Review

Simplify Data Entry with Wide DTFTALK Pick-Lists

Pop-up screenwide pick-lists with live data courtesy of DTFDATA and DTFTALK make entering those long values a snap.

HAVING pop-up pick-lists for data entry makes filling fields a breeze. Not only do they let you point-and-click your way through the process of adding and updating records, they eliminate typing errors, keeping your data standardized and consistent.

In Q&A 4.0, the only way to create a pick-list for a field is via the Restrict Spec (*File / Design / Customize / Restrict values*). You enter a list of the permitted values for a field, separating each one with a semicolon. Then, during data entry, you press Alt-F7 in that field to display the pick-list.

Q&A 5.0, with it's *Userselect* and *XUserselect* commands, gives you more options. You define your pick-lists *in programming* and can have them displayed automatically as you enter the field.

But the one obstacle many database designers face with both the Userselect and XUserselect pick-lists (as well as with Q&A 4.0-style Restrict Values pick-lists) is that for some applications they just aren't wide enough. They display only the first 19 characters of the selections, which might not be enough to differentiate between the various items on the list.
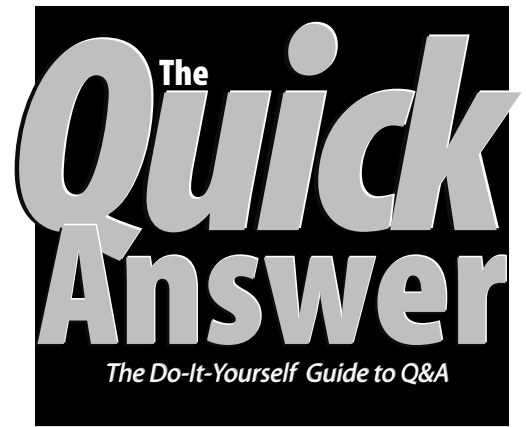
As **Figure 1** shows, the **Status** field in this database might contain quite a lengthy entry. There are about 150 different ones altogether. The field must contain the *exact* status spelled correctly, otherwise other components in the application (such as reports) will fail to provide accurate information.

Now look at the screenwide pick-list of **Status** entries Figure 2. This one perfectly suits the application requirement because it isn't subject to the 19-character limitation. But this list isn't generated by Q&A.

It started with XUserselect

Originally, the client *did* use an XUserselectR pick-list to fill the **Status** field. It displayed *abbreviations*. Selecting the abbreviation caused Q&A to then fill the Status field with the corresponding full-length entry. (With

Figure 1. The **Status** field in this database (shown in reverse color) must contain one of 160 standard entries depending on the current status of the case.

Figure 2. When the user presses F8 in the record, this screenwide DTFTALK picklist appears with the permitted **Status** field entries.

January Conference to Host Q&A Users from at Least 11 Countries on Five Continents

Earlybird Registration Rate Extended for *Quick Answer* Subscribers

THIS is your last chance to register to attend the upcoming **International Q&A Users Conference 2001** at the earlybird registration rate of just $95.00. The deadline for the earlybird rate was September 30 but has been extended to October 30 for *Quick Answer* subscribers.

But there's *another* reason to register early—*space availability*. As this issue of *The Quick Answer* goes to press at the end of September, it has been only two months since we announed the conference. In that time, registrations have been pouring in at a far faster pace than anticipated. To give you an idea of the spectacular response, so far Q&A users from *11* countries on *five* continents have registered to attend, making this truly international gathering promise to be *the* biggest Q&A event ever!

You need to register and book your lodging at the hotel now to be assured of attendance and a room at the venue at the special rates being offered.

Plan now to take a mid-winter break to come to sunny Southern California. Bring your spouse—the kids. There's lots to see and do here in friendly Orange County for any travelling companions who won't be attending. Get the details at **www.quickanswer.com/bash.htm**—and *register* while you're there!

Quick Tip — Who Goofed Up this Record?!

We have a large shared database at our company that's used throughout the day by automated report printing and data export procedures. For this and other reasons, we didn't want (and didn't need) to password protect data entry. Yet we sometimes need to know who added or last modified a particular record if erroneous information turns up in our output.

To accomplish this, we added a special field to the end of the database to "auto-stamp" each record with a string value containing the date, the time and the name of the person who added it to the database or last modified it.

We use the @Modified function in an on-record-exit program to determine if the record was added or changed. The program gets the date and time from the system., but can't get the user name (@UserID) because the file isn't password protected, so we came up with a different solution. We installed a small one-record, two-field database in the same path on each user's local hard drive. The first field is Speedy and contains "xxx." The second field contains that user's name, which we make read-only.

This way, if @Modified triggers when the record is saved, the program can simply lookup the User's Name on the fixed "xxx" match and retrieve it into the "Stamp" field. The on-record-exit program that does the trick looks like this:

```
#1000: If @Modified Then Stamp = @Str(@Date) + " " +
@Str(@Time) + " " + @XLookup("C:\User\User.dtf", "xxx",
"Code", "Username")
```

Although this approach isn't altogether tamper-proof, it has been working very well for us.

Mike Bell, Montgomery Home Title

Wide Pick-lists... cont'd from page 1

XuserselectR, you can specify the value for the list and a *different* one to fill the field.) But this proved unworkable, particularly with new users. Even veteran staff users were constantly having to look up the statuses on printed sheets to find the abbreviation that would retrieve the full entry.

Then we discovered John Dow's DTFTALK. With DTFTALK, you can pop-up a screenwide pick-list (see Figure 2) on top of the database record. You simply scroll down the list (or, in the latest version, press the first character to move to that alphabetic group of selections) and press Enter to copy the selection into the field. For saving keystrokes and standardizing lengthy field entries, DTFTALK was just the ticket.

How DTFTALK works

DTFTALK comes bundled with John's venerable DTFDATA, which we've talked about many times in these pages. (Search the *Quick Answer* Index database at www.quickanswer.com on the keyword "DTFDATA.")

If the items for your pick-list rarely change, you can have DTFTALK use a plain ASCII or text file as its source. For example, you might print a specially-formatted report to a disk file, type your list selections in a Write document saved to ASCII format, or generate an export file from the information in a database, then specify *that* file as DTFTALK's source or input file.

Or, as was the case in this application, you can use DTFTALK in conjunction with DTFDATA. That is, you can have DTFDATA extract the information from a database (the same one or a different one) on-the-fly in real time, then pass the resulting file to DTFTALK to generate the pick-list. The advantage to this is that your pick-list will always contain the most up-to-date information from the extraction database, which can easily be kept current simply by adding, deleting and editing its records.

There are an infinite number of ways you can configure and use DTFDATA. And when you add DTFTALK to the mix, you have one powerful pick-list engine. I couldn't even begin to cover all the possibilities here. What I will do is show you how I set-up DTFDATA and DTFTALK to manage the implementation shown in Figures 1 and 2. For more details on what these utilities can do, you'll need to peruse the documentation that comes with them. It's free with the DTFDATA demo application you can download from John's web site at www.johntdow.com.

Sample programming

The Q&A 5.0 database in question tracks information on potential recipients of health care legal services. Each record represents a *case* for a particular patient, and a given case can progress through various stages over weeks or months until it's finally resolved. That's what

makes the **Status** field so crucial—it might need to be updated a dozen or more times as a case progresses.

I designed it so that from anywhere in a record, the user can press F8 (the manual calc key), and database programming launches DTFDATA with the parameters it needs to extract a sorted list of the status entries from an external **Status.dtf** database (which contains one record for each status). DTFDATA then saves this list to a file and control returns to the Q&A programming. The program then launches DTFTALK with the parameters it needs to read-in that file (the list) and display it as a pick-list.

DTFDATA and DTFTALK are both so fast that in the blink of an eye the list of 150 possible entries of up to 130 characters each appears for the user to make a selection.

Here's the manual calc program in the **Status** field that does the trick, followed by an explanation:

```
#100:

Temp1 =
@Shell("Q:\data\dtfdata Q:\data\status
Q:\data\codes.qax c:\windows\temp\codes.txt");

Temp1 =
@Shell("Q:\data\dtftalk c:\windows\temp\codes.txt
1 2 c:\windows\temp\code.txt");

Temp1 = @Insert("c:\windows\temp\code.txt");

If @Len(Temp1) > 1 Then Status = Temp1;

Clear(Temp1)
```

The DTFDATA parameters

In this application, the shared databases are stored in a network directory named *Q:\data* but the text files generated by DTFDATA and DTFTALK are saved to the local PC's hard drive (in the *Windows\temp* directory) to avoid network file sharing problems. (We purchased a DTFDATA site license from John for use on multiple PCs.) Otherwise, if someone has the pick-list displayed, and someone else attempts to display the same pick-list, a file-sharing error will result.

It could be argued that the DTFDATA and DTFTALK executables, as well as the QAX file (more on which later) shouldn't be stored in the same directory as the databases. But we didn't have a problem with that. The doc file that comes with the utilities has some tips on where best to locate the various files and offers a special DTFDATA "switch" that lets you create a kind of shortcut to deal with lengthy paths and the resulting command lines that might otherwise overstep the DOS limit.

The database contains a hidden field named **Temp1** at the end of the form. DTFDATA is launched via the @Shell command with the following three parameters (with a space between each one):

1. The path and name of the database you want DTFDATA to use. In this case, it's Status.dtf.

2. The path and name of the plain ASCII file that tells

DTFDATA which records to find, which field(s) to extract from them, and how to sort the output file. In this case, that file is named *Codes.qax*. Here's what it looks like:

```
SELECT=Status >= "A"
SORT=30
FORMAT=R
HDR=              Select STATUS and Press ↵
HDR=              _____
100 Status
```

***Note*: Never create or save a .qax file using Q&A's Write word processor. Write adds an extra character to end of the file which trips up DTFDATA. Use Windows *Notepad* or DOS Edit to compose and save .qax files.**

The SELECT line tells DTFDATA which records to select. Here, it's the records where the **Status** field in Status.dtf is greater than or equal to "A."

The SORT line specifies how many characters to sort on. Here, it's 30 because the status entries, though lengthy, are unique after the 29th character.

The FORMAT line tells DTFDATA how to format the output file. (The documentation describes the various format options in detail.) In this case, it's "R" for Record format, which gives you one **Status** field entry per line in the output file.

The HDR lines add a header to the output file for the DTFTALK pick-list to come. (See the top Figure 2.)

Finally, the last line tells DTFDATA to extract the data from the **Status** field in Status.dtf. When using the *Record* format, you must additionally tell DTFDATA not to truncate the data. In this case, 100 (characters) is used because that's the length of the longest entry.

3. The final parameter tells DTFDATA where to save the output file. Here, it's c:\windows\temp\codes.txt.

The DTFTALK parameters

After DTFDATA has completed its task, control returns to the Q&A programming and DTFTALK is launched via a second @Shell command.

DTFTALK's first parameter in this example is the name of the source or input file you want it to use. Here, it's the c:\windows\temp\codes.txt file that DTFDATA just created.

The second parameter specifies the pick-list color scheme you want. Here, the "1" tells DTFTALK to use the "Q&A standard" blue background.

The third parameter specifies the number of lines in the input file to treat as header lines. In the .qax file above, two header lines were created in the DTFDATA output file, so here you tell DTFTALK to treat the first two lines

in codes.txt as static header lines so they're not selectable entries for the target field.

The final DTFTALK parameter specifies the name and path of the output file to create which, in this case, is c:\windows\temp\code.txt.

Here's the sequence: (1) DTFDATA creates codes.txt, which DTFTALK uses as its input file for the pick-list. (2) The user selects an item from the list, and DTFTALK outputs that selection to the code.txt file. (3) The Q&A programming resumes, inserting the codes.txt file in the **Temp1** field. (4) As long as **Temp1** contains something (@Len(Temp1) > 1), the value is copied from **Temp1** to the **Status** field, and you have your new **Status** entry.

If necessary, you can beef up your programming here to validate the entry. For example, if DTFDATA can't complete your instructions, it generates a plain text file named Dtfdata.err containing a brief explanation of the error. You could have your programming insert and read Dtfdata.err if there was a problem with the first file. All this is covered in the DTFDATA.DOC documentation file.

Using a batch file

You can run DTFDATA from a batch file. For example, in the application I've discussed, the client had a number of special billing-related Status codes that began with a "+" sign or the "*" character, which she wanted *at the end* of the pick-list. The problem was that if we had DTFDATA extract these from the Status database along with the regular Status codes, these special items appeared *at the top* of the pick-list rather than at the end of it because the "+" and "*" are lower in the ASCII table than the letter "A." We could have had DTFDATA sort it's output file in reverse (descending) order, putting the "+" and "*" entries at the end of the list, but then the other list items wouldn't be in alphabetical order. (They would have gone from "Z" to "A.") For this reason, we needed to run *two* instances of DTFDATA—one to extract the entries greater than or equal to "A" (as in the .qax file shown earlier), and another to extract the "less than A" entries (< *"A"*), then append this *second* output file to the first one, creating a single input file for DTFTALK.

DTFDATA has a "+" parameter you can use to combine output files, but for some reason I was unable to get it to work consistently even though it *had* worked at another time on another computer. What *did* work, though, was using the DOS Copy command in the batch file to combine the files. Following are the revised Status field programming, the batch file, and the *second* .qax file.

Revised **Status** field program
```
#100:
Temp1 =
@Shell("q:\data\codes.bat");

Temp1 = @Shell("q:\data\dtftalk
c:\windows\temp\codes.txt 1 2
c:\windows\temp\code.txt");
Temp1 = @Insert("c:\windows\temp\code.txt");
```

Q&A Basics
Printing Out Your Data
Part 1—Forms

Alec Mulvey

Q&A for DOS is immensely versatile when it comes to printing out database information. It may surprise you to learn that there are five separate ways of printing your Q&A data—more, if you include the various ways you can design columnar and crosstab reports to get special printing effects. In this series of articles I'll describe the differences between these ways of printing so that you'll be better equipped to choose the one best suited to the task.

Here are the five printing methods and where you use them:

- Pressing F2 while viewing a database record
- Merge document—Write menu
- Report—Report menu
- Mailing Labels—Write menu
- Print Spec—File / Print menu

I often see the wrong printing method used. For example, I find people using a columnar report to print a simple list of names and addresses. This usually produces very wide columns, so people invariably print such reports in a tiny font. Defining a Print Spec for this type of list would be much better. Another example is a database form designed to look good when printed off the screen with F2. Database forms should be designed for ease of data entry and comfortable onscreen viewing, not to conform to a printing ideal. In this case, a Print Spec or a merge document would be a better solution.

Here's a quick rundown of the five methods:

- **Pressing F2 while viewing a database record** is quick-'n'-dirty—sometimes *very* dirty! Q&A prints all the fields (along with their labels) and any fixed text on the database form. While this is the fastest and simplest way to get a printout of your data, this method is really only suitable for ad hoc or "emergency" printouts.

- **Merge documents** give you huge scope for fine-tuning the printed result. Q&A prints one document per database record—an obvious choice for form letters—but you can print any database fields plus any other fixed text to any size document.

- **Reports** can be plain columnar reports or crosstab reports. This method is very versatile, and the only way to get totals for numeric data. I covered report basics in my article in the July 2000 issue.

- **Mailing Labels** have much in common with merge documents, but come with a library of pre-defined standard templates for all the popular label sizes and a *very* good on-line help system with a special trouble-shooting section.

- **Print Specs** are used less often than they deserve to be. They're a bit like mailing labels, but allow you to specify headers and footers as well as saved Retrieve Specs.

We can't cover all of these printing methods in this article. This month, I'll cover F2 database form printing. Next month, in Part 2, I'll cover merge documents and mailing labels. (Reports have already been covered.) I'll conclude by showing you how useful Print Specs are and recapping the differences between these techniques.

Printing records with F2

Printing the database record you're viewing is simple—you just press F2 and F10 and Q&A prints out the current record. That's all there is to it—right? *No!*—there's a lot you can do that governs what your F2 printout will look like—and a host of defaults you can set.

When using the F2 method, you can press:

F2, F10 to print the current record
Ctrl-F2, F10 to print the "stack" of retrieved records

In either case, Q&A prints all pages of the record you're viewing. Using the "print stack" option (Ctrl-F2) can be a useful way of producing a hard-copy printout of new records for filing. When you've added the last record of a session, press Ctrl-Home to go to the first record (you're still in Add Data mode at this time) and then press Ctrl-F2, F10. Q&A will print all the records you just added during the session.

When you print a record or records this way, Q&A includes all the fields in the printout, including any fixed text on the form, such as field labels and headings. How useful is this method of printing? Well, it depends on the circumstances. For most database applications of average sophistication, it wouldn't even be a consideration that

@*Help*

EDITED BY WILLIAM HALPERN

Q&A and Windows Me—*Still Going!*

Well, once again we got caught up in the *You-Must-Install-This-New-Operating-System* frenzy from Microsoft. Actually, the *real* reason was that Q&A users have been calling and emailing us since the day Windows Me (Millennium Edition) was released with that same old question: *"Will Q&A run in it?"* We proceeded with the installation with trepidation because Microsoft had announced that with this edition Windows would no longer support DOS or DOS programs. We "sacrificed" two computers—a Compaq notebook and a Compaq desktop. Both had Windows 98 SE installed, so we installed the special upgrade version of Windows Me.

The title makes it obvious that we had some degree of success. How much? It depends on your hardware and point of view. But if I had to chose between Windows Me and Windows 2000 for business use, Windows 2000 would be the hands-down winner. Windows Me, by design, is an operating system for the novice user, with emphasis on home-networking, internet, and picture editing. It attempts to shield you from the complexities of setup and computing but in doing so makes some things very difficult (such as drive mapping) to accomplish. But, enough of that. Here's the bottom line on what we found:

```
Q&A Version        Notebook        Desktop
Q&A Windows        Runs Fine*      Runs Fine*
Q&A 4.0 DOS        Runs Fine**     Runs Fine**
Q&A 5.0 DOS        Runs***         Runs Fine****
```

* Requires pre-partitioning the installation drive if it's larger than 2G.

** On drives larger than 2G, requires pre-partitioning of drive for installation *or* files must be copied over to new computer (not installed) and Lesspace used.

*** Requires Lesspace for drives larger than 2G; you might have problems getting Expanded memory on certain notebooks (such as the Compaq we tested).

**** For running (not installation) requires Lesspace for drives larger than 2G.

With Windows Me you cannot *boot* to a DOS prompt, but you *can* open a DOS Window and run DOS programs within it. Windows Me *does not use a config.sys* unless you have an old driver loaded in your current setup that isn't supported by Windows Me. This is important! The config.sys is where you place the device drivers to set up Expanded and High memory. So how did we get the system to recognize these memory settings that Q&A needs to run successfully? We didn't have to do anything.

After installing Windows Me, click on *Start / Programs / Accessories / MS DOS prompt*. In the DOS window, type *mem/c/p* and press Enter twice. If you see a line that reports any numbers in Expanded memory, you're okay. Close the DOS window and use Q&A just like you did in Windows 95/98. Create your Q&A desktop shortcut and set its memory properties as we've explained in previous columns. (Search T.J.'s *Quick Answer* Index Database at www.quickanswer.com on the keyword *memory*.)

But if that line is missing, you probably have one of the few computers with a BIOS that doesn't support Expanded memory (like our Compaq notebook). This doesn't appear to be Windows Me-related. With Q&A for Windows or Q&A 4.0 for DOS this isn't a problem. But in Q&A 5.0 for DOS, Expanded memory is crucial for printing lengthy reports, entering large amounts of data in expanded fields, fonting documents, and other operations. So, what do you do with such PCs? That question is still under study and we hope to report on it soon.

Testing network connections and overall Q&A speed running in Windows Me has not yet been completed. We hope to let you know on that soon, too.

But like that Energizer bunny, Q&A keeps on going! All preliminary findings show that, with the same caveats as in prior versions of Windows 9x, all versions of Q&A 4.0/5.0 should run fine in Windows Me!

Error Message 06A8

I normally do my programming and other database modifications in Q&A for DOS 4.0, but switch to Q&A for Windows for data entry and reports. This morning, after adding some programming, I went to retrieve a record in

Q&A for DOS and got a *System Error. Please Try Again (C-2); Ref#:06A8* message. I switched to Q&A for Windows, retrieved a record and confirmed that the new programming was working. I polished up the form there, then went to add some more programming by selecting *Select / Database Structure*, whereupon I got a *System Error, Please Try Again, Ref#: 6A8* error message. I made a copy of the database and removed all the new fields and programming. No luck! I'm still getting the error messages in both databases in both Q&A versions. What do I do now?

Paul

The 06A8 or 6A8 error indicates serious damage to the database file. This can be caused by running Q&A in a +2G hard drive partition, a power glitch, or even a virus. The damage is in the file structure and/or the index. To repair the damage (assuming you're not using Q&A or the database in a +2G partition):

1. Make a backup of the database. (Copy the *.dtf and *.idx files to another folder.)

2. Copy the database design to a new filename, then copy the records from the old database into the new design.

3. Run Recover on the new database.

If these steps prove successful, then the database has been repaired. If Q&A or the database is in a +2G hard drive partition, *get them into a partition that's less than 2G!* If your Q&A for DOS TEMP files directory (Utilities / Set Global Options) is in a +2G hard drive parition, change your temp files location to a smaller partition.

How Many Records Can Q&A Handle?

I use Q&A 4.0 for DOS and Q&A for Windows. What's the maximum database size I can have in Q&A for DOS? I can't find the answer in the *User Guide*. I have a database of 20,000 records that will soon go to about 25,000.

P. J. Evans

A Q&A database should be able to contain up to 1,000,000 records, but the practical limit is closer to 110,000 records. After that, any Speedy (indexed) fields cease to work.

Combining Fields

In a text field, I want to combine the contents of other fields as shown on page 48 of the *APT* manual that comes with Q&A, where the example of combining two fields is *Throckmorton* + *Scribblemonger*. The problem is that some of the fields I want to combine are formatted for Text, while the others are formatted for Money, Dates and Numeric values. Using the "+" character to combine the values in a programming statement doesn't work.

Mike Wilson

When Q&A sees a programming statement that contains a "+" sign and a number, it attempts to perform *addition* (not concatenation) on the values. If it sees a "+" sign with a date field in the programming statement, it tries to add dates (days) together. Since you have a combination of these non-text values plus a text field, Q&A is ignoring the text values. You have to tell Q&A to treat everything you're adding (combining) as text by placing all non-text fields inside the @Str (string) function. Suppose you wanted to combine the following fields in a field named **Result**:

```
Item (Text)
Cost (Money)
Date of Sale (Date)
No Items (Number)
```

Your programming should look like this:

```
#10: Result = Item + ", " + @Str(Cost) + ", " +
@Str(Date of Sale) + ", " + @Str(No Items)
```

Keep in mind that this will add dates in their native internal (as opposed to *display*) format of YYYY/MM/DD, money values as plain numbers, and numbers without thousands separators. At *The Quick Answer's* web site, you can search T.J.'s Index Database on the keywords *Money*, *Date*, and so forth to find back issues with tips on formatting non-text values in programming so that they wind up looking like the way Q&A displays them in your database records.

Bill Halpern owns Professional Computer Technology Associates (PCTA) in Newtown, Pennsylvania, 215-598-8440, www.pcta-usa.com, email pcta@comcat.com.

Quick Tip
Lookup Table Extraction Glitch Remedy

There may come a time when you need to extract all the data from a database's Lookup Table in order to make a separate database out of it or copy it into another database's Lookup Table. Q4LOOK.EXE, which you run from the DOS command line, makes it a snap. Q4LOOK will extract Lookup Table data from all Q&A version databases, but it can get snagged on certain Q&A 5.0 for DOS databases where nothing will happen. You'll get no prompt to specify the output format, no error message, *no nothing*. Even though the database exhibits no corruption, running Recover on it can remedy the problem.

You can download Q4LOOK from the "Freebies" page at www.quickanswer.com. Every database designer/administrator should have a copy of it in his or her Q&A "toolkit."

Include Graphics in Your Output without Formagic

DAVID FLAKS

Combine graphical elements such as complex form templates, logos in your Q&A for DOS print jobs.

FOLLOWING Tom Marcellus' articles in the December 1998 and January 1999 issues of *The Quick Answer* ("Graphics Printing Comes to Q&A for DOS" and "More Formagic Tricks"), I became an avid Formagic user. I have come to rely on it daily in my business for printing my Q&A letterheads, statements and invoices complete with graphic elements such as my company's logo.

One of my clients with a large Q&A 5.0 network application required complex printing/faxing facilities directly from Q&A. Some years ago I installed Net-Satisfaxtion together with the Intel Net-Satisfaxtion card on their network server. Since then, they have been using it very successfully to print and fax from Q&A.

One of the problems, however, was that all their merge documents had to be designed in Q&A itself because the fax server did not have the wherewithal to insert an overlay. (By *overlay*, I mean a complex form template, company logo, or other graphic element that overlays the Q&A document so that the two print as one.) While this was a disappointing limitation, the client accepted the fact that he would not be able to send faxes with graphic elements—thus no letterheads or complex forms other than the limited Line Draw features in Q&A. (I exclude here the complex process of adding printer escape code sequences to Q&A merge documents so they print with graphical lines, boxes and shading as Tom details in his October 1996 article, "Merging Data with Complex Forms—A Case Study.")

Recently, this client approached me with requirements that could only be met by printing an overlay on top of a Q&A merge document. I immediately thought of Formagic. I demonstrated Formagic to them and created all the Print Specs, merge documents and overlays. When the client was totally satisfied, he gave me the go ahead to purchase and install Formagic. It was only then that he said that the company would also need to *fax* their documents as well as print them to the network printers.

Crux of the problem

That one small word—*fax*—was the fly in the ointment. Combining a Formagic overlay with a Q&A merge document takes place *in* the HP LaserJet-compatible printer, but Net-Satisfaxtion intercepts the output to a printer port and sends it to the fax server. Because of that, how could I overlay the output of the merge document with the overlay residing only in printer memory?

I tried a PCL emulator to capture the output directed to the fax port and get it to merge the overlay with the data. (*PCL* or *Printer Control Language* is what most HP printers support as their internal programming interpreter.) This seemed to be the solution, except that I could not get the emulator to overlay a specified PRN file on top of the output data. (A *PRN* file is what you get when you print a document, graphic or any file to a file for a particular printer. Thereafter, you can send the file to the printer and it will look exactly like it was printed from the application in which it was created. See Tom's Formagic articles for details on how this works.) All I could get it to do was to print the OVERLAY.PRN before or after the merge document.

So I took another approach. I printed the overlay to a PRN file (LETHD.PRN) and the merge document to a DISK file (QA.TXT). I then appended the two documents together using a DOS COPY command in the following manner, then sent the resulting OUTPUT.PRN file to the printer:

```
COPY LETHD.PRN + QA.TXT OUTPUT.PRN
```

This worked, but again the problem was that the overlay/letterhead printed first, followed by the data from the merge document. I had nearly given up on this course when an idea struck me as to how I might be able to do it.

It's all in those escape codes

I noticed that the LETHD.PRN file ended with an escape character specifying a form feed. When I appended the QA.TXT file to the LETHD.PRN file, the printer encountered the form feed escape code before the text of the QA.TXT file and so printed and ejected the first page (LETHD.PRN), *then* printed the QA.TXT file as the second page.

I realised that if I removed the escape characters ♀←E from the ←*rB♀←E escape code string found right at the end of the LETHD.PRN file, and put them in a separate END.PRN file (see below), then preceded the text of the QA.TXT file with a positioning command to start printing it at the top of the document (for example, at position ←*p0x0y), that the printer would treat the two documents as a single page, and only *after that* register an end of page.

You can imagine how excited I was when I tried it and

it worked! This gave me the ability to do exactly what Formagic does except that I no longer needed Formagic to do it! All I had to do at this point was work out how to automate the process in Q&A.

Having Q&A do the grunt work

I first saved a copy of LETHD.PRN but without the end-of-page escape characters. I then created a file called FORMAT1.PRN containing the top-of-page position command: `←*p0x0y`. I also created an END.PRN file containing only the form feed characters that I had removed from the original LETHD.PRN file.

Next, I created an Overlay.dtf database with just two text fields:

```
Overlay: #1
Format : #2
```

The programming I added to the Overlay field looks like this:

```
>#1: If @Left(#1, 5) = "Print"
     Then {
#1 = @Lookup(#1, 1);
#2 = @Lookup(#1, 2);
#1 = @Shell("C:\Overlay.bat " + #1 + " " + #2
};
Clear(#1, #2);
@Exit
```

I added the following entries to the database's Lookup table:

```
Key                 1               2

Print Letterhead    Lethd.prn       Format1.prn
Print Invoice       Invoice.prn     Format2.prn
Print Statement     Statmnt.prn     Format2.prn
and so forth…
```

I then created this Overlay.bat batch file (called by the @Shell program above):

```
C:
CD\Overlay
Copy %1 + %2 + QA.txt + End.prn Output.prn
Type Output.prn > LPT1
Del QA.txt
Del Output.prn
```

Finally, I created a *Print Letterhead* macro to (1) print the current document (the merge document, Print Spec, report, or whatever) to a disk file in the C:\Overlay directory as QA.txt, (2) add a record to the Overlay.dtf database where it placed, for example, "Print Letterhead" (see the Lookup Table above) in the **Overlay** field, then (3) continue.

The programming in Overlay.dtf looks up the two variables from the Lookup table, then runs the Overlay.bat batch file which combines the variable overlay file (LETHD.PRN), the variable format file (FORMAT1.PRN), the text to print (QA.TXT) and finally the END.PRN file,

creating a new combined OUTPUT.PRN file.

This combine-the-files command executed by the batch file might look like this:

```
COPY LETHD.PRN + FORMAT1.PRN + QA.TXT + END.PRN OUTPUT.PRN
```

After combining the files, the batch file prints the OUTPUT.PRN file to the LTP1 port, then deletes QA.TXT and OUTPUT.PRN so that subsequent printings do not require a "Y" in the macro to confirm overwriting the files. The result was a perfectly merged overlay on top of the Q&A document.

Another problem crops up

I was very excited by the results of this and continued to refine the procedure. The next problem, though, was that by printing a Q&A document to a disk file, you sacrifice all the formatting (such as fonts, indents, margins, and so forth) in the original document. The OUTPUT.PRN file would print the LETHD.PRN file on top of the QA.TXT file, but all the data in QA.TXT printed in the printer's default Courier font with no formatting.

I tackled this problem by adding a few more escape codes to the FORMAT1.PRN file. Here, in addition to the position command, I stored any escape codes required to format and position the text of the QA.TXT file. I'll list a few of these additional formatting commands below, together with the reasons why I needed them:

- I changed the top position of the QA.TXT file so that it started printing below the letterhead graphic (which was 1.5 inches high) by changing the position command to read: `←*p0x450y`

  This command tells the printer to begin printing what follows at the left page margin but down 450 pixels (at 300 pixels to the inch) from the top page margin.

- The merge document required 17 cpi printing, so I included the following escape command to set the pitch to 17 cpi: `←(s17H`

- I needed to indent the entire QA.TXT document five spaces in order to position its data in the overlay fields. The following escape code did the trick: `←&a5L`

- One of the documents contained boxes drawn using Q&A's Line Draw feature. When I printed it with a letterhead overlay, it printed fine except that the Line Draw characters were "converted" to dashes and other characters. This, I discovered, resulted from Q&A's symbol set and the printer's symbol set not "meshing." In order to print the lines as drawn in Q&A, I inserted the following code to change the printer's internal symbol set, on-the-fly, to PC-8: `←*c10U`

- To change the QA.TXT file's font to CG Times, I included the following escape code: `←(s4101T`

There are hundreds of these escape commands you can use (consult your LaserJet or LaserJet compatible's manual) and a complement of them can give you total control of how the QA.TXT file prints.

I also pre-designed a few FORMAT.PRN files containing canned attributes. Following are a couple of examples. Here's one named Format1.prn that merely prints the QA.TXT file at the extreme top left of the page and in CG Times: ←*p0x0y ←(s4101T

The following Format2.prn file prints the QA.TXT file one-inch down from the top of the document, sets the cpi to 17, indents the entire document by five columns, sets the symbol set to PC-8 to allow Q&A Line Draw characters, and prints the text and merge data in CG Times: ←*p0x300y ←(s17H ←&a5L ←*c10UR ←(s4101T

You can add as many of these escape commands as you need to appropriately format your text. The process brings total flexibility to your printing requirements and allows you to print any overlay on top of any Q&A output to the printer.

Although the procedure I've described explains how to *print* any overlay on top of any Q&A document (including merge documents, reports, and Print Specs), I started off by saying that the client also needed the ability to *fax* these documents. Well, now that I had my OUTPUT.PRN file, instead of printing it to LPT1, I merely printed it to *LPT3*—the *fax* port.

Next month, I'll cover using Net-Satisfaxtion and how I was able to fully automate the faxing end of the application.

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Form Printing… cont'd from page 5

someone might want to print records this way. It severely limits the form design. For example, you'd be reluctant to add extra, useful, fields such as fields for date stamping when records were added or modified because you might not want them printed. However, if yours is a simple job sheet, invoice or work order, for example, and the fields you need correspond to what you want to appear on the printed page, then this kind of printing might be for you.

Options for F2 printing
When printing a database record with F2 there can be a huge variability in how the output looks. Set your Print Options (the screen that appears when you press F2) so that *Print Preview* is set to *Yes,* and try these two options:

Print Expanded Fields—Yes
Print Field labels—No

These settings have a crucial effect on the printout. If *Print Expanded Fields* is set to No, then Q&A preserves the form layout in the printout but doesn't print any text that exceeds the field's width. If set to *Yes*, then Q&A prints all the fields in a left-aligned column. Figures 1 through 4 show examples of a simple database form printed using the four combinations of these settings:

```
┌─────────────────────────────────────────────┐
│              ┌───────────────┐               │
│              │ UNITED STATES │               │
│              └───────────────┘               │
│ STATE  : RHODE ISLAND        ABBREV. : RI    │
│ CAPITAL: Providence                          │
│ ORDER  : 13                  ORIGINAL 13 ? : Y│
│ AREA   : 1,202                               │
└─────────────────────────────────────────────┘
```

Figure 1: *Print Expanded Fields* set to *No* and *Print Field Labels* set to *Yes*— Q&A's default. This style mirrors the on-screen form, printing the fields and labels as well as any background text and Line Draw.

```
┌─────────────────────────────────────────────┐
│ STATE: RHODE ISLAND                          │
│ ABBREV.: RI                                  │
│ CAPITAL: Providence                          │
│ ORDER: 13                                    │
│ ORIGINAL 13 ?: Y                             │
│ AREA: 1,202                                  │
└─────────────────────────────────────────────┘
```

Figure 2: *Print Expanded Fields* set to *Yes* and *Print Field Labels* set to *Yes*. Q&A prints the Fields left-aligned in the order they appear on the form.

```
┌─────────────────────────────────────────────┐
│ RHODE ISLAND                      RI         │
│ Providence                                   │
│ 13                                    Y      │
│ 1,202                                        │
└─────────────────────────────────────────────┘
```

Figure 3: *Print Expanded Fields* set to *No* and *Print Field Labels* set to *No*. This is the same as Figure 1 but without the labels and background text.

```
┌─────────────────────────────────────────────┐
│ RHODE ISLAND                                 │
│ RI                                           │
│ Providence                                   │
│ 13                                           │
│ Y                                            │
│ 1,202                                        │
└─────────────────────────────────────────────┘
```

Figure 4: *Print Expanded Fields* set to *Yes* and *Print Field Labels* set to *No*. Q&A prints the fields the same as in Figure 2 but without the field labels.

When you change the settings at the *File Print Options* (F2) screen, Q&A retains them for that database during the current session only. Q&A reverts to its defaults when you end your session or begin using another database.

You can set both Print and Page defaults for this F2 type of printing at the following screens:

File / Print / Set Global Options / Change Single Form Print Defaults
File / Print / Set Global Options / Change Single Form Page Defaults

Tip: There's a bug in Q&A that shows up when you set *Single Form Page Defaults* or *Single Form Print Defaults*

after having specified a database: Q&A applies your defaults to *all* databases. This is also true with reports. For more on this, see my "All about Report Global Options" in the February 1996 issue.

> **Tip:** Empty fields are suppressed if *Print Field Labels* is set to No.

> **Tip:** Although you can set the *Number of records per page* and *Number of labels across* at the File Print Options screen, Q&A ignores these settings.

Defining your page and setting a font

By pressing F8 at the Print Options screen you can modify page dimensions and specify a header and footer. You can choose a font for F2 printing by going into the Header or Footer area of the Define Page screen, pressing Ctrl-F9 and selecting a Regular font. Only the regular font is applied, you can't use multiple fonts for single form printing. (Use a Print Spec if you want multiple fonts.)

> **Tip:** There is yet *another* bug in Single Form Page Defaults. You seem to be able to specify and save a default font for form printing, but actually you can't.

> **Tip:** If you select a proportionally-spaced font and print with *Expanded fields* set to *No* (the same layout as the screen form), you're likely to be disappointed with the result. It's best not to specify a font and let Q&A print using your printer's default font—which will probably be monospaced Courier.

> **Tip:** You can change the font size by changing the *Characters per inch* setting at the F8 Define Page screen. This setting is ignored, though, if you specify a proportional font, such as Times.

F2 form printing pagination

When you print a record with Expanded Fields set to No (Q&A's default), you might find that you get *two* pages of the database form to one sheet of paper with a lot of extra white space at the bottom of page 2. Here in Europe, we can fit *three* pages onto a sheet of the longer standard A4 paper. Here's how:

A4 paper:	Page length 11.69" x 6 lines per inch	= 70 lines
HP LaserJet	Unprintable region	
	0.5" top and bottom (=1")	(- 6 lines)
	Total number of printable lines	= 64 lines
	Q&A form page is 21 lines long, so 2 pages	= 42 lines
	3 pages	= 63 lines

So, to fit three form pages on a single sheet of paper *the combined top and bottom margins must be no more than 1*—that is, either a header or footer of just one line. You can use that one margin line for a header identifying the database or a footer showing the print date.

However, the sums don't add up so well for the USA:

US Letter paper:	page length 11" x 6 lines per inch	= 66 lines
HP LaserJet	Unprintable region	
	0.5" top and bottom (=1")	(- 6 lines)
	Total number of printable lines	= 60 lines

As you can see, US letter paper isn't long enough to print a three-page Q&A form of 63 lines. To get three form pages per printed page you can either select a smaller font size (such as 12 cpi), specify a page length of 63 lines with zero top and bottom margins, or specify a longer page length. Remember, increasing the page length at the Define Page screen causes Q&A to decrease the spacing between the lines, enabling you to print more lines per sheet of paper. Accordingly, you should be able to comfortably print three form screens per page with your default printer font (Courier, in most cases) if you leave the *Characters per inch* setting at 10, set the *Page Length* to 66, and specify a couple of lines at most for the header or footer.

> **Tip:** Suppose you have a 10-page form, but want to print just the first page or two. How do you do it? At the Print options screen, set the *Type of Paper Feed* to *Manual*. You will then have to confirm each page before Q&A sends it to the printer. You can say "Yes" to the first page, then press escape to abort the rest of the printing. Alternatively, you can design a Print Spec.

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Print *Four* Form Pages Per Sheet

If your database form consists of four screen pages and you don't mind a bit tighter than usual line-spacing., you can have Q&A print all four pages to a single sheet of standard *letter-size* paper. Go to *File / Print / Set Global Options / Change Single Form **Page** Defaults* for the database and make the following changes:

Page Width = **90**	Page Length = **85** (or a bit higher)
Left Margin = **5**	Right Margin = **90**
Top Margin = **0**	Bottom Margin = **0**
Characters per inch = **12**	

To optionally print the form in boldface for easier reading, type 27,40,115,51,66 on the *Printer Control Codes* line at the *Change Single Form **Print** Defaults* screen. *—Ed.*

Wide Pick-lists...cont'd from page 4

```
If @Len(Temp1) > 1 Then Status = Temp1;
Clear(Temp1)
```

Codes.bat batch file
```
Echo off
q:\data\dtfdata q:\data\hclscode q:\data\codes.qax
c:\windows\temp\codes.txt
q:\data\dtfdata q:\data\hclscode q:\data\codes2.qax
c:\windows\temp\codes2.txt
copy c:\windows\temp\codes.txt +
c:\windows\temp\codes2.txt
c:\windows\temp\codes.txt
exit
```

Codes2.qax *(Selects Status codes lower than "A")*
```
n=0
SELECT=Status < "A"
```

```
SORT=30
FORMAT=R
100 Status
```

Conclusion

DTFDATA and DTFTALK are not for the casual Q&A user. They're really developer tools. As such, I stress the importance of a careful reading of the documentation as well as a thorough familiarity with the demo application (both of which you can download from John's Web site at www.johntdow.com). John has thoughtfully designed into these very useful utilities an almost overwhelming array of configuration and usage options. This makes them highly versatile but fairly daunting to the newcomer.

Tom Marcellus has served as editor of *The Quick Answer* since its inaugural June 1990 issue.
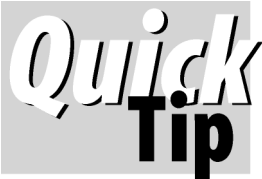
Quick **Tip** — Retrieving Records by Alpha Range

When retrieving (or including, as in a report) groups of records by alphabetical ranges, such as by last name, company name or the like, most people get the starting range right but many goof up on the ending range. Here's a three-range example that will retrieve the correct records for each group over the entire alphabet:

```
A through F   >=A..<=Fz
G through O   >=G..<=Oz
P through Z   >=P..<=Zz
```

It's those range-ending "z's" that often stump folks.

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