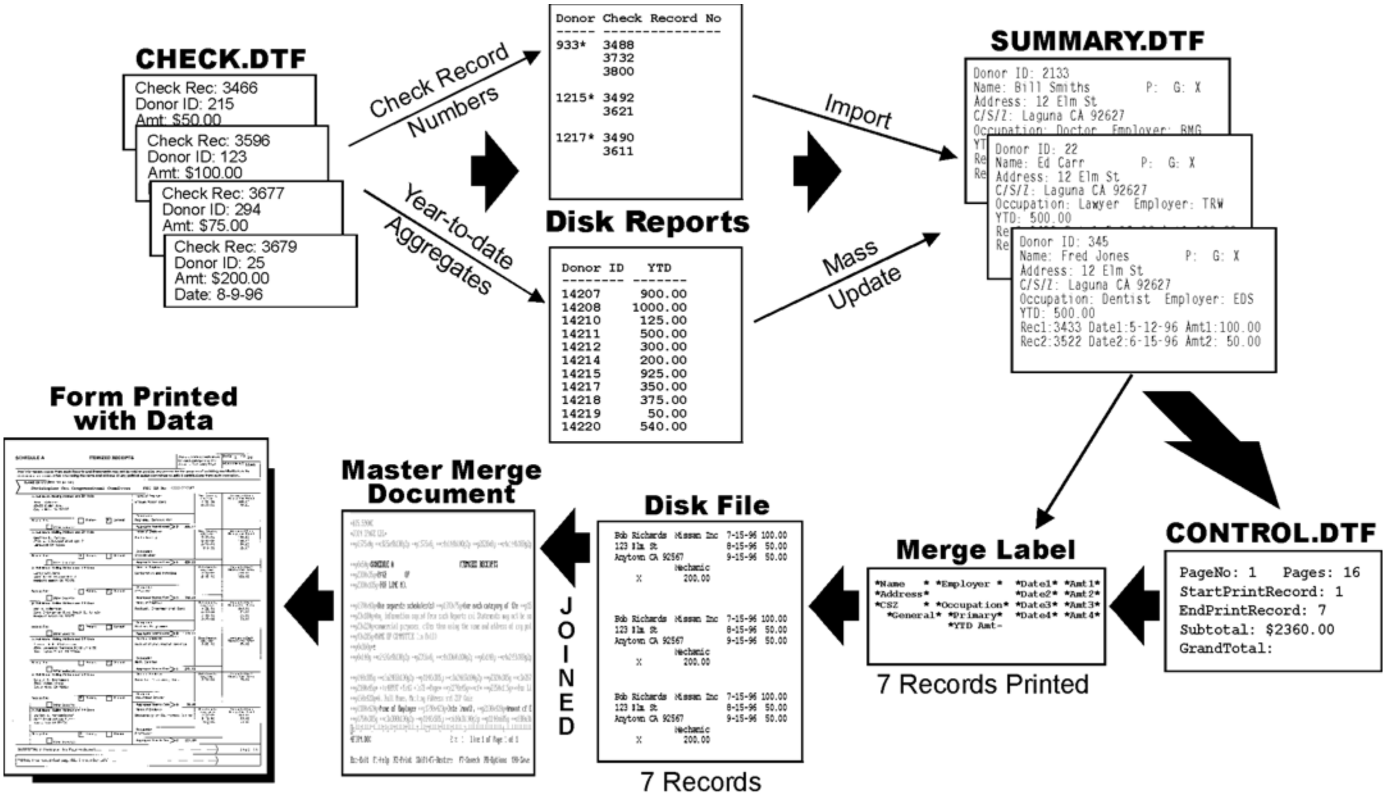


Figure 3. From the original CHECK.DTF records to printing the FEC report.

The escape codes that perform this feat look like this:

```
←*p300x900y ←*c1800a4b0p
```

The LaserJet escape character, the left arrow, tells the printer "new command coming!" All LaserJet control codes must begin with it. (Other printer makes have their own control codes to perform the same functions, though many support the HP PCL Printer Control Language.) To create this character in Write, press Alt-F10, then Alt-27, using the numeric keypad.

The first code tells the printer where to start printing on the *x*-*y* axis. The second one says print a line 1800 dots long (c1800a) by 4 dots thick (4b), with a solid black fill (0p), which gives you about a two-point line.

Laser printers have an unprintable margin around the physical page. The LaserJet 4's are something like .5-inch top, and .25-inch left, so when you tell the printer to print a line one-inch down from the top of the page, and one-inch in from the left, it will start printing at one-inch plus .5-inch down, and one-inch plus .25-inch to the right. Be sure to take these unprintable margins into account when positioning any lines or text on the page.

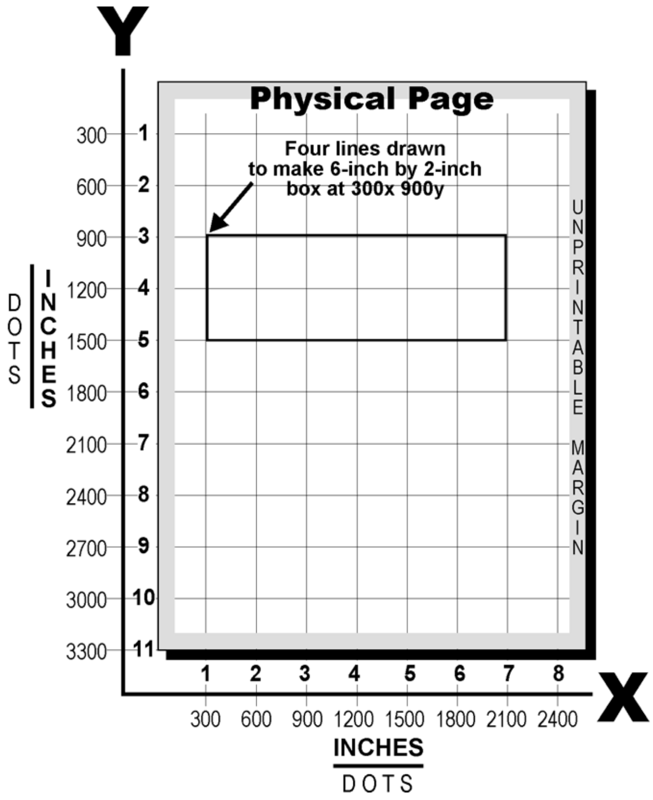


Figure 4. Using a grid where 300 dots equals one-inch, you can type escape codes in your Write document to draw graphic lines and boxes anywhere on the page. Using additional printing coordinate commands, you can place text and merge fields inside the boxes.

In the earlier example, the horizontal line begins at coordinates 300*x* 900*y*, so you can send another command to create a two-inch *vertical* line starting at 300*x* 900*y*. Since the original horizontal line ends at 2100*x* 900*y*, you can create another two-inch vertical line starting at that point. You can then create a second horizontal line between the end points of the two vertical lines, and you've got a rectangular box six-inches wide by two-inches high. (See **Figure 4**.)

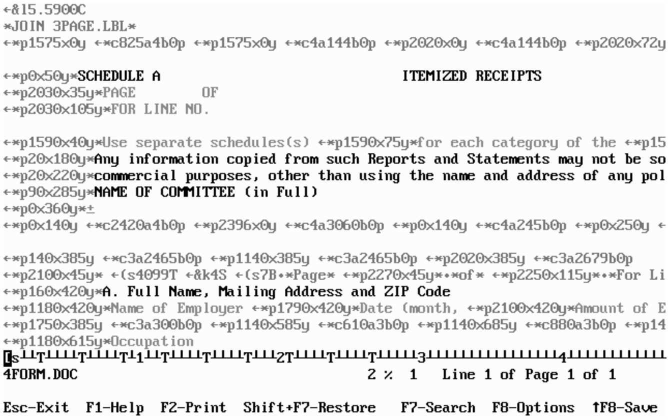
It took more than a few escape codes to create all the lines and boxes (and position the text labels) in the FEC form, but after I typed a few and saw the results on the printed page, I got the hang of it. (I copied and pasted using F5, then edited the codes for page position and line length.)

Figure 5 shows the top left portion of the 4FORM.DOC Write merge document I programmed to create the FEC form. To have plenty of room for all the codes, I set the document's top, bottom, and left margins to 0 (zero), and the right margin and page width to 240 at the Define Page screen. If your output breaks onto a second page, simply increase the page length at the Define Page screen.

The first printer code in the document is ←&l5.5900C (that's a lowercase "L" following the "&" sign. You'll find these codes at the back of your printer manual.) It tells the printer to set the line spacing (what the *HP LaserJet 4P Printer User's Manual* calls the "vertical motion index") to 5.5900, which is 5.59 48ths of an inch, or just under eight lines per inch—exactly right for the FEC form.

The second line is the Q&A *JOIN* command that joins (merges) the 3PAGE.LBL document.

Further down the page are the merge fields for the page number, last page number, page subtotal, and grand total, all merged from CONTROL.DTF.



```
←&l5.5900C
*JOIN 3PAGE.LBL*
←*p1575x0y ←*c825a4b0p ←*p1575x0y ←*c4a144b0p ←*p2020x0y ←*c4a144b0p ←*p2020x72y

←*p0x50y*SCHEDULE A                                ITEMIZED RECEIPTS
←*p2030x35y*PAGE        OF
←*p2030x105y*FOR LINE NO.

←*p1590x40y*Use separate schedules(s) ←*p1590x75y*for each category of the ←*p15
←*p20x180y*Any information copied from such Reports and Statements may not be so
←*p20x220y*commercial purposes, other than using the name and address of any pol
←*p90x285y*NAME OF COMMITTEE (in Full)
←*p0x360y*±
←*p0x140y ←*c2420a4b0p ←*p2396x0y ←*c4a3060b0p ←*p0x140y ←*c4a245b0p ←*p0x250y ←

←*p140x385y ←*c3a2465b0p ←*p1140x385y ←*c3a2465b0p ←*p2020x385y ←*c3a2679b0p
←*p2100x45y* ←(s4099T ←&k4S ←(s7B•*Page* ←*p2270x45y*•*of* ←*p2250x115y*•*For Li
←*p160x420y*A. Full Name, Mailing Address and ZIP Code
←*p1180x420y*Name of Employer ←*p1790x420y*Date (month, ←*p2100x420y*Amount of E
←*p1750x385y ←*c3a300b0p ←*p1140x585y ←*c610a3b0p ←*p1140x685y ←*c880a3b0p ←*p14
←*p1180x615y*Occupation
```

s└┴T└┴┴┴T└┴┴┴T┴1└┴T└┴┴┴T└┴┴┴T└┴┴2T└┴┴┴T└┴┴┴T└┴┴┴┴3└┴┴┴┴┴┴┴┴┴┴┴┴┴┴┴4└┴┴┴┴┴┴┴┴┴┴┴
4FORM.DOC
2 % 1   Line 1 of Page 1 of 1
Esc-Exit
F1-Help
F2-Print
Shift+F7-Restore
F7-Search
F8-Options
↑F8-Save

Figure 5. The top left portion of the Write document containing the LaserJet escape codes that create the FEC form in Figure 1.

Placing text elements on the page

As you move down the Write document typing the escape codes for the horizontal and vertical lines that create the boxes, you can add text (labels for the form's sections, for example). To position text on the page, specify the *x* and *y* coordinates, type the text as you want it to print, then enhance it (Shift-F6) with the appropriate font and size. (You can add merge fields in the same manner. Simply precede them with an escape code telling the printer where on the page to print the data.)You can assign fonts (Shift-F6, A) at any time. If you need more fonts than the Font Assignments screen accommodates (eight plus the Regular font), you can always invoke them via escape codes. (See the sidebar, "Escape Codes and Printing Oddities.")

This 4FORM.DOC document uses Line Printer 16 as the Regular font (for the joined Q&A data), several sizes of Univers and Univers bold for the text and text labels, the Wingdings font for the small check boxes, and two sizes of the Symbols font for the right angle brackets. They're all internal LaserJet 4 fonts.

A procedure that took two days now takes just a few minutes. And we did it all in Q&A. **QA**

Tom Marcellus is editor of *The Quick Answer* and author of *PC World Q&A Bible* (IDG Books). His QuickClick Calendar Plus—a time- and activity-tracking database for Q&A 5.0—is available from Marble Publications, publisher of *The Quick Answer*.

Escape Codes and Printing Oddities

LaserJet escape codes that specify printing coordinates have an asterisk after the escape character. If you follow such a code with text or a Q&A merge field, the first character will be missing in the output. To prevent this, simply add another asterisk to the end of the escape code or use the ASCII 7 non-printing character (press Alt-F10, then Alt-7, using the numeric keypad).

For example, the following code prints "Year to Date" in whatever font you've enhanced the text (don't enhance the escape code), starting at position 720*x* 1200*y* :

```
←*p720x1200y*Year to Date Amount
```

If you don't add the second asterisk, you'll get "ear to Date."

When you send an escape-coded document to the printer with a merge file specified, Q&A thinks the codes (surrounded by asterisks) are merge fields, and complains it can't find them. Simply ignore the warning and press F10 to continue.

Quick Tip

Defrag Misinformation

Chances are you've used DEFRAG and SCANDISK, the disk maintenance utilities that come with MS-DOS 6.20.

However, be aware that the figure DEGRAG gives for the percentage of fragmentated files on your hard disk can be misleading. For example, DEFRAG might report that "95 percent of Drive C: is not fragmented." You might think means hardly any fragmentation at all, but consider that the vast majority of the files on your hard disk are program files. They're never modified and don't become fragmented over time. Only data files—or new or modified files—become fragmented. If such files represent just 10 percent of your hard disk data, you can multiply DEGRAG's fragmentation percentage by 10—that's a whopping 50 percent in this example.

Worse yet, if you have a large database, it might become severely fragmented over time. How can you tell? Run SCANDISK.

If your path statement includes the path to your DOS directory, you can switch to your Q&A data directory and enter this command:

```
SCANDISK/F  *.DTF
```

You'll get a report that looks like this:

```
C:\QA5\DATA\VISITS.DTF contains 5 noncontiguous blocks.
C:\QA5\DATA\EXCH.DTF contains 6 noncontiguous blocks.
C:\QA5\DATA\LINKSBAK.DTF contains 25 noncontiguous blocks.
C:\QA5\DATA\TIMEMATH.DTF contains 2 noncontiguous blocks.
C:\QA5\DATA\CONTACT.DTF contains 30 noncontiguous blocks.
C:\QA5\DATA\LINKS.DTF contains 30 noncontiguous blocks.
```

You can see the degree of fragmentation in all your databases at a glance. SCANDISK works equally well in Windows 95. Choose Start / Programs / MS-DOS Prompt, and run the utility with the same switch and *.DTF wildcard, leaving a space between the F and asterisk.

Alec Mulvey, Keyword Training, Ascot, England

@Help

Edited by Dave Reid

Calculate Miles Per Gallon

I run a trucking company that delivers locally. I need to monitor my trucks' mileage to track maintenance intervals and determine which drivers are the most efficient. My database stores the ending odometer reading and the number of gallons used per day per truck. This allows me to print a report showing the information, but to compute miles per gallon I have to use a calculator. Is there any way the report can do that work for me?

Paul MacLellan, Sydney, Nova Scotia, Canada

A few modifications to your existing report should do the trick. Here's a sample report's Column/Sort Spec:

```
Truck #: 1,AS
Odometer: 2,AS,CS
Gallons: 3
```

This produces a report similar to yours. Add the following Derived Columns:

```
Heading: Dupe Truck Number
Formula: #1
Column Spec: 50,I

Heading: Dupe Odometer Reading
Formula: #2
Column Spec: 51,I

Heading: Miles!Traveled
Formula: @Text (#1=#50, #2-#51)
Column Spec: 10, F(N0)

Heading: Miles/!Gallon
Formula: @Text (#1=#50, #10/#3)
Column Spec: 11, F(N1)
```

Column 50 is a copy of the Truck #, and it's used in columns 10 and 11 to control when the calculations occur. The values of column 1 and 50 are compared and, when they're the same, the related calculations are performed. (This is the reverse of a popular derived column trick where calculations are performed only when columns 1 and 50 *aren't* equal.) Column 51 is a copy of the Odometer reading from column 2. It's necessary because while column 10 is being computed, column 51 contains the odometer reading from the previous record. Thus, the miles traveled today equals today's reading in column 2, minus yesterday's reading, in column 51. Here's what a portion of the report might look like:

```
                             Miles    Miles/
Truck #  Odometer  Gallons  Traveled  Gallon
-------  --------  -------  --------  ------
1            1000       10
             1100        5       100    20.0
             1250        7       150    21.4
             1500       10       250    25.0
             1700        8       200    25.0

2            1000       10
             1200       10       200    20.0
             1300        4       100    25.0
```

What to Do with Error #06A8

One of my databases has a problem that seems to be affecting several others. Once in a while, one of the records in a lookup database goes bad. Then, whenever another database performs a lookup to that record, I receive error message #06A8. I can't edit the bad record without receiving the same error message, but I can delete then re-enter it. Then, all the databases are once again in harmony. But a few days or maybe a week later, another record goes bad and I'll have to delete then reenter *that* one. Is there any way to prevent this from happening?

Angelo Galiber, Christiansted, Virgin Islands

It sounds like the lookup database's index is corrupted. The problem might go away if you copy the database design, then copy all of the records to the new design.

To begin, select Copy from the File menu, and enter the name of the lookup database. From the Copy menu, select Copy Design Only, then enter a new name for the file, such as LOOKBACK.DTF. When Q&A has copied the design, choose Copy Select Records, and specify the same database. Press F10 at the Retrieve Spec and again at the Merge Spec. All the records in the old database are copied to the new one. Return to the Main menu, and select Utilities / DOS File Facilities / Rename a File. Type the name of the original lookup database and press Enter. Type a new name for the damaged database, such as LOOKOLD.DTF, then press Enter. Select Rename a File again, and this time type the name of your copied file, LOOKBACK.DTF. Press Enter, type the original name of the database, then press Enter again. The lookup file should now be free of damage and be reliable.

Managing Memory Under Windows 95

I use Q&A 5.0 for DOS on my Windows 95 PC. I start Windows from the command prompt instead of having it start automatically. This way, my PC boots much faster, and I can get into Q&A without having to wait. However, when I try to use Page Preview with a merge document, I get an out of memory error. I've examined the System Information screen (press Crtl-F3 from the Main menu) while running Q&A under the two modes. In Windows, the Q&A column shows 128K of Expanded memory and no Extended Memory, and Page Preview works fine. In DOS, where Page Preview doesn't work, the Q&A column shows no Expanded memory and 33K of Extended memory. I suspect these values are crucial to solving the problem, but I don't know how to control them.

Walt Weaver, Lincoln, Nebraska

The amounts of Expanded and Extended memory available to Q&A are controlled by settings in the CONFIG.SYS file. It appears that having some Expanded memory is important for your mail merge Page Preview, and I suspect your CONFIG.SYS file includes a line like this:

```
DEVICE=C:\WIN95\EMM386.EXE NOEMS D=64
```

This line enables the Expanded Memory Manager, but specifies that no Expanded Memory (EMS) is to be created. Edit the file, removing the "NOEMS," and reboot your computer. When you start Q&A from the command prompt, it should allocate itself up to 128K of Expanded Memory. A word of caution, though: this change could affect the performance of your other programs. **QA**

[I've run a mix of memory-intensive procedures on a variety of PCs, and never received an out-of-memory message as long as Q&A 5.0 had at least 512K Conventional Memory along with 128K Expanded Memory and, for the Clipboard, 3K Extended Memory.—Ed.]

Dave Reid is the coauthor of *The Q&A 4.0 Wiley Command Reference*, published by John Wiley and Sons, and works as an independent Q&A consultant. PO Box 12083, Eugene, OR 97440.

Have a nagging question? Send it to ***@Help,** The Quick Answer, Marble Publications, Inc., PO Box 9034, Gaithersburg, MD 20898-9034* or fax to 301-424-1658. When writing, please include your name, address, and phone number, along with your Q&A version number (and whether DOS or Windows) and a detailed description of the problem. We will publish those questions we feel are of general reader interest; individual responses are not possible.

Quick Tip

CHome and Goto Differences

If the first field on your form contains an on-field-entry program, it *won't* execute if you use a *CHome* command in another field to move to it. If you move to it via a *Goto* command, however, it's program *will* execute.

Tom Marcellus

Quick Tip

Incomplete On-Screen Help

The on-screen help that appears in Write when you press F1 omits two reserved function key assignments: F9 to scroll the screen up and Shift-F9 to scroll it down.

David Dvorin, Phoenix Solutions, Somerville, New Jersey

Quick Tip

Change in Function Key Assignments

Q&A 5.0 changes the functionality of Alt-F9. In Q&A 4.0, Alt-F9 displays the Calculations Options box in Write, while in 5.0 it displays the External Programs menu. The Calculations Options box was changed to Alt-F8.

David Dvorin, Phoenix Solutions, Somerville, New Jersey

XPost Your Data—Post Haste

Jeff Nitka

By using XPost to save temporary variables, then retrieving them with @XLookup, you can free your database from the clutter of all those otherwise useless calculation fields.

IF I've developed a love-hate relationship with any Q&A command, it has to be 5.0's XPost. I love XPost's ability to post data on-the-fly, in real time, yet I shudder at the thought of losing data integrity should a post be performed in error. That's why I've come up with few ways to make XPost easier to live with.

Storing temporary variables

You can use XPost to store temporary values (variables) in an external database. This comes in handy when your programming requires several temporary fields for interim calculations and the like. Since the fields remain outside the file you're working in, you don't have to worry about them.

Any number of databases can access (XPost to, and XLookup from) the same external temporary variables database. Simply have one database store its temporary variables in one record, and have another database use a different record in the same file. It works even in a network environment.

To demonstrate the technique, let's use the factorial function—used in statistical calculations—symbolized in mathematics by the exclamation point. (For example, *4! = 4 * 3 * 2 * 1 = 24*). In this case, you enter a positive whole number in the X field, and the following program calculates X!, and returns the answer:

```
X: > X = @Abs(@Int(X));
     Rem "Ensures a whole number >= 0 ";

    If X < 2
    Then { @Msg(@Str(X) + "! = 1"); X=1; Goto X }
    Else { Rem "Stores X in two variables Numb & Fact";
           XPost("VAR.DTF", 1, "Page", X, "Numb");
           XPost("VAR.DTF", 1, "Page", X, "Fact");
           Iter = 1; GOSUB Iter;
           @Msg( @Str(X) + "! = "
               + @XLu("VAR.DTF", 1, "Page", "Fact"));
           X = @XLu("VAR.DTF", 1, "Page", "Fact");
               GoTo X }

Iter: < If Iter < @Tn( @XLu("VAR.DTF", 1, "Page",
           "Numb"))
     Then { XPost("VAR.DTF", 1, "Page",
           @Tn(@XLu("VAR.DTF",
           1, "Page", "Numb")) - Iter, "Fact", "MUL");
           Iter = Iter + 1; Goto Iter }
     Else RETURN
```

In the Iter (iteration) field's program, notice that XPost performs the *Fact = Fact * (Numb-Iter)* operation until the loop terminates. Also, the external Numb field stores the original value of X retrieved via XLookups. This way, you need only one local (current database) variable field (Iter), even though three fields are needed to perform the task.

Create a record and XPost to it on-the-fly

Using @Shell and XPost, you can have Q&A automatically create a record in an external database, then post to it in what appears to be a single seamless step.

Suppose you're entering data into a line-item-type invoice database. You want to create an external record for each line item so you can later run reports on sales by item or stock number. You've entered data for the first line-item. At this point, the cursor moves to a field containing a program like this:

```
< If   @AskUser("Do you want to make changes?","","")
  Then Goto Item1 else
  If   @AskUser("Post this line item?","","")
  Then {
         If     Item1 Ref = ""
         Then { REM "Create new record in SALES.DTF";
                Item1 Ref = @Shell("C:\QA5\QA.COM -m1");
         Item1 Ref = @XLr("Sales", 9999,"RecNo","RecNo") };

         If   Item1 Ref <> ""
         Then {
  XPost("Sales",Item1 Ref,"RecNo",Item1,"Item");
  XPost("Sales",Item1 Ref,"RecNo",Descrip1,"Item Desc");
  XPost("Sales",Item1 Ref,"RecNo",Qty Sold Item1,"Qty");
  XPost("Sales",Item1 Ref,"RecNo",Cost Item1,"Cost");
  XPost("Sales",Item1 Ref,"RecNo",ExtPrc Item1,"Ext Prc");
  XPost("Sales",Item1 Ref,"RecNo",Date,"Date");
  XPost("Sales",Item1 Ref,"RecNo",Cust No,"Cust No")
              };
         Goto Item2
       }
  Else Goto Item2
```

Here, if the Item1 Ref field is empty, it means that no data for this line-item has been posted to an external record. In this case, the @Shell command launches a second copy of Q&A, and invokes a simple autostart macro. The macro adds a record to SALES.DTF, where an on-entry programming statement uses @Number to assign the next record number to the RecNo field. The macro then saves the record and exits the second copy of Q&A, returning you to the invoice you were working on.

The new external record number is then retrieved into the Item1 Ref field, and the XPost commands posts the line-item data.

If Item1 Ref isn't empty, it tells the program that an external record for this line-item has already been created. In this case, the old data is simply overwritten with the new data (since the particular external record containing the data is referenced by Item1 Ref).

In an application like this, you should add code that offers opportunities to change XPosted data. Of course, if you post data for each line item, then neglect to save the invoice record, the posted data will probably be useless, and you'll have compromised data integrity. But if you can prevent that from happening without too much trouble, then XPost can prove an indispensable tool in your application strategy. **QA**

Jeff Nitka works for a chemical manufacturer and develops Q&A applications part-time for Epoch Software, 908-874-3989. Jeff is the author of the Program Evaluator, a Q&A program debugging utility available from Marble Publications.

[For more on auto-generating an external record to post to (for example, creating a new customer record during invoice entry), see "Automatically Create Records to Post To" in the March 1996 issue.—Ed.]

Available Function Keys for Macros

Most function-key combinations using Shift, Alt, and Ctrl are reserved by Q&A. The following are unreserved, and thus available for use as macro hot-key combinations:

```
Alt-F3
Alt-F4
Alt-F10
Ctrl-F10
Shift-F11
Alt-F11
Ctrl-F11
Shift-F12
Alt-F12
Ctrl-F12
```

David Dvorin, Phoenix Solutions, Somerville, New Jersey

Separate a Combined City, State, and ZIP Field into Component Fields

If you have a combined City, State, and ZIP code field, you might find it advantageous to have each component in its own separate field. This way you can easily search and sort on any of the three. Suppose you have the following arrangement ("CSZ" is the combined City, State, and ZIP code field):

```
CSZ: Corona del Mar CA 92655
```

You want to change it to this:

```
 City: Corona del Mar
State: CA
  Zip: 92655
```

Start by adding separate City, State, and Zip fields to your database, making them all text fields. Next, use the following program in the CSZ field to separate the components. The program works whether or not there's a comma after the city, whether the ZIP code is five or nine digits, and for Canadian addresses with three-character province abbreviations and no space in the postal code:

```
> CSZ   = @Replace(CSZ, "  ", " ");
  CSZ   = @Repllas(CSZ, " ", "|");
  CSZ   = @Repllas(CSZ, " ", "+");
  City  = @Left(CSZ, @Instr(CSZ, "+") -1);
  City  = @Replace(City, ",", "");
  State = @Mid(CSZ, @Instr(CSZ, "+") +1,
          @Instr(CSZ, "|") - @Instr(CSZ, "+") -1);
  Zip   = @Mid(CSZ, @Instr(CSZ, "|") +1 , 11);
  CSZ   = @Replace(CSZ, "|", " ");
  CSZ   = @Replace(CSZ, "+", " ")
```

The first line replaces any double-spaces (such as between the state and ZIP code) with a single space.

The second line replaces the space following the state (or province) with the pipe ("|") character. The third line replaces the space preceding the state with a plus sign ("+").

The fourth line copies the city to the new City field. The fifth line deletes any comma following the city.

The sixth, seventh, and eighth lines copy the state and ZIP code to their respective State and Zip fields.

The ninth and tenth lines restore the CSZ field.

To use this program for a Mass Update, simply replace the on-field-exit symbol (">") with *#1:* (pound sign, 1, colon).

Tom Marcellus

Report Retrieve Spec Glitch Finally Solved

Gordon Meigs

Do "garbage" characters appear in your report Retrieve Specs? Have you redesigned a database that contains saved reports? Do you ever use the Copy Design Only feature to copy a database's structure? If your answer to any of these questions is "Yes," you'd be wise to read on.

Q&A'S *Copy Design Only* feature has been a hot topic on the Symantec Q&A Forum on CompuServe in recent months. Messages with subjects such as "Bad Report Retrieve Specs" complain of high ASCII graphics characters ("lucky charms")—but sometimes column headers and even programming expressions—suddenly appearing in Q&A for DOS Report Retrieve Specs, usually in the last field. Though the problem has been variously attributed to Q&A 5.0, to using Q&A 5.0 on a network, or to running it in Windows, it has shown up in Q&A 4.0, and on standalone PCs running only DOS as well.

Anatomy of the glitch

The problem is caused by a bug in Q&A's File / Copy / Copy Design Only feature. When you redesign a Q&A database form to add, delete, or move fields, Q&A creates a "new generation" of the database. If you then create new reports, or redesign and resave existing reports, they become part of that latest generation. However, reports *not* redesigned or resaved following the database redesign are still of a "prior generation."

Now, if you use Copy Design Only on a database whose reports belong to two or more generations, you stand a chance that some or all of the reports belonging to generations prior to the latest will be corrupted with garbage "retrieval parameters" in the last field on the form. It has been reported that once this begins to happen, it "gets worse" or "spreads." Fortunately, that's not the case, but it can sometimes look that way.

Preventing the problem

There are two things you can do to prevent the problem from ever occurring. The following methods are practical for databases containing only a dozen or so reports:

- Immediately after you redesign a database, use Report / Design /Redesign a Report to resave each of your reports. This brings them up to the current generation. As you display each report's Retrieve Spec, check the last field to be sure it contains no garbage characters. If it does, delete them, and continue to press F10 until you've resaved the report. (You don't have to print it.)

- Before you use the Copy Design Only feature, bring each of your reports in the database up to the "current generation" by following the same steps as in the previous paragraph.

If you have a multitude of reports in the database, resaving each one to bring it up to the "current generation" can be a time-consuming process. Fortunately, there's an alternative.

A utility that can identify and fix affected reports

DTFSPECS, a Q&A database utility from John Dow (see the sidebar, "About DTFSPECS and DTFCHECK"), has been updated with two new features: one that checks your reports to see if they're the same generation as the database, and another that automates the process of bringing prior generation reports up to the latest generation of the database. How you use the utility to fix your reports depends on your case:

- Case 1. Your reports show no signs of being affected, but you've redesigned the database and at some point might want to use the Copy Design Only feature.

- Case 2. The database already contains some reports with garbage "retrieval parameters" in the last field.

Case 1: Steps to take before using Copy Design Only

Assuming the latest DTFSPECS update is installed, go to the DOS prompt in the directory where it's located, and enter *DFTSPECS filename.dtf macro*. Substitute for *filename.dtf* the complete path to the Q&A database file. The *macro* switch tells the utility to create macro files for your reports. With the utility running, select *R* for

Reports, and *A* for All, and it will create a macro file for the first 10 reports in the database (REPORTSA.MAC), another macro file for the next 10 reports (REPORTSB.MAC), and so on. Instead of the *RA* command, you can select *RW* to generate macros only on reports of the wrong Generation, or *RB* to generate macros only on existing corrupted reports. (See Case 2 below.)

If you add *D=path* to the end of the DTFSPECS command line (replacing *path* with the actual path), the utility saves the macro files to the specified directory. If you don't specify a path, the utility saves them to the directory specified by your PC's TEMP environmental variable, or to the directory from which you issued the DTFSPECS command if no TEMP variable exists. (You can

About DTFSPECS and DTFCHECK

DTFSPECS is available from John Dow (412-521-1577, Internet jtd@pgh.net, CompuServe 102701,2751) for $100, or $25 if upgrading from a previous version. In addition to providing valuable information about your Q&A databases (see the October 1995 issue for a review of DTFSPECS. See also "Create a Q&A Interface for DTFSPECS" in the July 1996 issue), the utility creates macros to regenerate Q&A reports (as you've seen), and even lets you copy report designs from one database to another database of similar design.

DTFCHECK, which comes with DTFSPECS and can be downloaded separately from the Q&A file library on CompuServe, flags bad report definitions. The latest version includes a "verbose" command line switch *(DTFCHECK filename.dtf verbose)* that displays additional information about a database's reports. The following excerpts are taken from DTFCHECK's "verbose" output on four variations of one database.

POLICY.DTF—a multiple generations database with good reports from several generations. DTFCHECK verbose (partial output) returned the following:

```
The current generation is 37
Generation   9 has   118 fields.
Generation  35 has   133 fields.
Generation  36 has   134 fields.
Generation  37 has   135 fields.
------------------------------------------
Checking report "Open Reminders"
The retrieve spec for this report has 134 fields
and is generation 36. The col spec for this report
has 134 fields and is generation 36
------------------------------------------
Checking report "Uncleared L"
The retrieve spec for this report has 135 fields
and is generation 37. The col spec for this report
has 135 fields and is generation 37
```

POLICYB.DTF—a Copy Design Only copy of POLICY.DTF. DTFCHECK reports it as a single-generation file, but the reports previously identified as generation 36 have been corrupted with faulty Retrieve Specs:

```
The current generation is 1
Generation  1  has  135 fields.
------------------------------------------
Checking report "Open Reminders"
The retrieve spec for this report has 135 fields
and is generation 1. ERROR: Last pointer inconsistent
with size, pointer=3D2F, size=286
------------------------------------------
Checking report "Uncleared L"
The retrieve spec for this report has 135 fields and
is generation 1. The col spec for this report has 135
fields and is generation 1
```

POLICYF.DTF—the POLICY database after re-creating all the reports using the macros generated by DTFSPECS. Note that while the file still reports several generations, all the reports are now of the latest generation (37). DTFCHECK verbose (partial output):

```
The current generation is 37
Generation   9 has   118 fields.
Generation  35 has   133 fields.
Generation  36 has   134 fields.
Generation  37 has   135 fields.
------------------------------------------
Checking report "Open Reminders"
The retrieve spec for this report has 135 fields
and is generation 37. The col spec for this report
has 135 fields and is generation 37
------------------------------------------
Checking report "Uncleared L"
The retrieve spec for this report has 135 fields
and is generation 37. The col spec for this report has
135 fields and is generation 37
```

POL-COPY.DTF—a Copy Design Only of POLICYF.DTF. Again, a single generation file, but this time, all the reports are okay. DTFCHECK verbose (partial output):

```
The current generation is 1
Generation   1 has   135 fields.
------------------------------------------
Checking report "Open Reminders"
The retrieve spec for this report has 135 fields and
is generation 1. The col spec for this report has 135
fields and is generation 1
------------------------------------------
Checking report "Uncleared L"
The retrieve spec for this report has 135 fields and
is generation 1. The col spec for this report has 135
fields and is generation 1
```

Since we first began examining this issue, John has modified DTFCHECK so it displays *WARNING: This report is not the current generation* for reports (such as the first one in POLICY) from earlier generations. This makes it even easier to spot potential trouble before it causes damage.

enter the *SET* command at any DOS prompt to display the system variables. Look for a line such as *TEMP=C:\WINDOWS\TEMP*.)

Exit DTFSPECS, and start Q&A. From the Main menu, select Reports / Design/Redesign a Report. Specify the name of the database, continue to the list of saved reports, then press Esc to return to the Report menu. (The macros generated by DTFSPECS expect a filename to be present.)

From the Report menu, press Shift-F2 for the macro menu, and choose Get Macros. Press the spacebar to clear the default macro filename (usually QAMACRO.ASC), then press Enter for Q&A's List Files screen. Navigate to the directory where the report macros are stored, and select the first one—REPORTSA.MAC.

With REPORTSA.MAC in memory, press Shift-F2 again, and select Run Macro. Select the macro named *Define all reports*, and it go to work re-creating the first 10 reports, bringing them up to the "current generation."

If you have more than 10 reports in the database, repeat the process by loading the other REPORTS*x*.MAC macro files (B, C, and so forth) and running them. When you're done, all the reports in the database will be of the current generation.

Now, you can use the Copy Design Only feature, and the reports in the copy should be 100 percent clean.

Case 2: Steps to take if Copy Design Only has already corrupted reports.

Proceed as in Case 1 up to the point where you start Q&A. Since there are "bad" reports in the database, there might now be "bad" macros in the report macro file(s) that DTFSPECS created. You'll need to examine each macro in Write, and remove the "bad" parts.

Since we first discovered this problem, John Dow has modified DTFSPECS to generate "clean" macros, but it's worth checking the macro files anyway since the "bad" spots are usually easy to spot. **Listing 1** shows examples of portions of a DTFSPECS-generated report macro file with several "bad" command strings shown in italics.

Listing 1. Report macros containing bad Retrieve Spec parameters.

```
<begdef><alt5><name>"Macro5"<vidoff>d<enter>list
<sp>by<sp>skills<sp>6/26<sp>test<f3>y<capsf4>list
<sp>by<sp>skills<sp>6/26<sp>test<enter>c
<ctrlf7><home><dn><home><f9><tab><tab><tab><tab>
<f6><caps.>1/1/95<f6><tab><f6>res<f6><pgdn><pgdn><pgdn>
<tab><tab>
<f6>************<sp><sp><sp><sp><sp><sp><sp><sp>
<sp><sp><sp><sp><sp><sp><sp><sp><sp><sp><sp><sp>
<sp><sp><sp><sp><sp><sp><sp><sp><sp><sp><sp><sp>
<sp><f6><f10>
<tab><tab><f6>10,AS,R,C,F(T,U)<f6><tab><tab>
<f6>30,AS,R,CS<f6>...

<begdef><alt7><name>"Macro7"<vidoff>d<enter>Next<sp>
Reminder<f3>y<capsf4>Next<sp>Reminder<enter>c
<ctrlf7><home><dn><home><f9><pgdn><pgdn><pgdn>
<tab><tab>
<f6>∑<f6><f10>
<tab><tab><tab><tab><f6>30,AS,I<f6><tab><tab>
<f6>20,AS,I<f6>...

<begdef><alt8><name>"Macro8"<vidoff>d<enter>Old<sp>
records<f3>y<capsf4>Old<sp>records<enter>c
<ctrlf7><home><dn><home><f9><tab><tab><tab><tab>
<f6><caps,>(@DATE-730)}<pgdn><pgdn><pgdn>
<tab><tab>
<f6>******O<f6><f10>
<tab><tab><tab><f6>10,AS,R<f6>...
```

When you design or redesign a report, the first spec to appear is the Retrieve Spec. So the first <f10> in the Listing 1 macros (at the ends of the italicized command strings) denotes the transition from the Retrieve Spec to the Column/Sort Spec. In the examples shown, just prior to the first <f10>, you'll see the command to expand the field (<f6>), and in some cases a series of asterisks, usually followed by a number of spaces (<sp>). Sometimes, though, another unwanted character or characters appear. (See Macro8.) The only "bad" report macro I've seen that *doesn't* contain the asterisks is Macro7, and it has a "lucky charm" between the two <f6> commands, which wouldn't be a valid retrieval parameter.

The important thing to look for, as in each of the Listing 1 macros just before the first <f10>, are "oddball" characters and commands.

To clean up the report macro files, delete the *<f6>****<f6>* commands before the first <f10>, along with any *<pgdn><pgdn><tab><tab>* commands preceding it. Then, resave the macro file to ASCII by pressing Ctrl-F8.

You can now switch to the Report module, and proceed as in Case 1. When you're done, you'll have a database with all reports of the same generation, and the Copy Design Only command will yield a clean copy with reports of the same generation.

Thanks to John Dow, Alec Mulvey, and Bill Halpern for the many hours they spent with me investigating the problem, and determining how to prevent and fix it. **QA**

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Who Are You, Anyway?

When designing or troubleshooting a password-protected multiuser system, it's easy to forget the User ID you used to log into Q&A. It's easy to set up a facility in Q&A that emulates Novell's "Whoami" utility. Here's how:

Create a new database—call it WHOAMI.DTF or just WHO.DTF—with these three fields:

```
You are User:  (Text)
        Date:  (Date)
        Time:  (Hours)
```

Add the following program to the You are User field:

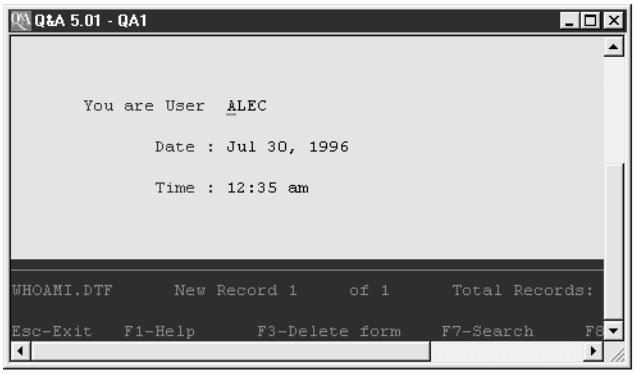
```
#10: You are User = @Userid;
Date = @Date; Time = @Time
```

Press F8 from the Program Spec, type 10 on the *On-entry-field* line, and press F10 to save.

When you open the database in Add Data mode, the form will show the User ID, date, and time. (See **Figure 1**.)

The on-record-entry program lets you press Esc to exit the database without the "Save changes" dialog box getting in your way. Any records inadvertently saved can be deleted at any time. You can create a macro to take you to this database in Add mode.

Alec Mulvey, Keyword Training, Ascot, England



```
      You are User  ALEC

               Date : Jul 30, 1996

               Time : 12:35 am

WHOAMI.DTF       New Record 1      of 1      Total Records:

Esc-Exit   F1-Help      F3-Delete form    F7-Search     F8
```

Figure 1. Supplementary database tells you who you are.

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