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Create a Power Clipboard

TOM MARCELLUS

When you need to quickly copy text to another document, database record, or Program Spec, you can do it without having to abandon the screen you're on.

Q&A 5.0's Clipboard makes it a snap to copy text, field contents, or programming code from one place to another. You simply press F11 to copy, and F12 to paste. But the simplicity ends if you want to paste elsewhere, then immediately return to the original document, Spec, or database record.

I often use the Clipboard to copy text—an address, document paragraph, block of juicy programming code, or the like—to paste at another screen. More often than not, I want to return to my original screen once I've pasted the text and resaved. To do this, I created a "Power Clipboard" to pass whatever I copy to the Clipboard of a second copy of Q&A. Once I've pasted the text in that second copy and resaved, I simply exit it and I'm back at my original screen.

You might find this trick useful, too, particularly when you need to copy and paste between documents or Program Specs, but don't want to have to save and exit the screen you're working on in order to do so.

The Power Clipboard won't interfere with the usual F11 and F12 copy and paste commands. It requires four small macros, a custom menu, an External Programs menu selection, and Auto-Execution (Utilities / Set Global Options) set to Yes. Follow these steps to create your Power Clipboard:

1. Select Write / Type/Edit, press Shift-F8, and save the blank document to the name CLIPBORD in your default Q&A documents subdirectory.

2. Create a custom menu (Shift-F2 / Create Menu) that matches the one shown in **Figure 1**.

3. Display your default macro file (probably QAMACRO.ASC) in Write, press Ctrl-End to move to the end of it, and type the following four macros:

```
*
<begdef><nokey><name>"Expanded"<vidoff><ctrlf5>
<wait><enter><f10<clipbord<enter>y<altf9>2<enddef>
*
<begdef><nokey><name>"Unexpanded"<vidoff><f6><ctrlf5>
<end><end><end><f10>clipbord<enter>y<f6><altf9>2<enddef>
*
<begdef><alt7><name>"<caps,>alt7<caps.>"<vidoff>
wgclipbord<enter><f11><end><end><end><end><f10><esc>
<esc><enddef>
*
<begdef><capsf11><name>"<caps,>capsf11<caps.>"<vidon><menu>
"*2nd<sp>Copy<sp>Q&A<sp>Clipboard"<enddef>
```

You'll use the *Expanded* macro to copy text you select in a Write document or the Field Editor, and the *Unexpanded* macro to copy the contents of an unexpanded database field.

Continues on page 3

They Came, Saw, and Conquered

TOM MARCELLUS, EDITOR

OVER the October 18 weekend, Q&A aficionados from as far away as England and South Africa gathered in Colorado Springs for *The Quick Answer*'s Q&A Master Seminar and National Q&A User Group's Sixth Annual Bash. We had a ball.

Attendees, for the most part, were in-house developers with companies running or planning to run Q&A 5.0—and in Windows, to boot. Yes, they like Windows programs for some tasks. But no, they aren't about to entrust their data to anything but Q&A for DOS. Everyone I spoke with echoed the same sentiment: "We love managing our information with Q&A. No other database manager can match its flexibility, reliability, and ease-of-use. We're sticking with it"

Some came seeking advice on specific data management issues. We answered their questions. Others, eager to beef up their applications, came to learn tricks and advanced techniques. We made sure they went home with plenty. And we did something else. We hired a professional to videotape the presentations so *you*, like attendees at the Seminar and Bash, can take advantage of all the tricks, techniques, and solutions the Q&A masters demonstrated on the big screen. See the insert for details.

You can use Q&A 5.0's Clipboard to copy and paste text, field contents, or programming code, but you can't pass any of this to a second copy of Q&A. Why would you want to? And how can you beat the limitation? Check out my Power Clipboard.

Have you been hearing stories about databases giving wrong answers with dates beyond 1999? **Frans Schachtschabel** from Symantec's European Q&A Technical Support Group tells you how to make sure your Q&A database doesn't.

If you distribute databases to PCs with different drive and directory structures, you should be aware of a Q&A 5.0 glitch. Developer **David Cook** describes the problem and solution.

January isn't far off, and you've vowed to automate the preparation of your IRS 1099 forms. Find out how **Steve Miller** does it.

In the September issue ("How to Save Money on Mass Mailings") I didn't mention commercially available soft fonts that convert ZIP codes to barcodes. Why not?—because fonts can't calculate the delivery point code and check digit required to generate a full postal barcode. Well, since then, I developed a Q&A program that performs these steps, so you can barcode your envelopes and labels with just a font after all. See page 11. **QA**

Create a Power Clipboard . . .

The Alt-7 macro must be an Alt-*number* macro so Q&A can invoke it on start-up of the second copy of Q&A. If you have an existing Alt-7 macro, choose another number (0 through 9) for this one.

The "capsf11" (Shift-F11) macro calls the custom menu you created in step 2. Shift-F11 is easy for me to remember because it represents a "higher power" of F11, Q&A's usual Copy-to-Clipboard key. (Shift-F11 normally displays a list of bitmap image files in a database. If you're not using this feature, there's no harm in redefining Shift-F11. Otherwise, choose another key identifier for this macro.)

When you've typed the four macros, press Ctrl-F8 to resave the file, then press Shift-F2, G, and Enter.

4. From the Main menu, select Utilities / External Programs. In the Menu Option column, type *2nd Copy Q&A Clipboard*. (It must be the only Menu Option that begins with the number 2. See **Figure 2**.) On the adjacent Command Line, type *C:\QA\QA.COM -m7*. Specify the actual path to your QA.COM file, and change the *7* in *-m7* to the number of the Alt-*n* macro you added to the macro file.

Testing the macros

To test your new Power Clipboard, display any document in Write. Move to the beginning of the text you want to copy to the second copy of Q&A, and press Shift-F11 to display your *Copy to Clipboard* custom menu.

Select *Expanded field or Doc*, or just press Enter since it's the first item on the menu. Use the cursor keys or your mouse to highlight the text you want to copy, then press Enter.

Other Text Copying Commands

F11—Q&A 5.0's standard Copy to Clipboard key. When you press F11 in a document or expanded field, you must select the text to copy, then press F10 to place it in the Clipboard. If you press F11 from an *un*expanded database field, Q&A copies the entire field's contents to the Clipboard. You can't pass the Clipboard's contents to a second copy of Q&A, and you must save and exit the current screen to paste the text elsewhere in Q&A.

F5—Copies selected text to another location in the same document or expanded field. (You can press Shift-F7 multiple times to paste multiple copies of the copied text.) Once you exit the document or expanded field, the contents of the F5 Clipboard are lost.

Shift-F5—Copies selected text in a document or expanded field to a filename you specify. If the file already exists, Q&A gives you the option to overwrite it.

The next thing you'll see is the second copy of Q&A's Main menu. What you didn't see is that the text you copied from the document is now in the second copy of Q&A's Clipboard. Confirm this by selecting Write / Type/Edit in the second copy, and pressing F12 to paste the text.

Exit the second copy of Q&A, and you'll be back at your original screen.

Next, test the *Unexpanded* macro. Display a database record—any record will do. Move to any text field, press

---

Figure 1. A custom menu for use when copying selected text or a field's contents to the second copy of Q&A's Clipboard. (Q&A is running here under Windows 95.)

Figure 2. Q&A 5.0's External Programs menu. Be sure the 2nd Copy Q&A Clipboard (the last entry on this screen) is the only entry that begins with "2."

A Remedy for a Q&A 5.0 Lothere

A Remedy for a Q&A 5.0 Lookup Glitch

DAVID COOK

If the database you're developing will be distributed to other PCs with different drive and directory structures, you'll probably want to avoid hard-coding specific paths to external databases. With Q&A 5.0, you'll need a special technique.

A client of mine owns a trash hauling company and uses Q&A extensively. While upgrading his system from Q&A 4.0 to 5.0, I discovered a problem with the new XUserselect command.

Here's XUserselect's syntax:

```
XUserselect("Filename", "Ext Key Field", Target field)
```

Filename is the name of the external database that contains the information for the pick-list; *Ext Key Field* is the name of the external database's Speedy field whose values you want on the pick-list; *Target Field* is the name of the field in the current record where you want the user-selected value placed.

The problem is with the filename. If you provide the complete path to the file, like this, the command works properly:

```
"C:\QA5\DATA\TABLES\ROUTE.DTF"
```

Or, if ROUTE.DTF is stored in the default database directory you've established at the Global Options screen, then the XUserselect *Filename* parameter can simply be *"ROUTE"* or *"ROUTE.DTF"* (with the quote marks).

Suppose, though, that you want to provide a partial path, such as *TABLES\ROUTE.DTF*. In this case, Q&A 5.0 won't recognize the filename even though the TABLES subdirectory is directly under the default DATA subdirectory. You'll receive an error message telling you that Q&A can't find the file.

But why is this a problem?

My client's application uses a host of different codes. Codes exist for neighborhoods, account statuses, routes, types of services, drivers, trucks, and the list goes on and on. Rather than place all these codes in a lookup table where they'd be difficult to edit and consume memory,

we decided to create a unique lookup database for each code group—one for neighborhoods, one for account statuses, routes, and so forth. Each of these lookup databases contains fields for the code, its description, and in some cases effective dates. To keep these lookup-only databases separate from the regular application databases, we decided to store them in a TABLES subdirectory underneath the default DATA directory.

For these lookup databases, I could have supplied the entire path in the XUserselect statement, like this:

```
XUserselect("C:\QA5\DATA\TABLES\ROUTE.DTF", "ROUTE#", #20)
```

The problem with hard-coding the path into the statement was that my client's directory structure differed from my computer where all the development took place.

To work around the problem, I placed the TABLES subdirectory in the default path for Q&A database files. This way I could develop the lookup databases on my computer in C:\QA5\DATA\TABLES\, while my client could store the finished databases in D:\DATA\DISPOSAL\TABLES\.

C:\ (Root)


```
C:\DOS\

C:\QA5\

    C:\QA5\DATA\          Default database
                          subdirectory from
                          Global Options

      C:\QA5\DATA\TABLES\
                          Subdirectory under
                          default DATA directory

C:\QA5\DATA\TABLES\DBNAME.DTF
                          External filename reference
                          can be "TABLES/DBNAME"
                          using forward slash character
```
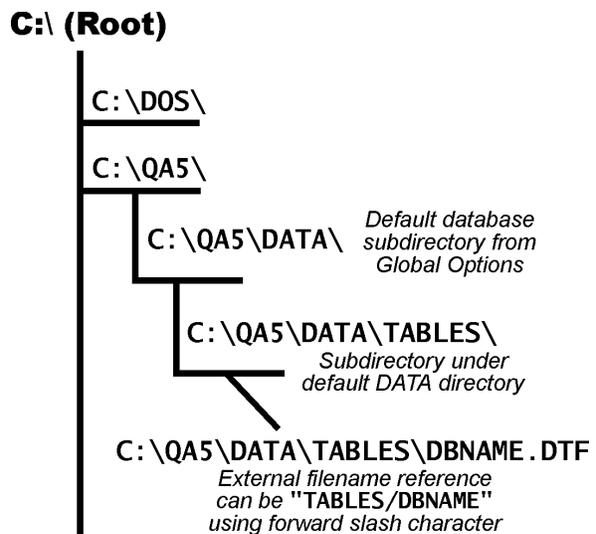
Figure 1. A Q&A 5.0 oddity. The usual backslash between the subdirectory and filename doesn't work. You need a forward slash.

Q&A Dates and the 21st Century

FRANS SCHACHTSCHABEL

As the year 2000 approaches, more people discover that the software programs they're using aren't equipped to deal intelligently with dates beyond 1999. What about Q&A?

WHAT impact will the forthcoming turn of the century (the year 2000) have on date-related data, date programming, and date settings in Q&A databases? Following are the major issues along with some suggestions on how to address them.

How Q&A stores dates

Q&A stores dates (in Date-formatted fields) internally as text in a YYYY/MM/DD format. So, if a valid date has been entered into a date field, Q&A will store it correctly. This means that as long as a full year format (such as YYYY/MM/DD, MM/DD/YYYY, or DD/MM/YYYY) was specified for the database at the Global Format Options screen, you shouldn't experience any problem with dates and date calculations at the turn of the century.

Abbreviated date formats could mean trouble ahead

On the other hand, date formats with abbreviated years (such as MM/DD/YY, YY/MM/DD, or DD/MM/YY) will work as expected only through the end of the 20th century—that is, from 1900 to 1999. If, on January 1, 2000, you enter a date such as 0l-01-00, Q&A will treat it as 01-01-1900 instead of 01-01-2000. If your database uses such an abbreviated format, you'll need to change its global date format to a full year format.

In combination with what I've already described, in some cases not only must the global date format of the database be changed, but most likely any date-related programming statements (Xlookups, for example, and perhaps even Lookups, if these refer to abbreviated year formats or the Lookup Table contains abbreviated years).

For historians and Trekkies only

Q&A has other limits. We ran some tests, subtracting the years of two dates (in Date1 and Date2 fields), and placing the result in a Difference (number) field. Here are the fields and program:

```
Date1: #10  (Date format DD.MM.YYYY)

Date2: #20  (Date format DD.MM.YYYY)

Difference: <#30: #30 = @Year(#10) - @Year(#20)
```

For years before 1600 or after 4080, Q&A won't accept the year value. (We tested this using the German F&A 4.0 and the English Q&A 5.0.)

Moreover, the Q&A 5.0 developers told us that certain programming statements involving dates and times are operated on internally by Q&A using an algorithm that will begin to fail on dates in the year 2200 and later.

Conclusion

The forthcoming turn of the century won't cause a loss or corruption of dates because, as I mentioned earlier, Q&A saves all valid dates in the full YYYY/MM/DD format. However, you should check your databases and change their global date formats as necessary. You should also check any date-related field masks, programming statements, and lookup tables, along with your report designs and other specs, and change any abbreviated year formats to one of the full year formats. **QA**

Frans Schachtschabel supervises the Q&A Technical Support Group at the Symantec European Technical Support Center in Leiden, The Netherlands. 31-71-535-3111, Fax 31-71-535-3153

Now What was That Field Name?

Sometimes, particularly when programming a database, you need to know a field's name as opposed to its label on the form. To find out, move to the field, press F6 to expand it, and the field name appears under the bottom left-hand corner of the window. Only the first 12 characters of the field name appear, and this won't work with date fields as they can't be expanded. **QA**

Alec Mulvey, Keyword Training, Ascot, England

Playing the Percentages

Jeff Nitka

ONE of my clients has an inventory database that includes fields for on-hand quantity and cost. He wanted to be able to enter an item number and have Q&A calculate its percentage of the total inventory in terms of quantity and cost. I devised two methods for this task, one for small databases with hundreds of records, and another for large databases with thousands of records. Since the small database approach involves the Program Spec, that's the one I'll discuss.

Instead of performing the calculations in the inventory database, I created a database just for this purpose, and programmed it with a looping routine that calculates the total inventory quantity and cost from the on-hand quantity and cost in each record. (Each record in the inventory database has a unique numeric record number in the RecNo field.) Once these two values are obtained, I prompt for the item to display as a percentage of the entire inventory. **Listing 1** shows the program that does it:

Listing 1. A program that calculates the total quantity and cost of the inventory, then determines the percentage an individual item constitutes with respect to them.

```
Start:
<  If @Askuser("Total all records in INVENTRY.DTF?",
          "","")
   Then { Rec = 99999; Total Qty = 0; Total Value = 0;
          Goto Total }
   Else @Exit

Total:
< XLR("INVENTRY", Rec, "RecNo", "Qty on Hand", Temp Qty,
      "Value", Temp Value, "RecNo", Rec);

   If   Not @Error
   Then { Total Qty = Total Qty + Temp Qty;
          Total Value = Total Value + Temp Value;
          Rec = Rec - 1; Goto Total }
   Else { @Msg("Enter the Item Number"); Goto Prompt }

Prompt:
> XLU("INVENTRY", Prompt, "Item No", "Qty on Hand",
      Temp Qty, "Value", Temp Value);

   If   Not @Error
   Then { @Msgbox(Prompt + " comprises",
          @Str(@Round(100 * Temp Qty / Total Qty, 2)) +
          "% Total Qty," ,
```

```
          @Str(@Round(100 * Temp Value / Total Value, 2))
          + "% Total Value"); Goto Prompt }
   Else { @Msgbox(Prompt +
          " is not in INVENTRY.DTF","",""); Goto Prompt }
```

Add a Status Bar

Installation and backup software typically display a status bar or progress meter that graphically depicts the percentage completion of the operation in progress. If you know how to program a loop, you can display an informative status bar while the loop is executing. (If the loop terminates in less than a second, don't bother.) In the Design Spec, a status bar might look like this:

```
 ┌─── Percent Complete  <    > ───────────────────┐
 <                                                 >
 └─ 0 ──────── 25 ──────── 50 ──────── 75 ──────── 100 ┘
```

The two fields are Percent Complete (a right-justified Number field), and Bar (a 50-character Text field).

For a status bar to work, the program needs to know when the loop will terminate. For example, in my Program Evaluator, the main loop processes each character in the known length of the program, using @Len(Program) to obtain the length. Similarly, if Tom Marcellus' Tune-o-Matic database (TUNES.DTF) showed you the progress of a tune being played, the status bar would grow as each @Play command in the tune sequence were called. Let's use this as an example.

Suppose the TUNES database contained 100 fields (Field ID numbers #1 through #100) to store the frequency and duration values of the tune's sequence. Tom's program could determine that the tune you've composed requires 35 @Play commands (fields #1 through #35 would contain the frequency and duration values), so he stores 35 in a field named Total and initializes another field called Ptr (pointer), setting it to 1. The loop and updating of the status bar are then a fairly straightforward proposition:

```
Ptr:
>  Rem "Total has been determined."; Ptr = 1; Goto Bar

Bar:
<  @Play("Sound", @(Ptr));
   Percent Complete = @Int(Ptr * 100 / Total);
   Bar = @Txt(@Int(Percent Complete / 2),"▓") +
         @Txt(50 - @Int(Percent Complete / 2),"°");
   Ptr = Ptr + 1;
   if Ptr > Total then Goto Escape else Goto Bar
```

@Help

Make Install Printer Screen Inaccessible

Using Utilities / Install Printer, I carefully installed and configured all the printers on the computers in my office. (Each PC is configured differently.) In the past, users have accessed the Install Printer facilities and changed their settings, causing problems. Is there a way I can password protect this part of Q&A?

Joe Gruen, Denver, Colorado

You can't password protect Q&A's Install Printer facilities, but you can remove the option from their menu systems by creating a custom replacement Utilities menu. To begin, press Shift-F2 to display the Macro menu, and select Create Menu. Select New Menu from the list of Menu Names, press Enter, and the Application Menu Options screen appears. The first setting, Menu Name, is the most crucial. To replace Q&A's built-in Utilities menu, your new menu must be named *Utilities Menu*. (You can press Alt-F7 and select *Utilities Menu* from the list of menus.) After setting the Menu Name, set the following options:

```
Display..............: Full Screen
Status...............: Active
Menu Returns.........: No
On Escape, Show Menu.: (leave blank)
```

Use the rest of the Applications Menu Options screen to create your replacement menu. You'll need to replace all the options from the Q&A Utilities menu except Install Printer, which you'll simply exclude. Fill out the rest of the screen like this:

```
Menu Title: Utilities Menu

Item 1: M - Modify font file    Macro Name: M
Item 2: D - DOS file facility   Macro Name: D
Item 3: S - Set global options  Macro Name: S
Item 4: A - Set alternate pgms  Macro Name: A
```

Some of the Item names slightly abbreviated, but their purposes are clear. The Macro Names are the letters that activate the various options on the standard Q&A Utilities menu. Press F10 to continue, and Q&A prompts you to save your changes to your macro file (probably QAMACRO.ASC). Press Enter to save the new menu. The next time a user on this PC displays the Utilities menu, he

or she will see your replacement menu and won't be able to access the Install Printer screen. To turn your custom replacement menu off and reactivate the original Utilities menu, press Shift-F2, select Create Menu, choose the Utilities Menu from the list, set the status to *Inactive*, and press F10 then Enter to save the change. If you perform these steps on each PC, no one but you will be able to modify your Install Printer settings.

Make Auto-Filled Fields Distinct

I create Q&A databases for a variety of clients and use programming to auto-fill certain fields and bypass them during data entry. However, users can still back into these fields, which can be confusing for them. I'd like a way to prevent the cursor from entering these fields and, if possible, set them apart from the rest of the screen so users can tell they're auto-filled.

Michelle Bombet, Santa Rosa, California

You're currently using cursor navigation statements such as CNext and Goto #22, which as you know, work only when the cursor moves into or out of the field that contains the navigation command. To have the cursor unconditionally skip a field, make the field read-only. From the Q&A Main menu, select File / Design a File / Program a File. Enter the name of the database, and select Read-Only Fields. At the Read-Only Fields Spec, type an "R" in each field you want to make inaccessible, then press F10 to save the Spec. This way, Q&A won't allow the cursor to be placed in these fields during Add Date or Search/Update, though they'll still be searchable via the Retrieve Spec.

If you're using Q&A 5.0, you can optionally color-code these read-only fields so users will know they're different. From the Design menu, select Customize a File, enter the same database name, and select Change Palette. Navigate to the first of your Read-only fields, and press F6 to select Field Colors. The standard Q&A field color is White text on a Blue background. You can select any combination of colors for each individual field, but don't turn the form into an eyesore with a rainbow of colors. Q&A's standard Q&A field label color is Blue text on a White background. I like this combination for Read-only fields because users already know it means non-editable. To select this combination, highlight Text

Color, and press Alt-F7 to display the list of colors. Select Blue, and press Enter. (Make sure *Light* is set to No.) Next, highlight Background Color, and press Alt-F7. Select White, and press Enter. Press F10, and repeat these steps for each Read-only field. When you're finished, press F10 to save the Spec. **QA**

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.

Playing the Percentages . . .

The reason I couldn't add a status bar to my inventory calculation discussed earlier is because the loop in the Total field has no way of knowing when it will terminate. Termination depends on the XLR statement returning a "Yes" to @Error. **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.

[To display a progress meter on the message line (rather than on the database form), see Dave Dvorin's "Loops, Arrays, and Bubble Sorting" in the June 1995 The Quick Answer, *particularly the sidebar on page 7—Ed.]*

Create a Power Clipboard . . .

Shift-F11, select *Unexpanded*, and the next thing you'll see is Q&A copy two's Main menu.

Notes on usage

Using your Power Clipboard, whatever you've copied to the second copy of Q&A's Clipboard is also in the CLIPBORD file, where it will remain until you use the Power Clipboard again. This gives you a way to save a variable to disk that you can recall later (using the F8 / Document / Insert command) in either copy of Q&A.

When using your Power Clipboard in a database record, select only *Text* or *Keyword* fields for copying. The Field Editor isn't accessible in Date, Number, Money, and Hours fields, and the copy macros could run amok and alter existing data. **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.*

A Remedy for Q&A 5.0 . . .

Using this logic, you'd think you could structure the XUserselect statement like this:

```
XUserselect("TABLES\ROUTE.DTF", "ROUTE#", #20)
```

But you can't, because Q&A won't recognize the path to ROUTE.DTF, as I explained earlier.

The solution is pretty wild. Instead of the backslash character, you must use the *forward* slash, like this:

```
XUserselect("TABLES/ROUTE.DTF", "ROUTE#", #20)
```

Only then will Q&A 5.0 recognize the path to ROUTE.DTF (see **Figure 1**). This holds true for all the XLookup and XUserselect commands, and probably the XPost command as well.

A Symantec Q&A tech support analyst suggested this oddity might be because Q&A 5.0 was developed in Germany, and the people who developed the American version simply overlooked this.

Whatever the case, here's the solution to the problem of distributing programmed databases that might wind up residing in a directory different from the one in which they were created. **QA**

David Cook is a senior data analyst for University Hospital in Augusta, Georgia, and has been working with Q&A for the past six years. He designs custom Q&A database applications part time as an independent consultant. 706-855-2237.

Print 1099 Forms the Easy Way

STEVE MILLER

In a another couple of months you'll have to start thinking about those cursed 1099's again. If you store your payor data in a Q&A database, use these tricks to help take the pain out of preparing the forms.

THE November 1995 issue of *The Quick Answer* contained a brief tip on using Q&A's File / Print Coordinate printing method to print the 1099 forms the IRS requires from all payors. Though this method works, you can run into problems because each 1099 form is laid out differently, and at least one field—the one where you enter the amount paid—is in a different location on the Dividends, Interest, Rents, Miscellaneous Income, and other forms.

If your company or client uses more than one of these forms, an easier way to prepare your 1099s is to create a Write document for each of them, and merge them with the information from your database. I've been doing it this way in Q&A for DOS for the past four years with great success.

Whether you print from File or Write, the first step is to create the database. You'll need at least the following fields:

```
Payor:
Payors Fed. ID#:
Payors Address:
Payors City/Zip:
Payee:
Payee ID #:
Payee Address:
Payee City/Zip:
Rents:
Dividends:
Interest:
Other:
```

If you make other types of payments, or deduct withholding, you'll need to add fields for these items as well. The important thing is to make sure that every item of data you'll need on any of the 1099 forms has a corresponding field in the database.

The next step is to add the data to the database. Much of it, such as the payor and payee identifying information, can be used from year to year without any changes. If you're dealing with just one payor, then you won't need it in the database at all.

Create the merge documents

Once you've added the records to the database, create a Write merge document to tell Q&A and the printer where to print each field on the form. I buy blank 1099 forms at a local stationery supplier. They come 3-up on a page on continuous tractor-fed stock designed for dot matrix printers. The forms are carbonless, and make three or four copies. Several types of 1099 forms are available, so when you purchase yours, be sure you get the right ones.

My merge document for the Dividend forms, named 1099DIVI.MRG, is laid out like **Figure 1**.

Printing the forms

Because the blank forms come 3-up on an 8-1/2 x 11-inch page, each form is 22 lines high. You can take a ruler and estimate where the data will print on the page, then place each field in approximately that location in the merge document. With a little trial and error, you'll get them right.

One of the secrets to successfully printing your forms is to use a monospace font such as 10 cpi Courier. This way, if you know that a field has to be printed four inches from the left margin and one inch from the top of the form, you can place it on line 7, 40 spaces from the margin. There are ways to make the process work with proportional fonts, but it requires a more complex setup. You can obtain 1099 forms designed for a laser or ink jet printer, but the number of copies required (federal, state,
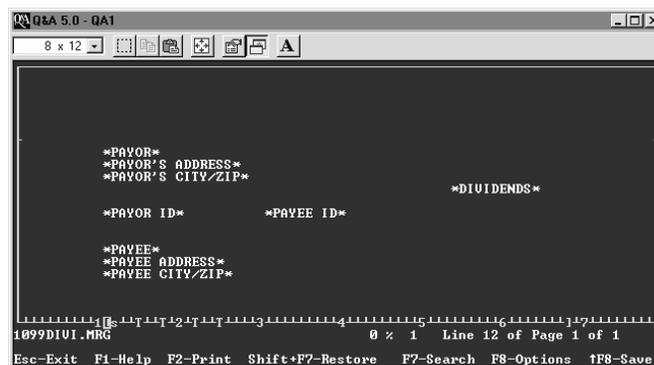

Figure 1. Sample merge document layout for a 1099 Dividend form.

payor, payee) just makes the process more difficult, so I stick to multi-part continuous feed forms.

Creating the other merge documents

The merge document you create for Dividends can be modified slightly for the other 1099 categories, such as Rents, then saved under different file names, such as 1099RENT.MRG. For each merge document, enter the name of your database on the *Name of merge file* line at the Print Options screen the first time you print, and set *Type of paper feed* to Continuous. Then press Ctrl-F6 for Define Page, and enter these settings (the correct Page length and Characters per inch settings are crucial):

```
Left margin: 04               Right margin: 75
Top margin: 05                Bottom margin: 4
Page width: 80                Page length:  22
Characters per inch..........10
```

When you're ready to print

Four-part 1099 forms can be very thick, so before attempting to feed them though your printer, set its impression control to the lightest possible setting, or set the single/multiple copies switch or lever to multiple copies. This moves the print head away from the platen, leaving enough room for the bulky forms to properly feed. Try printing on the lightest setting first. If you set the printer for a heavier impression, it might jam. Print a few forms on plain paper to begin with. This way you won't waste expensive forms while you're tweaking your printing coordinates.

Proper placement of the blank forms in the printer is crucial. Once everything seems to be working correctly, insert the forms and print a test document. When you find a paper position that works well, make a note about how to position the top of the form in relationship to a mark or reference point on your printer so you can set everything up the same way the next time. You do this procedure only once a year, so be sure to make notes and store them where you can find them a year from now.

If any of the forms has an error and needs to be reprinted, don't separate it from the others in the group that go to the state tax board or the IRS; just put an "X" in the box at the top of each form that says VOID.

This procedure can take time to set up, but it sure beats typing hundreds of 1099s each year by hand. **QA**

Steve Miller is manager of taxes and insurance for Lee & Keiter Development Company in Beverly Hills, California.

Quick Tip

Got Enough Room to Copy That Database? DOS

Before undertaking a File / Copy Design followed by a File / Copy Selected Records, be sure you have enough disk space. If you're copying most or all of the records, add the sizes of the existing .DTF and .IDX files (Q&A's List Files screen shows the sizes in bytes), multiply that sum by *three*, and that's how much free disk space Q&A needs to perform the task. (The difference is for the temporary file that Q&A needs to create.)

If you're on a network, and copying a database along with selected records, use a local hard disk. You'll find it's much quicker than doing it across the network. **QA**

Alec Mulvey, Keyword Trainning, Ascot, England

Quick Tip

Get Faster XLookups Using a Q&A Quirk DOS WIN

To retrieve multiple values from a customer record for an invoice, for example, you might use a single XLookup (XLu) command this way:

```
>#10: XLu("Customer", #10, "Customer ID",
     "First Name", #20, "Last Name", #30,
     "Address", #40, "City", #50, "State", #60,
     "Zip", #70)
```

To our amazement, we recently discovered a 30-percent increase in lookup speed by replacing this single XLookup statement with the following multiple @XLookup (@XLu) functions:

```
>#10:#20=@XLu("Customer",#10,"Customer ID","First Name");
     #30=@XLu("Cutomer",#10,"Customer ID","Last Name");
     #40=@XLu("Customer",#10,"Customer ID","Address");
     #50=@XLu("Customer",#10,"Customer ID","City");
     #60=@XLu("Customer",#10,"Customer ID","State");
     #70=@XLu("Customer",#10,"Customer ID","Zip")
```

It might not make sense, but it works. The performance increase is particularly noticeable over a network. Before you go changing all your multi-value XLookups to @XLookups, though, run some tests of your own to compare the two methods. **QA**

Gordon Meigs, PCTA, Newtown, Pennsylvania

Easy Postal Barcoding for Your Labels and Envelopes

Tom Marcellus

Want your mail to travel faster and less expensively? New findings from The Quick Answer labs show that a simple barcoding font can do the job.

IN the September issue ("How to Save Money on Mass Mailings") I recommended Bar Lite—a terminate and stay resident (TSR) utility—for printing postal barcodes on mailing labels and envelopes. I didn't mention fonts that convert ZIP codes to postal barcodes because, unlike Bar Lite, fonts can't calculate the delivery point code and check digit needed to generate a full postal barcode. (See the sidebar, "What's a Delivery Point Barcode?")

On the one hand, you have a TSR that consumes 45K of precious memory, requires a setup procedure, has to be loaded and unloaded, and won't work if you're running Q&A for DOS in Windows. On the other, you have an easy-to-use font that can't produce a full delivery point barcode. If only you could merge the advantages of both into a single convenient solution.

You can. All you need is a Q&A program that extracts the delivery point code from the street address and calculates the check digit. Then, you can use a simple font to generate a full delivery point barcode for any address. I'll show you how.

Generating a barcode string

Before a barcode font is of any use, you must generate the barcode string. By *barcode string*, I mean the series of digits (the ZIP+4, the DPC, and the check digit) framed by a special character that designates the starting and ending frame bars. When you "enhance" such a string with a USPS-approved barcode font, the font converts it to a barcode in the printer.

The Q&A program shown in **Listing 1** calculates the DPC and check digit, generating a barcode string that accommodates a commercially available barcode font I'll tell you about later. The program requires a field named *Barcode*, a valid street address or PO Box number (in a field named *Address*), and a nine-digit ZIP+4 ZIP code (in a field named *Zip4*) that can include a dash between the fifth and sixth digits. (See my article in the September

issue to find out how to obtain ZIP+4 ZIP codes for your addresses.)

Listing 1. A program for the Zip4 field that generates a barcode string for the Barcode field. Substitute your own field names.

```
> If Address <> "" and @Len(@Num(Zip4)) = 9
  Then {

  Rem"*******************************
      Is it a PO Box or Street address?
      *******************************";

  If @Instr(Address, " Box ") Then
  Barcode = @Num(Zip4) + @Rt(Address, 2)
  Else Barcode = @Num(Zip4) +
  @Rt(@Num(@Lt(Address, @Instr(Address, " ") -1)), 2);

  Rem "*********************************
      Is address or PO Box a single digit?
      *********************************";

  If @Len(Barcode) = 10 Then
  Barcode = @Lt(Barcode, 9) + "0" + @Rt(Barcode, 1);

  Rem "**********************
      Calculate the Checksum
      **********************";

  Barcode = Barcode +
  @Str(@Sum(@Lt(Barcode, 1), @Mid(Barcode, 2, 1),
  @Mid(Barcode, 3, 1), @Mid(Barcode, 4, 1),
  @Mid(Barcode, 5, 1), @Mid(Barcode, 6, 1),
  @Mid(Barcode, 7, 1), @Mid(Barcode, 8, 1),
  @Mid(Barcode, 9, 1), @Mid(Barcode, 10, 1),
  @Rt(Barcode, 1)));

  Rem "*******************************
      Calculate & add the Check Digit
      *******************************";

  If @Rt(Barcode, 1) = "0" Then Barcode =
  @Left(Barcode, 12) Else
  Barcode = @Left(Barcode, 11) +
  @Str(10 - @Mod(@Rt(Barcode, 2), 10));

  Rem "******************************
      Add barcode frame bars for font
      ******************************";

  Barcode = "(" + Barcode + "("

  }

  Else { @Msg("Bad address or Zip not 9 digits");
      Goto Address }
```

How the program works

The Listing 1 program begins by making sure the Address field isn't blank and the Zip4 field contains nine-digits.

It next determines if the Address field contains a street address or PO Box number. If it's a PO Box, the DPC

is the last two digits of the box number; otherwise, it's the last two digits of the street number. If the street or PO Box number is a single digit—such as PO Box 9 or 1 Long Ridge Road—the program makes it two digits by padding it with a leading 0 (zero).

The program fills the Barcode field with the ZIP+4 and DPC.

Next, the two-digit checksum—the sum of the 11 digits—is calculated and tacked onto the end of the Barcode value. The check digit is then derived from the checksum. If the checksum is evenly divisible by 10, the final zero is dropped leaving the check digit as the last digit of the string. Otherwise, the modulus 10 (@Mod) of the checksum is calculated and subtracted from 10 to get the check digit. Either way, the Barcode fields wind up containing a 12-digit string.

The Postnet barcode font I'll describe later uses the left parenthesis to create the frame bars, so the program adds one to the beginning and end of the Barcode string, generating a final 14-character Barcode value in this format:

`(929272675275(`

You now have a merge field you can enhance with the barcode font to print a full delivery point barcode.

If you standardize your addresses through the Post Office or a commercial address standardization service, you get the ZIP+4 ZIP codes and DPCs as part of the package. (See my article in the September issue.) However, you'll still have to use the check digit calculation portion of the Listing 1 program.

You can optionally use the Listing 1 program to Mass Update a database containing ZIP+4 ZIP codes. Simply replace the "<" on-field-entry code with "#1:" (pound sign, 1, colon), and have the Else portion of the program mark a field with an "X" so you can flag records containing an unworkable address or ZIP code.

"Fonting" the barcode string

Once your database includes the strings in the Barcode field, you can make Barcode a merge field in a mailing label or envelope, and apply the barcode font to it just as you'd apply any font. You can position the Barcode field above or below the address block. For an envelope, you can print the barcode along the bottom edge, to the right of the address block (see **Figure 1**). Your Post Office can tell you where the barcode must be.

I use an HP LaserJet-compatible Postnet barcode font from Architext. (The company makes barcode fonts for other printers. See the Resource sidebar at the end of the article.) The soft font comes with a utility you can use to download it to printer.

What's a Delivery Point Barcode?

To print a delivery point barcode, you need the nine-digit ZIP code, the two-digit delivery point code (DPC), the check digit, and a United States Postal Service- (USPS) approved font to convert the string to a barcode.

The DPC is the last two digits of the street or box number. If the address is 1247 Elm St. (or PO Box 1247) the DPC is "47."

You calculated the check digit by adding the digits of the ZIP+4 ZIP code and the DPC, subtracting that sum from the next higher multiple of 10, and taking the difference. Thus, if the address is 1927 Elm St., and the ZIP code is 92627-2675, the check digit is 5 because the sum of the digits is 55, the next higher multiple of 10 is 60, and 60 minus 55 equals 5.

A valid delivery point barcode consists of 62 bars—a frame bar, bars representing the ZIP+4 ZIP code, the DPC, and the check digit, and another frame bar. There are five bars to a digit, so the 12 digits along with the two frame bars make a 62-bar delivery point barcode when fonted with a barcode font.

Properly barcoded bulk mail travels faster and can earn postal discounts because automated equipment can sort and route it more efficiently. Even individual mail pieces travel faster and more reliably when barcoded.

Adding the barcode font to your font file

Once you have the font, the easiest way to use it in Q&A for DOS is to append it to your HPLASER4.FNT (or other LaserJet or LaserJet-compatible) font file. Here's how:

1. Make a backup copy of the Q&A font file you plan to modify.

2. Exit Q&A to DOS, and run the QAFONT.EXE font utility. It should be in your main Q&A directory.

3. At QAFONT's opening menu, select *Create font descriptions from soft font files*.

4. Navigate to the drive and directory where the barcode font is stored. Highlight the font name (Architext's is named PBC01P.SFL), press the space

bar to tag it, then press F10. Answer Yes to the dialog box that appears.

5. Navigate to the directory where your Q&A font file is stored (usually the main Q&A program files directory), highlight the font filename (such as HPLASER4.FNT), and press Enter.

6. Select *Append to file*, and press Enter. A warning screen appears telling you the modified font file will be non-standard. Press Enter, and the message *Font file successfully converted* should appear.

7. Exit the QAFONT utility, and start Q&A.

8. Select Utilities / Modify font file. Type in the name of the Q&A font file you just modified (QALASER4.FNT, for example) and press Enter. The first font description in the file appears.

9. Press Ctrl-End to move to the last font description in the file. The Font Name should be *PBC01P 9 Med ASCII* with the abbreviation *Pm9*—the barcode font. You can change the font name and abbreviation to something more descriptive if you like, but don't change anything else.

10. Press F9 to move to the previous font description. If the form is empty, press F3 to delete it. Continue to press F9 and delete each empty form until there are no more, then press Esc to return to the Main menu.

(My Q&A 5.0 HPLASER4.FNT font file came with 55 font descriptions. The appended barcode font inexplicably wound up as description 86, with intervening blank description screens. I couldn't get the barcode font to appear on the HPLASER4.FNT's *List of Available Font Descriptions* until I deleted the blank descriptions.)

Now, when you select your modified font file at any Font Assignments screen, your barcode font should appear at the end of the *List of Available Font Descriptions*, and you can add it to your *Font Assignments* screen.

Downloading the font

The Architext barcode font comes with a utility (LLD.EXE) you can use to download the font to your printer. You can make it a push-button process by creating a batch file to run LLD, and installing it as an Alternate
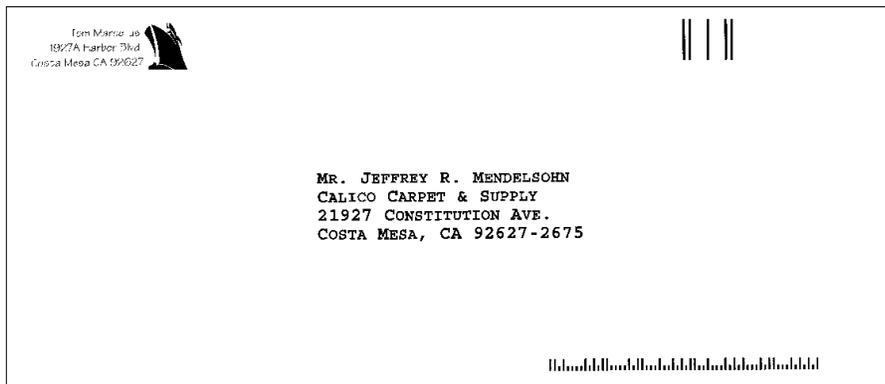

Figure 1. The barcode printed along the bottom edge of an envelope. Figure 2 shows the sample envelope document in Write.

Program on the Q&A Main menu. (If you're using Q&A 5.0, you can optionally add the batch file to your Alt-F9 External Programs menu.)

Before you do, go to DOS and run LLD.EXE (from the directory where it's stored) without a font filename. A list of LLD's download options and corresponding command line switches appears. Look over the list. If you'll need to specify any of the options, note down their switches so you can add them to the batch file.

To create the batch file, return to Q&A and select Write / Type/Edit. Type in the DOS commands that run the LLD download utility and download the barcode font. If both files are in a QA\FONTS\ directory, and you're using LLD's defaults, your batch file should look like this:

```
@Echo Off
CD FONTS
LLD PBC01P.SFL
Pause
```

Save the batch file by pressing Ctrl-F8 and typing C:\QA\BARCODE.BAT as the batch file's name. (Substitute the actual path to your Q&A program files directory.)

To install the batch file on your Main menu, select Utilities / Alternate programs. Navigate to an empty Alternate Program line, type *BARCODE.BAT*, then type *Barcode* on the corresponding Menu Selection line. (Be sure there are no other selections beginning with the letter "B.")

Now you can press "B" from the Main menu to download the barcode font. If the printer is off, a message appears telling you to turn it on. By default, the font will stay resident in the printer until you power it off.

Barcoding a label or envelope

As I mentioned earlier, you can assign the font file with the barcode font to any Write document, label, or

envelope that contains the Barcode merge field from your database. Simply press Ctrl-F9 from any label or document screen, select your modified Q&A font file if it's not already displayed, then assign the barcode font as one of the eight available fonts. You can then apply the font to the Barcode merge field using the Shift-F6 Fonts and Enhancements menu.

(Don't forget that the modified font file you're using must be the one specified for the installed printer you select at the Print Options screen.)

I should mention a couple of oddities.

First, when you apply the barcode font to your Barcode merge field, Q&A might display a message saying, *Font has characters that are too small*. I don't know why this is, but you can ignore it.

Second, if you're barcoding an envelope—a #10 (COM10) business envelope, for example—and using either Q&A's HP LaserJet Envelope printer driver or a landscape Write document you've created to print envelopes, you can run into trouble if you position the Barcode field along the bottom edge of the envelope. If the barcode doesn't print under the first envelope's address, but a form feed occurs and the barcode prints on the *next* envelope, then you'll have to make some adjustments.

(This occurs because Q&A is trying to print the barcode on the envelope's bottom margin. Since it can't, the printer form feeds and prints the barcode on the subsequent envelope.)
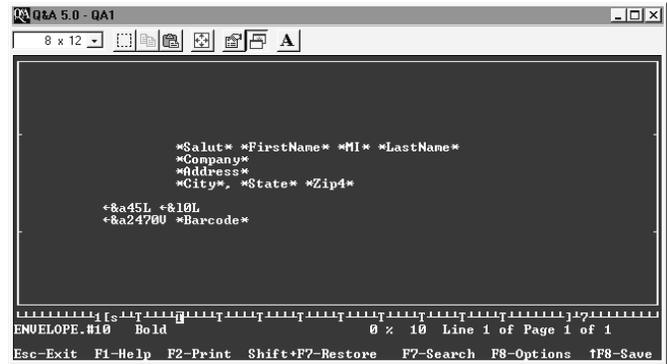

Figure 2. LaserJet control codes that force the barcode to print at a precise position. (Here, Q&A is running in a window in Windows 95.)

I work around the problem by adding these printer control codes to my Write envelope document:

```
←&a45L ←&l0L
←&a2470V *Barcode*
```

The first code indents the left margin 45-columns (4.5-inches), forcing barcode printing to begin to the right of the address block. The second code disables perforation skip so Q&A can print on the bottom margin. The final code positions the barcode exactly where I want it—in this case, 2,470 decipoints (3.43-inches) down from the envelope's top margin, about as far down as you can print on a #10. I place the Barcode merge field just to the right of this final code. **Figure 2** shows the envelope in Write.

I discussed these LaserJet escape codes in my article in the September issue—they're indispensable when you need precise printing control.

So, you don't need Bar Lite to generate postal barcodes after all. If you're already using it successfully, by all means continue with it. But if you can't spare the memory and want more flexibility, the Q&A program and barcode font approach offer a good alternative.
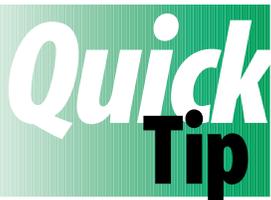
Tom Marcellus is editor of *The Quick Answer* and author of *PC World Q&A Bible* (IDG Books). His QuickClick Calendar Plus—a time- and activity-tracking database for Q&A 5.0—is available from Marble Publications, publisher of *The Quick Answer*.

Resource

Postnet barcode fonts are available from the following:

Architext
121 Interpark Blvd., Suite 208
San Antonio, TX 78216-1808
210-490-2240 / Fax 210-490-2242

The fonts retail for $150. For a limited time the company is offering a 50-percent discount to *The Quick Answer* readers.

Quick Tip
A Handy Program Debugging Tool

Programs that perform a series of steps can be difficult to debug, especially when the final result doesn't make clear which step or steps are causing the problem. In such cases, you may be able to use the STOP command to determine which steps need debugging. By temporarily placing STOP (with a semicolon) at the end of the first step or block of code, you can run the program to verify it's working up to that point. You can then move the STOP to the end of the second block, and so on until you spot where the bug is. **QA**

Tom Marcellus

Custom Sorts with Subtotals

Want to sort and subtotal your report in a special way, rather than just alphabetically or numerically? Simply add a new field to the database, and use it to assign a number to each classification, category, or group in the order you want to sort. Skip a few numbers between groups in case you need to add new groups later.

To simplify data entry, you can place the group numbers and names in your lookup table, and program the database with a Lookup command that auto-fills the group name when you enter the number. For investment classifications, I use 10 for Cash, 20 for Money Market Funds, 30 for U.S. Treasury Bonds, and so on. My database contains one record for each individual investment.

When designing the report, sort on the number column, but make it invisible since it isn't needed in the report. Q&A doesn't calculate subtotals for invisible columns, so you'll need a secondary sort on the group name column. This doesn't change the sort order, but it calculates the subtotals and lets you choose whether to repeat the group name on each line, or print it just once for each group. **QA**

A. C Tynes, Metairie, Louisiana

Zero-Fill Leading Spaces in a Character Field

When text fields that store numeric values must be padded with leading zeroes, you can use the following program to simplify data entry. The program works with text fields of any width. Simply type the number, press Enter, and the field is automatically padded with the appropriate number of leading zeroes. For example, if Field6 is six characters wide and you enter 25, Q&A places 000025 in it:

```
> Field6 = @Text(@Width(Field6)-@Len(Field6), "0")
          + Field6
```

The technique lets you numerically sort text fields containing numbers. **QA**

Tom Marcellus

Sort Numerically on a Text Field

Suppose you want to numerically sort a report on a text field that contains only digits. (This might be an Account Number or ID Number field that's auto-incremented with @Number.) You could use the Format Spec to change the field from Text to Numeric, but you're afraid this might cause problems elsewhere. If you sort 1,AS on the Text-formatted ID Number field, you'll wind up with output shown on the left of the following table when what you really want is a numeric sort like that shown on the right:

```
ID Number   Name        ID Number   Name
---------   -----       ---------   -----
1           Greg        1           Greg
10225       Mike        2           Mark
1101        Tom         3           Ken
123         Bill        9           Jane
2           Mark        72          Linda
3           Ken         93          Jim
72          Linda       123         Bill
9           Jane        1101        Tom
93          Jim         10225       Mike
```

You don't have to reformat the ID Number field to get the output on the right. Simply use a Column/Sort Spec and derived column like the following:

```
ID Number: 1,I
     Name: 3

     Heading: ID Number
     Formula: @Tonumber(#1)
Column Spec: 2,AS,F(T,JL)
```

The ID Number field is made invisible. The derived column references it, and employs the @Tonumber function to convert its values to numbers, facilitating a numeric sort. The *F* command in the Column Spec prints the ID numbers without commas, and left-justifies them. **QA**

Tom Marcellus

Quick Tip

Launch Windows Programs from Q&A

If you're running Q&A 5.0 for DOS in Windows 95, you can use Q&A's External Programs menu or @Shell command to "shell out" to Windows (not just other DOS) programs. First, determine the .EXE file that runs the Windows program, then add it along with its path to the Command Line column of the External Programs menu (Utilities / External Programs) or the @Shell command. When you invoke the program from Q&A, Windows 95 minimizes Q&A and adds it to the Taskbar at the bottom of the screen. You can then click on the Q&A Taskbar button to return to the same Q&A screen from which you invoked the other program. I tried this with several Windows programs, including Word for Windows and Excel, and it worked without a hitch. Unfortunately, it didn't work in Windows 3.1. **QA**

Tom Marcellus

More Yet on that Mysterious "500N"

While running a series of macros recently, that strange "500N" kept appearing on Q&A's Main menu and subsequent macros failed. It appeared randomly after any of the macros in the series had completed it's task. The experience taught me that once the "500N" appears, Q&A is on shaky ground, and the only thing to do is exit and restart the program.

As for what was causing the "500N," if we ran the macros (Alt-1 through Alt-7) from the keyboard (as hot keys) or from custom menus, they worked reliably. They didn't fail until we launched them from the Alt-F2 List of Macros. As long we didn't press Shift-F2 or Alt-F2 after loading the macro file, we didn't see the "500N." (And we tried it 35 times.)

One time, however, after loading the macro file and having the macros run fine when invoked from the keyboard, I pressed Shift-F2 / Get to see the macro filename. I then immediately pressed Esc to abandon the procedure. Lo and Behold, the macros then failed even when invoked from the keyboard! **QA**

Gordon Meigs