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The No-Overhead Way to Fax from Q&A

JEFF NITKA

If you're printing your documents then feeding them into a fax machine, you're wasting time and paper. Jeff's client—an outside sales force—needed a way to fax quotations and other Q&A documents from their notebook PCs. The application had to be brainlessly easy to use, and keep track of all faxes sent.

Faxing documents directly from your PC is a real time-saver. You don't need a printer or fax machine—all you need is a fax/modem and faxing software. Unfortunately, the only fax option Q&A for DOS supports is the Intel Connection CoProcessor or SatisFAXtion board, which most of us don't have. Instead, we have a fax/modem and the fax software that came bundled with it. With many of the popular fax/modems, that fax software is likely to be QuickLink II from Smith Micro. (See the sidebars, "What to Do If You Don't Have QuickLink II" and "Just About Any Fax/Modem Should Do.")

An easy-to-use, no-overhead Q&A faxing system needed

QuickLink II can send faxes several ways. The usual way is via a pop-up terminate-and-stay-resident (TSR) program. My client—an outside sales force—couldn't use this option because it meant having to load QuickLink's fax drivers into conventional memory before starting Q&A, thus depriving Q&A of 60K even if no faxes were sent. Users couldn't afford to sacrifice that much memory. Plus, they needed an easy way to track, by customer name, date, and other criteria, all faxes sent.

Fortunately, QuickLink II provides another option. The utility comes in

Continues on page 3

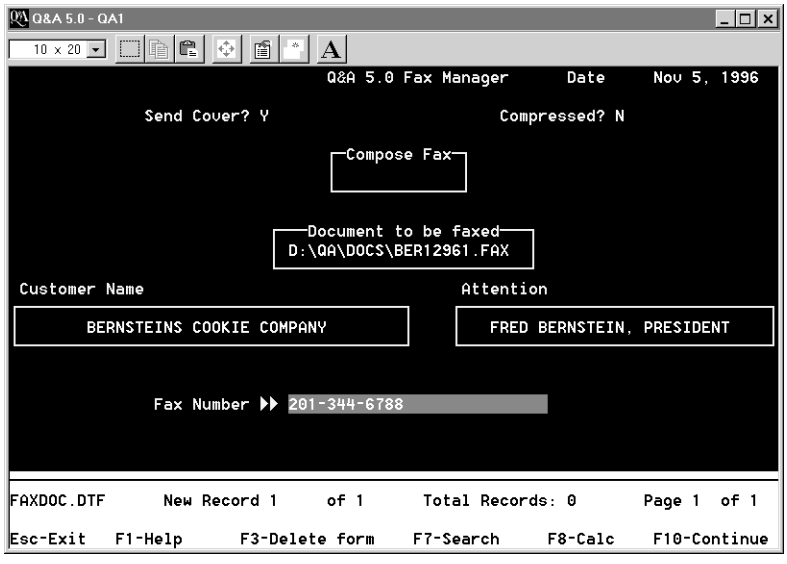

Figure 1. Ready to send a fax from FAXMAN.DTF.

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Don't Suffocate Q&A Just to Send a Fax

TOM MARCELLUS, EDITOR

YOU'D like to fax documents from Q&A, but you don't have an Intel Connection CoProcessor or SatisFAXtion board—the only faxing options Q&A for DOS supports.

You do have a fax/modem, though, and it came with QuickLink II, a faxing utility from Smith Micro bundled with many of the popular modems. The problem is, if you use QuickLink in the usual way, you'll have to sacrifice 60K of conventional memory. If you can afford to deprive Q&A of that much memory, fine. But if you can't, there's another solution—and it's a humdinger.

Jeff Nitka found a way to fax via QuickLink II (and Smith Micro's HotFax for DOS) without having to exit Q&A, load (then unload) the fax drivers, or sacrifice memory. His FAXMAN database—which you can create from scratch or obtain in an advanced ready-to-use version from Marble Publications—is quite an amazing piece of engineering. Because it's a Q&A database, FAXMAN has a familiar look and feel. You simply fill in the fields using predefined selection lists, select the document to fax (or compose your fax message right in the record), and press Enter to fax it. FAXMAN takes care of everything else, including saving a record of every fax you send.

If you've been looking for a no-overhead Q&A for DOS faxing solution, check this one out.

The problem with Keyword reports is they can give you too much information. You want a report that includes only the records containing a particular Keyword value. You're sure you specified just those records in the report's Retrieve Spec, but out comes a report that includes all the Keyword entries. For reports that include only the Keywords you specify, you'll need a workaround like the one **Bill Halpern** came up with.

There's another kind of report that's a bear to coax from Q&A—one that includes only the latest or earliest record within multiple groups or categories of records. Suppose you want a report that shows the results of each salesperson's latest visit with a customer—or, if you're a salesperson, only the record for the latest visit with each of your clients. If you have 20 clients in a database containing hundreds of dated call records, how do you select only the most recent record for each client? I'll show you some derived column magic that does the trick. **QA**

The Quick Answer™

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The No-Overhead Way to Fax . . .

Continued from page 1

DOS and Windows versions. Most of the DOS version's features can be invoked via DOS command line switches, which means you can control them via a batch file. By having Q&A *create* that batch file on-the-fly, you can compose and send your faxes from Q&A without giving up any conventional memory.

The FAXMAN.DTF database I created (see **Figure 1**) not only lets you fax from Q&A, it keeps of track all faxes sent. With FAXMAN, you don't have to know any QuickLink commands—the programming takes care of all that. What's more, you can compose your faxes right in the database record if you like, and fax them from there.

I'll show you how to create and use this handy fax database with QuickLink II for DOS (or HotFax for DOS). It works whether you're running Q&A 5.0 in DOS or in Windows. You can purchase a ready-to-use and more advanced version of the FAXMAN application from Marble Publications. See the "Resources" sidebar at the end of the article.

How FAXMAN works

With your FAXMAN application up and running, you'll send a fax simply by adding a record to the database. The program asks if you want to include a predesigned cover sheet (the QuickLink documentation tells you how to create one), and if you want to compress the fax text (17 cpi vs. the default 10 cpi).

You can compose the text of your fax right in the database record (as you'd compose and send an e-mail message), or fax a document stored on your hard disk. For the latter, you enter the path and name of the document file, and the program gives you the option to edit it (in the record) before faxing it.

You then enter the name of the fax recipient, or choose it from a pop-up selection list. Xlookups retrieve the relevant data—including the fax number—and you tell FAXMAN to send the fax. FAXMAN's programming creates SEND.BAT—a batch file that tells QuickLink how and where to transmit your fax. When the fax has been transmitted, you're returned to Q&A.

FAXMAN makes creating and sending faxes about as easy as it could be, and keeps a record of every fax you send.

Configuring QuickLink

When you install just the DOS version of QuickLink II, it offers to create a C:\QL2FAX directory. I'll assume that's where you've installed it. It also offers to add the QL2FAX directory to the Path command in your AUTOEXEC.BAT file, and modify your AUTOEXEC.BAT file to load QuickLink's fax drivers during boot up. FAXMAN

What to Do If You Don't Have QuickLink II

QuickLink II is supplied only with fax/modems—you can't purchase it separately. However, Smith Micro sells HotFax for DOS, which is identical to QuickLink II except for a few minor differences.

When you configure HotFax, you select your fax/modem from a comprehensive list. Unlike QuickLink II, HotFax lets you suspend everything until the fax transmission is complete, so you don't need the Pause command in QAFAX.BAT.

Here's a QAFAX.BAT batch file you can use with HotFax:

```
echo off
cls
cd\qa5
qa
:loop
if not exist c:\send.bat goto end
call SEND.BAT
del c:\send.bat
cd\qa5
qa -m1
goto loop
:end
cd\hotfax
call sndfax /nomsg /rsch /all
cd\
cls
```

The optional *-m1* switch runs the following Alt-1 autostart macro that returns you to the same FAXMAN record when fax transmission is complete. If you don't need this, just delete the switch:

```
<begdef><alt1><name>"alt1"<vidoff>fsfaxman<enter>max
<enter><ctrlf5><f10><enddef>
```

Finally, if you're using HotFax, you'll have to replace the final section of the Fax No field's program (see **Listing 2**) with the following code:

```
         Code = "cd\HOTFAX
echo    Converting file...please wait...
CONVERT C:\FAXGEN.TXT /I:TEXT
cls
echo    Calling HOTFAX SendFax ...
Call SNDFAX /FILE: C:\FAXGEN.HFX /FAX#:" +
@txt(@len(Fax Number)=10,"1") + Fax Number + " /
I:TEXT";
If   Send Cover
then Code = Code + " /TO:" + Customer Name + " /
ATTN:"
+ Attn
else Code = Code + " /NOCVR";
Code = Code + " /NOMSG";
@Macro("Send Fax") }
       else Goto Fax No }
```

To order HotFax for DOS ($79.95), call Smith-Micro at 800-964-7674. Be sure to specify the *DOS* version; otherwise, they'll ship you the Windows version.

doesn't require either, so just say No.

After installing QuickLink, you'll need to tell it your faxing preferences. Start the utility by changing to the QL2FAX directory, and entering QL2FAX. From the QuickLink menu, Pull down the Setup menu and chose *Line Settings*. Set the baud rate no higher than 19200, then save the setting.

Pull down the Setup menu again, and choose *Send Fax Setup*. Put check marks next to *Dedicate CPU while sending a fax*, and *Delete fax files after sending*, then save these changes (see **Figure 2**). Dedicating the CPU speeds fax transmission. Deleting fax files (files with .QFX extensions) removes them once transmission is complete. Since you'll already have a copy of any fax you send, there's no point in retaining these QuickLink-generated files.

While QuickLink is preparing and transmitting a fax, it uses about 60K of conventional memory. When transmission is complete, it returns the 60K to DOS and Q&A.

Handling a QuickLink quirk with a batch file

Though you can run QuickLink's QLDRVR.EXE fax driver via an @Shell command or as an Alternate or External Program, it leaves you at the DOS prompt instead of returning you to Q&A. You can work around this by starting Q&A from a batch file. (See **Listing 1**.) Name the batch file QAFAX.BAT, and save it to your root (C:\) directory. (Be sure your AUTOEXEC.BAT file contains C: in its Path statement.)

If you run Q&A from an icon in Windows, simply replace QA.COM with QAFAX.BAT on the icon's command line. This way, the icon starts Q&A via QAFAX.BAT. The batch file commands in Listing 1 assume that your Q&A directory is C:\QA5, and your QuickLink II for DOS directory is C:\QL2FAX. Modify the commands as necessary.

Listing 1. The QAFAX.BAT batch file that starts Q&A and knows when you want to send a fax.

```
echo off
cd\qa5
qa
:loop
 if not exist C:\SEND.BAT goto end
call SEND.BAT
del C:\SEND.BAT
cls
echo  ******************************************
echo            Do NOT touch keyboard
echo       until fax transmission complete.
echo           After END TRANSMISSION
echo     (or an error message) appears, THEN
pause
cd\qa5
qa
goto loop
:end
cd\ql2fax
call sndfax /rsch /nomsg
cd\
cls
```

Just About Any Fax/Modem Should Do

Out of the box, QuickLink's modem initialization string is set for the fax/modem that it came with. If you're using a different modem, you might have to modify this string. You can find out by performing this quick test:

1. Start QuickLink by changing to the QL2FAX directory, typing *QL2FAX*, and pressing Enter.

2. Choose OK, and you'll be prompted to register the software.

3. At the top of the screen you'll see QuickLink's default modem initialization string, followed by *OK* if your modem recognizes it, or *ERROR* if it doesn't

If QuickLink reports *ERROR*, you'll have to change the string. QuickLink's documentation includes the following generic string that works with many modems. (I tried it and it worked with three PCs whose modems didn't like the default string):

```
AT&FE1L1V1&C1&D2S0=0S7=90
```

Test this generic string by typing it on the screen, and pressing Enter. If *ERROR* appears, contact the modem maker's technical support for a workable string. If QuickLink reports *OK*, make the generic string the default string. To do this, pull down the Setup menu, select Modem Setup, replace the default string with the generic string, save the setting, then quit QuickLink.

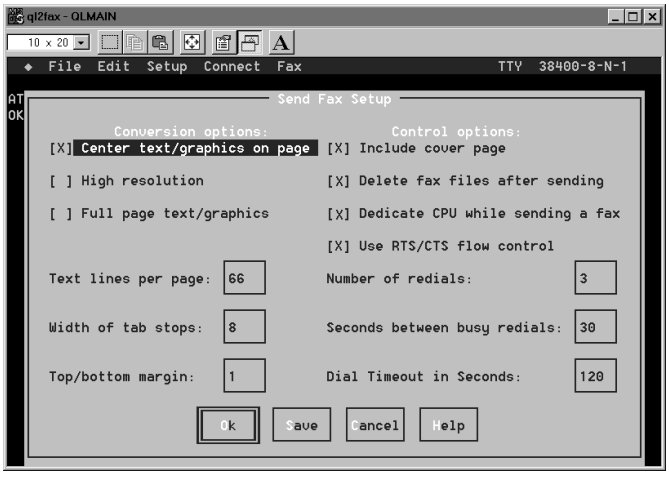


Figure 2. QuickLink II's Send Fax Setup screen.

Since you're starting Q&A via QAFAX.BAT, when your faxing macro (as you'll see) exits Q&A, control returns to QAFAX.BAT, which looks for SEND.BAT. If SEND.BAT exists, it means you've just told FAXMAN to send a fax. In this case, QAFAX.BAT runs SEND.BAT, which loads QuickLink's fax driver. Your document is converted to fax format and transmitted. Control then returns to QAFAX.BAT. SEND.BAT is deleted, and when transmission is complete you can press any key to return to Q&A.

When you *manually* exit Q&A, QAFAX.BAT looks for SEND.BAT, doesn't find it, and removes any scheduled faxes that haven't been sent. (This can happen if a fax failed in transmission for some reason.) If you want QuickLink to send scheduled faxes at a later date, simply delete this line.

Create your Q&A fax merge document

In Write, create a merge document named FAXGEN.DOC to merge the information from the FAXMAN.DTF record. The only thing FAXGEN.DOC *must* contain is the following merge programming expression:

```
*Pg {Comp Doc + @Insert(Doc Name)}*
```

Notice that FAXGEN.DOC's *Pg* command handles both cases. If you've composed your fax in the FAXMAN record, the text of the fax is in the Comp Doc field and the Doc Name field is empty. If, on the other hand, you've specified a document to fax, its path and name will be in the Doc Name field and the Comp Doc field is empty.

If you choose not to transmit a separate QuickLink cover sheet, you can combine your cover sheet and fax message. Simply design your FAXGEN.DOC merge document along the lines of **Figure 3**, and it looks like **Figure 4** when it emerges from the recipient's fax machine.

When you've finished designing your FAXGEN.DOC merge document, press F2 for the Print Options screen, and choose print to DISK. On the *Name of merge file* line, enter the path to FAXMAN.DTF (C:\QA5\DATA\FAXMAN.DTF, for example). Press F9 to return to the document, then press Shift-F8, and save it to your root directory as C:\FAXGEN.DOC.

Create the FAXMAN database

Table 1 shows the required FAXMAN.DTF fields in the order they must be placed on the form to accommodate the programming in Listing 2.

Table 1. Required fields for FAXMAN.DTF.

Name	Field Type	Custom Attributes
RecNo	Numeric	Speedy, Read Only
Date	Date	Speedy, Initial Value, @Date in Date field
Send Cover	Yes/No	Initial Value, Y or N
Compressed	Yes/No	Initial Value, N
Comp Doc	Text	None
Doc Name	Text	Initial Value, default path such as C:\QA5\DOCS\
View	Text	None
Copy	Yes/No	Read-only
Name	Text	None
Cust List	Text	Read-only
Attn	Text	None
Fax No	Text	Field Template, such as ###-###-############## for faxing outside the U.S.
Code	Text	None

Listing 2 shows the programming for the FAXMAN.DTF fields. The program in the Fax No field creates the SEND.FAX batch file, so enter the code exactly

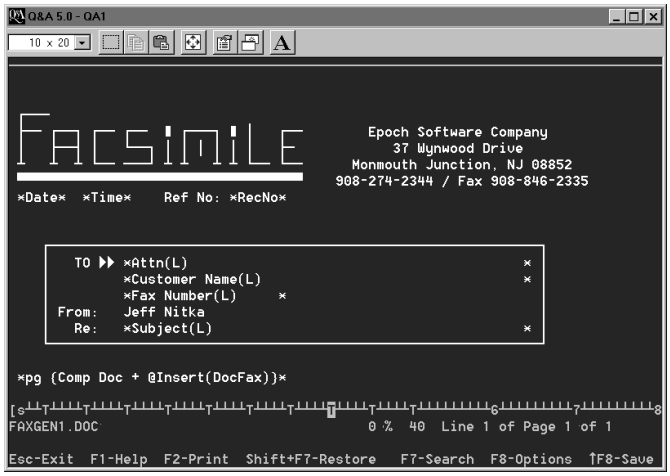


Figure 3. A FAXGEN.DOC merge document with a built-in fax cover sheet.

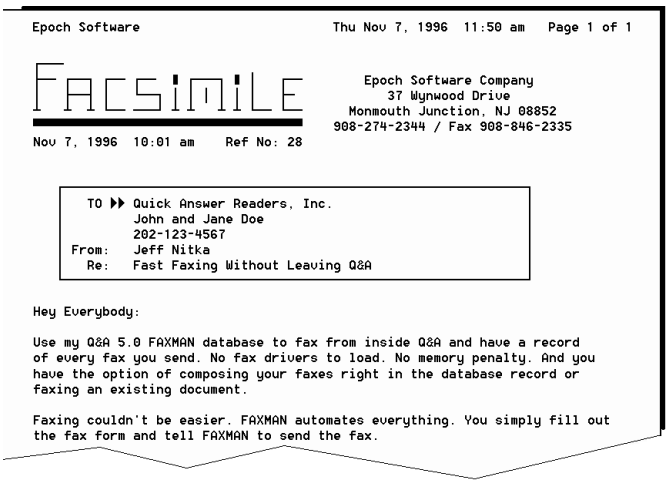


Figure 4. With the Figure 3 FAXGEN.DOC merge document, your fax will print like this on the recipient's fax machine.

as it appears, with a carriage return at the end of each line. (The FAXMAN.DTF database available from Marble Publications is pre-preprogrammed and ready to use.)

Listing 2. Programming for FAXMAN.DTF. A "==>" indicates the line was wrapped for publication. When typing the program, omit the "==>" and continue typing the line.

```
RecNo:
< if   @add and RecNo = ""
then RecNo = @Xlr(@fn,9999,"RecNo","RecNo") + 1;
Cnext

Send Cover:
<  if @add then
@msg("Do you wish to send a cover letter? [Y/N]")

Compressed:
< if @add then
{ Send Cover = @txt( @Ty( Send Cover ),"Y") +
               @txt( not @Ty( Send Cover ),"N");
@Msg("'Y' for 17 characters per inch" +
     ", 'N' for 10 cpi") }

Comp Doc:
< if @add then
{ Compressed = @txt( @Ty( Compressed ),"Y") +
               @txt( not @Ty( Compressed ),"N");
  if Copy then { Copy = 0; @Fedit } else
  if @AskUser("Do you wish to compose fax here?",
     "(YES opens up the editor, NO prompts you",
     "to specify an existing filename to fax)")
  then { Doc Name = ""; @Fedit }
  else { Comp Doc = ""; Goto Doc Name }
}
else
if   Comp Doc <> ""
then if @AskUser("Record contains composed ==>
     document.","Do you wish to view it?","")
     then @Fedit
     else Goto Name
else Goto Name

Doc Name:
< if   @add then
  if   Comp Doc <> ""
  then { Doc Name = ""; Goto Name }
  else @Msg("Enter the path & document" +
            " filename to send.")

View:
<  if @add then
if Comp Doc <> ""
then { Doc Name = ""; Goto Name } else
if   Doc Name = ""
then Goto Doc Name else
if   @Insert(Doc Name) = ""
then {@MsgBox(Doc Name+" does not exist.","","");
      GoTo Doc Name } else
if   @AskUser("View ", Doc Name + " ?","")
then { View = @Insert(Doc Name); @Fedit }
 else { View = ""; Goto Copy }

Copy:
< if @add then
{ View = "";
if   Comp Doc = ""
then {@Msg("You can edit "+
           Doc Name+" and send it");
     if @AskUser("Do you wish to edit "+Doc Name,
                 "in the COMPOSE FAX editor?","")
     then {Comp Doc = @Insert(Doc Name);
           Doc Name = "";Copy = 1;Goto Comp Doc}}
     else @Color(Comp Doc,14,6) }

Name:
< if @add then
{
 Cust List =
 @Us("List Customer Names,Manual Entry");
 if   Cust List = "" then Goto Name  else
 if   @lt(Cust List,4) = "LIST"
 then @Msg("Type as many letters of customer name"
           + " that you know")
 else @Msg("Enter the customer name to whom you"
           + " wish to send a fax") }

Cust List:
< if @add then
if   @lt(Cust List,4) = "LIST"
then {Cust List =
      @XUsR("Customer","Name","Name",Name,Name);

      if   Cust List = ""
      then Goto Name
      else Xlu("Customer",Cust List,"Name","Name",
               Name,"Contact",Attn,"Fax Number",
               Fax No);

      if   @error then {@Msg(""); GoTo Name} else
      if   Fax No = ""
      then if @AskUser("No fax number exists in" +
              " your customer file","for your " +
              "selection. Do you wish to",
              "continue anyway?")
           then { @Msg("The TO field is optional" +
                  " unless SEND COVER is marked Y");
                    Goto Attn }
         else Goto Name;

    @Msg("The TO field is optional unless SEND" +
         " COVER is marked Y"); Goto Attn }
else { @Msg("The TO field is optional unless " +
          "SEND COVER is marked Y"); Goto Attn }

Attn:
> if @add then
{ if Send Cover
  then if Attn = ""
       then { @MsgBox("You are sending a cover ==>
       letter.","This field cannot be left blank","");
              Goto Attn }
       else Goto Fax No
  else Goto Fax No }

Fax No:
>
if @add then
if Fax No = ""
then { @msg("FAX NUMBER cannot be blank!!");
       Goto Fax No }
else
{ if  @in(".10.7.","."+@Str(@len(Fax No))+".")=0
  then
  if Not @Askuser("Your fax number doesn't " +
         "conform to a 7 digit","(no area code) "
         + "or 10 digit (area code) format.",
         "Should the fax be sent to fax " +
         "number entered?")
  then Goto Fax No;

  if @AskUser("Do you wish to send a fax to",
              Name + " at", Fax No + " ?")
  then { if Comp Doc <> "" then Doc Name = "";
         Code = "cd\ql2fax
echo    Converting file...please wait...
CONVERT C:\FAXGEN.TXT "+" /x /s " +
@txt(Compressed,"/k") + "
cls
echo    Calling Quicklink II SendFax ...
Call SNDFAX /f: C:\FAXGEN.QFX /fn: " +
@txt(@len(Fax No)=10, "1") + Fax No + " /nomsg";
if   Send Cover
then Code = Code + " /CP /TO: "+ Name
                 + " /ATTN: " + Attn;
@Macro("Send Fax") }
       else Goto Fax No }

Code: < if @update then Goto Comp Doc
```

What the FAXMAN program does

Here's a brief description of the steps the Listing 2 program performs:

Resources

Using this article, you can create a working Q&A fax manager. The ready-to-use FAXMAN fax manager (see **Figure 5**) available from Marble Publications includes several advanced features:

- Works with QuickLink II for DOS or HotFax for DOS.
- Installs quickly. Includes everything you need to start faxing from Q&A right away.
- No programming required. You customize FAXMAN with a few simple entries in the lookup table.
- Lets you specify a default fax number prefix, such as 1-800-ATT, a default suffix, such as a credit card number, and the delay (in seconds) the PC should wait before activating the suffix.
- Displays the filenames in any directory on your hard disk, so you can quickly select the document to fax. (You can optionally compose your fax message right in the database record.)
- Lets you specify the page length of the document you're faxing. (This article assumes a default 66-line page).
- Extensive error checking and detailed help messages.
- Documentation included.

To order the FAXMAN application, send $49 plus $2 shipping to Marble Publications, PO Box 9034, Gaithersburg, MD 20898. If paying by credit card, you can fax your order to 301-424-1658.

You'll receive the advanced ready-to-use version of FAXMAN.DTF for QuickLink II or HotFax, the modifiable FAXGEN.DOC merge document pictured in this article, the QAFAX.BAT batch file, the *Send Fax* macro, and a document file that answers any questions you might have on configuring and using FAXMAN.

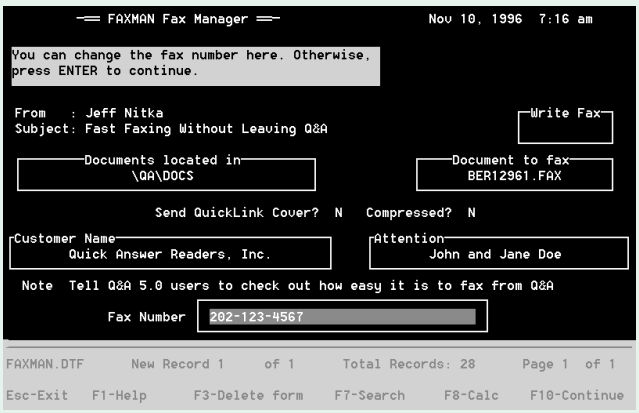


Figure 5. The ready-to-use FAXMAN database from Marble Publications includes everything you need to start faxing from Q&A right away.

1. RecNo—Assigns an incremented record number so the *Send Fax* macro can find the highest (most recent) FAXMAN record.
2. Send Cover and Compressed—Both prompt for a Yes or No.
3. Comp Doc—Allows you to compose or edit your fax in the field editor, similar to an e-mail message editor.
4. Doc Name—Prompts for a document filename to fax if Comp Doc is empty.
5. View—Performs some checks on field values, then asks if you want to view the document named in the Doc Name field.
6. Copy—Lets you optionally edit the document named in the Doc Name field.
7. Name—Prompts for the method to obtain fax recipient information (a pop-up selection list or manual entry).
8. Cust List—Displays the pop-up list and verifies the format of the fax number retrieved.
9. Attn—If Send Cover is Yes, but Attn is blank, you're prompted to correct the situation.
10. Fax No—Tells you the fax is ready to send. Creates the SEND.BAT batch file, then runs the macro that starts the faxing process.

FAXMAN's programming is designed to execute only when adding a record. This way, you can search the database to find out about the faxes you've sent without triggering the programming.

The Fax No field's program is the key to the process because it creates the SEND.BAT batch file, then invokes the following *Send Fax* macro. The macro assumes that Automatic Execution (Utilities / Global Options) is set to Yes:

```
<begdef><nokey><name>"Send<sp>Fax"<vidoff><f11><capsf10>
<esc>wc<f12><ctrlf8><home>c:\send.bat<enter><lft><enter>
<esc>g<enter><enter><f7>call<sp>SNDFAX<enter><sp><enter>
M<f7><end><rgt><del><end><rgt><del><end><rgt><del><end>
<rgt><del><ctrlf8><enter><esc>g<home>C:\FAXGEN.DOC
<enter><f2><f10><enter><home>C:\FAXGEN.TXT<enter><lft>
<enter><home><home>max<enter><ctrlf5><f10><esc>g<home>
C:\FAXGEN.TXT<enter><enter><ctrlend><f3><pgdn><f10>
<ctrlf8><enter><esc><esc>x<enddef>
```

The *Send Fax* macro performs these steps:

1. Copies the batch file (created by FAXMAN) to the Clipboard, then saves and exits the record.

2. Opens a blank Write document, pastes the batch file text, and saves it as an ASCII file named SEND.BAT.

3. Escapes from SEND.BAT, reopens it to remove the margins and unwanted carriage returns, then resaves it.

4. Loads the C:\FAXGEN.DOC merge document, and prepares to print it to disk to a file named C:\FAXGEN.TXT.

5. Merges the FAXMAN.DTF fax record.

6. Opens FAXGEN.TXT and deletes superfluous carriage returns at the end of the file. (This prevents QuickLink from interpreting them as the beginning of a new page.)

7. Resaves FAXGEN.TXT and exits Q&A, passing control to the QAFAX.BAT batch file.

QAFAX.BAT detects that SEND.BAT exists, runs it, then deletes it. As QuickLink transmits the fax, it displays a status message at the top of the screen. You're prompted to wait until fax transmission is complete before pressing any key to return to Q&A. **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, the Q&A program debugging utility available from Marble Publications.

Quick Tip

Large Hard Disks and Q&A

DOS

Some Q&A users are reporting receiving *Not enough disk space to complete this operation* after upgrading to one of the newer and larger 2G+ hard disks, even when the disk has plenty of free space. The problem isn't with Q&A—it's with DOS. DOS 6.22 and earlier isn't designed to handle drives larger than 2G—more specifically, drives with more than 1024 cylinders.

On a 4G drive, the problem crops up when the space occupied by files approaches 2G. DOS thinks it has run out of space, even though more than 2G is still available. The solution is to make drive partitions smaller than 2G. Partition size information, however, depends on the disk manufacturer and the utility you're using to obtain it. So it's safer to make your partitions 1.9G or less.

To repartition a disk without destroying data, you can use Partition Magic from PowerQuest (800-757-5060, $49.95). A side benefit of smaller partitions on DOS drives (not necessarily Novell drives) is less wasted space because of the way DOS allocates file space. In a 2G to 4G partition, DOS assigns a minimum of 64K to each file, no matter how small the file is. Thus, your tiny CONFIG.SYS file that DOS says is 471 bytes will actually consume 65,536 bytes of disk space. We recently repartitioned the 2.1G drive on a client's new computer, creating two partitions of 1003M each. Partition Magic reported 45M of recovered disk space on a drive that contained just 435M of files to begin with! Had we chosen even smaller partitions, we would have recovered even more disk space, as the following table shows:

Partition Size	Minimum Cluster Size
16-127M	2KB
128-255M	4KB
256-511M	8KB
512-1023M	16KB
1024-2047M	32KB
2048-4095M	64KB

Gordon Meigs

Tweaking Keyword Reports for the Output You Need

Bill Halpern

Keyword reports can be an indispensable management information tool, but they're prone to give you far more information than you need or want. When you need to restrict which Keyword values are included, you'll need a workaround.

A Keyword field is a special kind of Q&A database field you can use to store multiple values. There's adequate information in the *Q&A User Guide* on Keyword fields and Keyword reports, so I won't belabor them here. What I want to show you is how to design a non-Keyword report that uses a Keyword field to give you just the information you need, and no more. If this sounds confusing, just read on and all will be revealed.

I'll use the insurance industry to illustrate my point. Suppose you run an insurance brokerage firm. You have numerous insurance agents, each one representing a variety of carriers on a variety of policies. You might maintain an AGENTS database with a Keyword field to store the names of the carriers any agent might represent. This way, if you wanted to retrieve the records of all the agents who represent Security-Connecticut, for example, you could type *..Security-Co..* in the Keyword field at AGENTS' Retrieve Spec.

To show this information in a report, though, you'd have to go about it differently.

You could start by entering *..Security-Co..* at the AGENTS Retrieve Spec, just as you did for the record search. Then, at the Column/Sort Spec, you could use the Keyword field containing the carriers represented. If you typed *10K* in this Keyword field, making it the first column in the report, Q&A would generate a Keyword report that looks like **Figure 1**.

What happened here? You wanted to know only which agents represented Security-Connecticut, but because of the way Keyword reports work, the report also gave you information on all the other companies—and you're not interested in that.

The trouble with Keyword reports like this is that you can't restrict the report to the one company specified in the Retrieve Spec. All other values in the Keyword field of the selected records are included as keys in the first column.

Wouldn't it be nice if you could get a keyword field to generate a report like the one shown in **Figure 2**, showing only the information on the Keyword entry you're after? And wouldn't it be better still if you could select the Keyword company from a pop-up list? Well, with Q&A 5.0 and a little set up, you can.

Using an interim database

First, you'll need a small interim database to enter your search criteria. Name it SEARCH.DTF, if you like. SEARCH.DTF has just three small text fields: one to store the company name, one for the company ID code, and one for a "permanent" marker (a *1* in the field). You can optionally include in the design some brief instructions that tell the user what the database expects for input. You can design the form along any lines you like, but if you want to use a pop-up selection list (either a Userselect or XUserselect list), remember where the list appears on the form. My preference is a layout along the lines of **Figure 3**, where the three fields are hidden behind the selection list.

When you've created the database, add a new record to it. Type a "1" in the last field, then save the record and exit.

Prime Company

Company	List Of Active Agents	Agent Comp ID	Represented By Agent
Aetna Life Insurance and Annuity Co.	Finkle, Steven	6204	Lincoln Benefit Life
Lincoln Benefit Life	Carney, Timothy	6204-021	Lincoln Benefit Life
	Finkle, Steven	6204	Lincoln Benefit Life
	Franklin, Howard	4712-056	Lincoln Benefit Life
	Jones, Kevin	4712063	Lincoln Benefit Life
	Maidenbaum, Gail	6204-017	Lincoln Benefit Life
	Swaim, Barry	4712058	Security-Connecticut
	Wilson, Philip	6204-019	Lincoln Benefit Life
	Zukergood, Matthew	6204-014	Lincoln Benefit Life
Physician Life	Carney, Timothy	6204-021	Lincoln Benefit Life
Security-Connecticut	Carney, Timothy	6204-021	Lincoln Benefit Life
	Crystal, Jess	6204035	Security-Connecticut
	Finkle, Steven	6204	Lincoln Benefit Life
	Franklin, Howard	4712-056	Lincoln Benefit Life
	Holstein, James	6204-038	Lincoln Benefit Life
	Jones, Kevin	4712063	Lincoln Benefit Life
	Maidenbaum, Gail	6204-017	Lincoln Benefit Life
	Swaim, Barry	4712058	Security-Connecticut
	Wilson, Philip	6204-019	Lincoln Benefit Life
	Zukergood, Matthew	6204-014	Lincoln Benefit Life
Sun Life	Maidenbaum, Gail	6204-017	Lincoln Benefit Life
United Pacific Life	Maidenbaum, Gail	6204-017	Lincoln Benefit Life

Figure 1. A standard Q&A Keyword report includes all the Keyword values in the database.

A little programming needed

For the sample programming that follows, I've numbered the field that stores the company name, #160; the one that stores the company ID, #170; and the one in which you typed the *1*, #10. The only field requiring programming is #160. Here's a sample program, followed by an explanation:

```
<#160: If @Add Then {
@Msgbox("You Can't Add","Records to this File","");
   @Exit };
If @Update Then { Clear(#160, #170);
If #170="" Then {
XUsr("Insurnce", "KeyName", "Id-no", #160, #160, #170);
XLu("Insurnce", #170, "Id-no", "Co-Name", #160)};
   @Exit }
```

In this example, the XUserselect command generates a selection list of companies in the external INSURNCE.DTF database and returns the company ID of the selected company. An XLookup then uses that company ID to find and fill in the company's name.

If you try to add a record to this SEARCH database, you'll receive an @Msgbox message saying you can't do it, and the program exits back to the File menu when you press Enter. This is why you entered the *1* in the single record before programming the database.

In Search/Update mode, the program performs the following steps:

1. Clears the fields
2. Displays the selection list of companies in the INSURNCE database.
3. Fills in the appropriate data from the selected company
4. Saves the record, then exits to the File menu

The selected company is now saved for use in the Retrieve Spec of your report for the AGENTS database.

Tweaking the report

In the report database—AGENTS.DTF in this example—you should have a keyword field for the company name, and another for the company ID. These fields store the information for each of the multiple companies represented by any agent.

The programming to auto-fill these Keyword fields is up to you, but the report has some specific requirements.

At the report's Retrieve Spec, enter the following in the Company ID Keyword field:

```
#10: ={ @XLu("Search", 1, "X#10", "X#170") }
```

This retrieval expression retrieves all the records for your report that match the Company ID you selected and saved in the one-record SEARCH database.

The key to including just the one company in the report (the Figure 2 report as opposed to the Figure 1 report) is *not* to use the Keyword field in the Column/Sort Spec, but a derived column like this instead:

```
Heading: Company
Formula: @XLu("Search", 1, "X#10", "X#160")
Column Spec: 10, AS
```

With this technique, you can avoid the Figure 1 output that includes the information you don't want to see, and print the Figure 2 report that includes just the information you're after. You can keep your valuable Keyword fields as they are, and still control what appears on your Keyword reports. **QA**

Bill Halpern is executive vice president of Professional Computer Technology Associates in Newtown, Pennsylvania. Bill has been designing and installing Q&A business applications for the past nine years. 215-598-8440, CompuServe 71023,356.

Prime Company

Company	List Of Active Agents	Agent Comp ID	Represented By Agent
Security-Connecticut	Carney, Timothy	6204-021	Lincoln Benefit Life
	Crystal, Jess	6204035	Security-Connecticut
	Finkle, Steven	6204	Lincoln Benefit Life
	Franklin, Howard	4712-056	Lincoln Benefit Life
	Holstein, James	6204-038	Lincoln Benefit Life
	Jones, Kevin	4712063	Lincoln Benefit Life
	Maidenbaum, Gail	6204-017	Lincoln Benefit Life
	Swaim, Barry	4712058	Security-Connecticut
	Wilson, Philip	6204-019	Lincoln Benefit Life
	Zukergood, Matthew	6204-014	Lincoln Benefit Life

Figure 2. A modified version of the Figure 1 Keyword report. This one shows only the information you want to see.

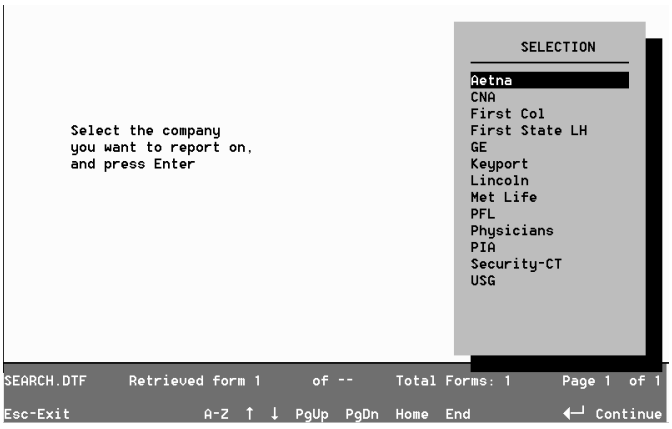


Figure 3. A one-record interim database for selecting the company to include in the report.

@Help

Edited by Dave Reid

Another Look at Random Selection

I need to prepare a test mailing for my business. Because my address database is large, I'd like to mail to a random subset of the records, then if the response warrants it, mail to the rest of the list. I know I can number the records then select, say, every 25th record, but I want something more random. Is there a way to generate a random quantity of randomly selected records?

Gene Griffith, Palmetto, Georgia

The advantage of the numbering technique is that it lets you control the number of records selected. Depending on the quantity of records in the database and the quantity you want to include in the test mailing, you could select, say, every 10th, 25th, or even fourth record. This is called an *nth name sample*.

Another random record selection technique involves performing a more obscure calculation on each record. For example, you could enter an expression like the following in the Last Name field at your Retrieve Spec:

```
Last Name: #1:{@Mid(#1, 2, 1) > @Mid(#1, 4, 1)}
```

This selects records where the second letter of the last name is greater than the fourth letter (Jones but not Smith, for example). The quantity of selected records is unknown, and therefore random. But it's not a true random selection since reusing the same Retrieve Spec retrieves the same records. It's just a simple way to cull a subset of records in a single step.

You could use a more elaborate computation. For example, you could modify the expression so that Q&A retrieves fewer—or more—records. You can even perform cross-field comparisons, like this:

```
Phone Number: {@Mid(Phone Number, 5, 1)
              = @Mid(Address, 2, 1)
```

This expression selects about one out of every 10 records—those where the fifth digit of the phone number equals the second digit of the street number. Before using Retrieve Specs like these in a mail merge, though, test the results in Search/Update to verify that the answer set is about the size you want.

[See Dave Reid's article, "Nth Name Record Selection Made Easy," in the October 1992 issue, page 8.—Ed.]

Changing Column Layouts

Sometimes I need to create letters that begin as a single column, change to two or three columns, then change back to a single column for the balance of the letter. Can Q&A do this?

Howard Gilfillan, Pittsburgh, Pennsylvania

Q&A for DOS doesn't support this kind of column-switching. In Q&A Write for Windows, after typing the single column portion of the letter, pull down the Insert menu and select Section. Click Column Layout in the Starts New section, then click the Column Layout button. In the Column Layout dialog box, increase the number of columns to two or three, then click Done. Click OK to close the Insert Section dialog box. Continue typing in the narrower column. When you're done with the multi-column section, repeat the earlier steps, but this time decrease the number of columns to one. When you return to the single column, Q&A reformats the multi-column area into columns of equal length. **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.

Reports that Show Only the Latest (or Earliest) Whatevers

Tom Marcellus

When you want to see only the oldest or most recent records within a group or category, here's a derived column technique that produces the report you're after.

DOS WIN

During a break at the Q&A Master Seminar in Colorado Springs, a database administrator from an Ohio community health care agency approached me and asked for some help designing a report.

Her agency keeps tabs on what I'll call *providers* and *clients*. *Clients* are patients registered with the agency who use its health care services. *Providers* are health care professionals the agency employs to visit clients at-home on a routine basis to see to their health care needs.

The agency works with more than a dozen providers, each of whom services dozens of clients. And it's the agency's responsibility to see that providers visit each of their clients on a regular basis.

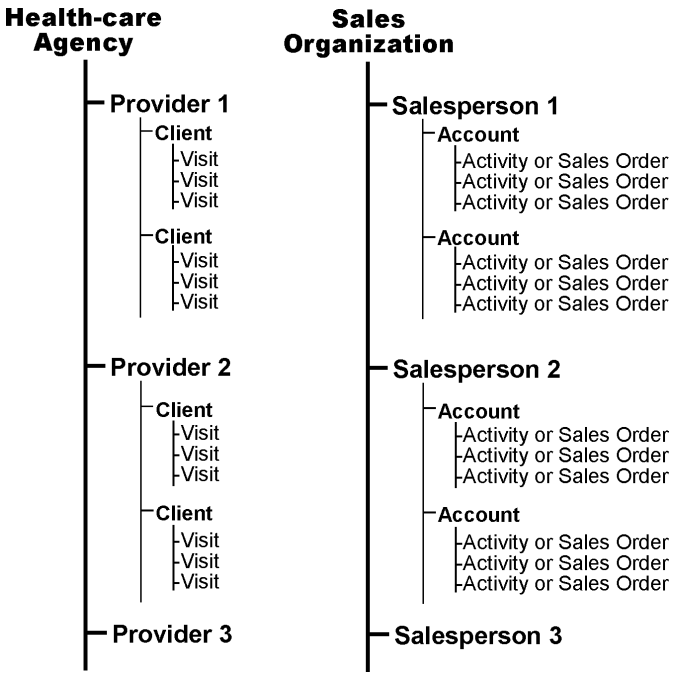


Figure 1. Relationships between the various elements in a community health care agency (left) have their counterparts in a sales organization (right).

Figure 1 (left) shows the relationships between the agency and its providers, providers and clients, and clients and visits. Figure 1 (right) shows essentially the same structure for a sales organization, with relationships between salespeople and their accounts, and activities that pertain to those accounts. The reason I illustrate them is to get you thinking about such relationships in general. If your company has similar relationships, you might need reports that can accommodate them.

Elements of the report

To keep track of provider visits to clients, the agency needs a report that shows, by provider, only the most recent visit to each client. In other words, if the provider has 30 clients under his or her care, the report would show—within whatever time frame the agency wanted to look at—the date of the provider's last visit to each client along with the result.

The report design I chose employs a series of derived columns with conditional @Text formulas. Why @Text? See the sidebar. **Figure 2 shows** a simplified example of the VISITS database the agency uses (only the pertinent fields are shown), **Figure 3** shows the *Most Recent Visits* report output, and **Listing 1** shows the Column/Sort Spec and derived columns that produce it.

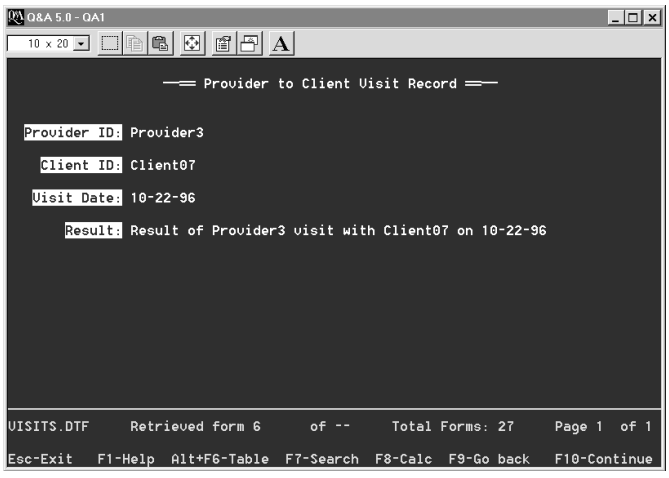


Figure 2. A sample VISITS record that shows just the essential fields. During any month, a dozen providers might visit 100 clients, resulting in 1,200 new records added to the database.

Listing 1. Column/Sort Spec and derived columns for the Most Recent Visits report.

```
Provider ID: 1,AS,I
  Client ID: 2,AS,I
 Visit Date: 3,DS,I
     Result: 4,I

Heading: Provider ID + Client ID for unique value
Formula: #1 + #2
Column/Sort Spec: 10,I

Heading: Comparison copy of Column 10
Formula: #10
Column/Sort Spec: 50,I

Heading: Comparison copy of Column 1
Formula: #1
Column/Sort Spec: 45,I

Heading: Provider
Formula: @Text((#10 <> #50 and #1 <> #45), #1)
Column/Sort Spec: 15

Heading: Client
Formula: @Text((#10 <> #50), #2)
Column/Sort Spec: 20

Heading: Last seen!this date
Formula: @Text((#10 <> #50), #3)
Column/Sort Spec: 25,F(D)

Heading: Days!since
Formula: @Text((#10 <> #50), @Date - #3)
Column/Sort Spec: 30,F(JR)

Heading: Result of last visit
Formula: @Text((#10 <> #50), #4)
Column/Sort Spec: 35
```

Report logic

The *Most Recent Visits* report is sorted by Provider ID then Client ID and includes only the most recent visit of each provider to each client. Because there might be multiple visits to a client within the date range the agency is reviewing, I use a combination value (Provider ID plus Client ID) to include only the record containing the most recent visit to any client and have Q&A throw out the rest.

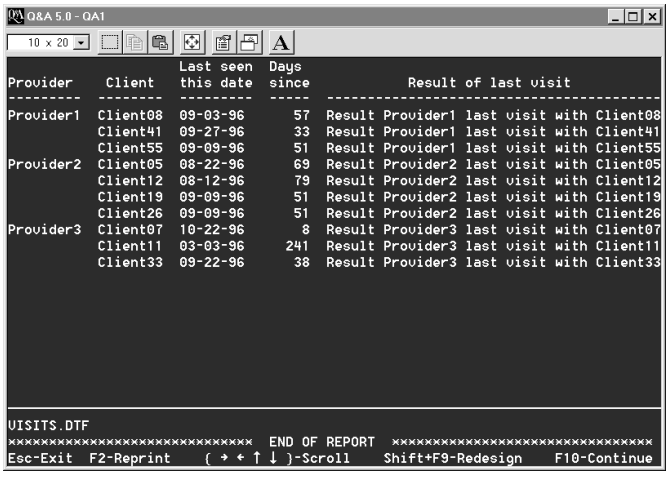


Figure 3. Output from a simplified report showing the most recent visit of each provider to each client under his or her care.

Using @Text to Conditionally Print

The @Text function is uniquely suited for reports like *Most Recent Visits* because you can use its first parameter to specify a condition, and print the value or column entry (its second parameter) only when the condition is (or isn't) true. Using @Text this way in my derived column formulas, I'm giving Q&A these instructions:

If the value (in this case, Column 10) does *not* equal the other value (in this case, Column 50 of the previous row), then do something (in this case, print the next entry). Otherwise (if the two column entries match), move on to the next column (or record), and test it the same way.

Column 15's formula, @Text((#50 <> #10 and #1 <> #45), #1), tests for two conditions—that is, the Provider ID (in invisible column 1) prints only when the Provider ID changes. It's just a cosmetic option. Without the second condition (*#1 <> #45*), the Provider ID would simply repeat on every change in the Provider ID-Client ID combination.

To do this, I make the first four columns (the actual database fields) invisible, and use derived column 10 to create the combination value. By storing a duplicate of column 10 in the second derived column (column 50), I can have Q&A—as it begins each new row of the report—check to see if column 10's entry matches column 50's from the previous row. If the values (Provider ID plus Client ID) in the two columns match, I know Q&A is about to include another record for the same provider/client combination (the next to last visit), and I can have it suppress that one.

This suppression technique, when coupled with the *descending* sort on the Visit Date field, means the only rows (or records) that print are those containing the most recent date of each provider's visit to a client. If you wanted only the earliest or oldest records to appear for each group, you'd simply specify an *ascending* sort.

For the sake of appearance, I don't want to repeat the Provider ID for each client (see Figure 3), so I store a copy of column 1 (the Provider ID) in column 45 and have Q&A also compare *those* values when starting a new row. This way, the Provider ID appears only when it changes.

Other uses

If you maintain a contact information database, where each record includes the salesperson, the customer, the

date of the visit (or any form of contact with the customer), and the result, you could use this technique to generate a report showing the last time your salespeople visited each of their accounts

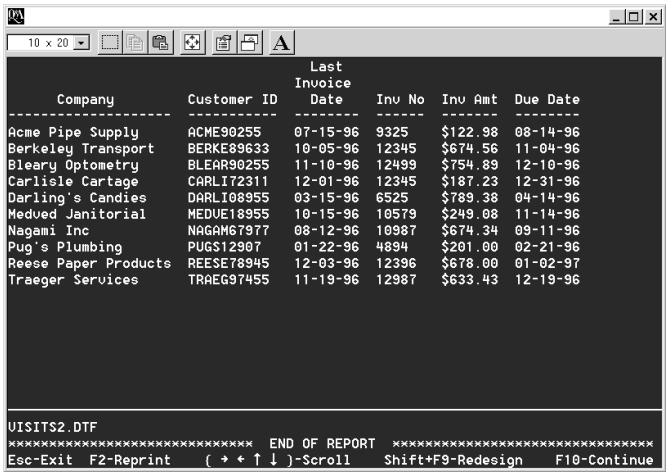
For a medical or dental office, you could use the same technique to generate a report showing each patient's last (or first) visit with his or her practitioner. Likewise, for an order entry system, you could create a report showing each customer's most recent (or oldest) purchase order, invoice, or sales order.

Suppose, for example, you had 300 customers with 3,000 invoices, and you wanted a report showing only the most recent invoice for each customer. Your Column/Sort Spec and derived columns might look like these:

```
     Company: 1, AS, I
 Customer ID: 2, I
Invoice Date: 3, DS, I
  Invoice No: 4, I
 Invoice Amt: 5, I

Heading: Customer ID
Formula: #1
Column/Sort Spec: 10,I

Heading: Comparison copy of Column 10
Formula: #10
Column/Sort Spec: 50,I

Heading: Company
Formula: @Text((#50 <> #10), #1)
Column/Sort Spec: 20

Heading: Customer ID
Formula: @Text((#10 <> #50), #2)
Column/Sort Spec: 30

Heading: Last!Invoice!Date
Formula: @Text((#10 <> #50), #3)
Column/Sort Spec: 40,F(D)

Heading: Invoice No
Formula: @Text((#10 <> #50), #4)
Column/Sort Spec: 45

Heading: Invoice Amt
Formula: @Text((#10 <> #50), #5)
Column/Sort Spec: 46,F(M)

Heading: Due Date
Formula: @Text((#10 <> #50), #3 + 30)
Column/Sort Spec: 47,F(D)
```

You wouldn't need a combination value in this case because each customer has only one "most recent" invoice. The specs would produce a report like the one shown in **Figure 4**.

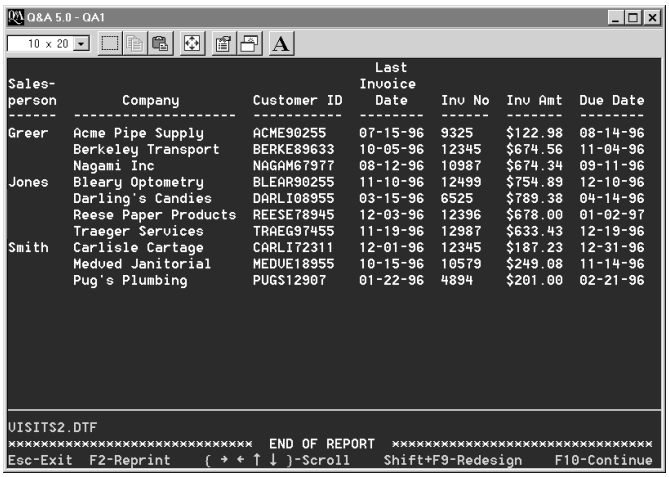
If you wanted the Figure 4 report organized by salesperson (assuming your invoices or sales orders contain the salesperson's ID), you'd simply incorporate that field in the report design, and use the same combination-value technique as in the earlier health care agency report. (In this case, you could use the Salesperson ID plus the Customer ID as the combination value.) A report designed along these lines would look like **Figure 5**.



Company	Customer ID	Last Invoice Date	Inv No	Inv Amt	Due Date
Acme Pipe Supply	ACME90255	07-15-96	9325	$122.98	08-14-96
Berkeley Transport	BERKE89633	10-05-96	12345	$674.56	11-04-96
Bleary Optometry	BLEAR90255	11-10-96	12499	$754.89	12-10-96
Carlisle Cartage	CARLI72311	12-01-96	12345	$187.23	12-31-96
Darling's Candies	DARLI08955	03-15-96	6525	$789.38	04-14-96
Medved Janitorial	MEDVE18955	10-15-96	10579	$249.08	11-14-96
Nagami Inc	NAGAM67977	08-12-96	10987	$674.34	09-11-96
Pug's Plumbing	PUGS12907	01-22-96	4894	$201.00	02-21-96
Reese Paper Products	REESE78945	12-03-96	12396	$678.00	01-02-97
Traeger Services	TRAEG97455	11-19-96	12987	$633.43	12-19-96

UISITS2.DTF
END OF REPORT
Esc-Exit F2-Reprint { → ← ↑ ↓ }-Scroll Shift+F9-Redesign F10-Continue

Figure 4. A report showing the most recent invoice for each customer. The report also tells you which customers haven't placed an order with your company lately.



Q&A 5.0 - QA1

Sales-person	Company	Customer ID	Last Invoice Date	Inv No	Inv Amt	Due Date
Greer	Acme Pipe Supply	ACME90255	07-15-96	9325	$122.98	08-14-96
	Berkeley Transport	BERKE89633	10-05-96	12345	$674.56	11-04-96
	Nagami Inc	NAGAM67977	08-12-96	10987	$674.34	09-11-96
Jones	Bleary Optometry	BLEAR90255	11-10-96	12499	$754.89	12-10-96
	Darling's Candies	DARLI08955	03-15-96	6525	$789.38	04-14-96
	Reese Paper Products	REESE78945	12-03-96	12396	$678.00	01-02-97
	Traeger Services	TRAEG97455	11-19-96	12987	$633.43	12-19-96
Smith	Carlisle Cartage	CARLI72311	12-01-96	12345	$187.23	12-31-96
	Medved Janitorial	MEDVE18955	10-15-96	10579	$249.08	11-14-96
	Pug's Plumbing	PUGS12907	01-22-96	4894	$201.00	02-21-96

UISITS2.DTF
END OF REPORT
Esc-Exit F2-Reprint { → ← ↑ ↓ }-Scroll Shift+F9-Redesign F10-Continue

Figure 5. The Figure 4 report, but this time sorted by salesperson.

Keep in mind that these *aren't* Totals Only reports. You leave Totals Only at the Print Options screen set to *No*.

Another interesting side benefit of reports such as these is that it doesn't matter what your Report Global Format Options are set to or if they're changed after the report has been designed. Except for the spacing between columns, the report's appearance is controlled entirely by its specs. **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*.

The Quick Answer

When Modifying a Database Creates Problems in Others

Jeff Nitka

Have you ever had the maddening experience of simply changing a field name or field ID number (or the name of the database), only to realize you have to change affected XLookup, XPost, or XUserselect commands in other databases as well?

Suppose you have three databases all containing the following statement:

```
Cust Name = @XLu("Custfile", Account No,
                 "Cust Acct", "Name")
```

If you change the name of the database from CUSTFILE.DTF to CUSTOMER.DTF, or rename the Cust Acct field, you'll have to rummage through the Program Specs of the other database for any references to the original names, and change them accordingly. That's a lot of work, but fortunately there's a way around it.

The trick is to generalize your code by having commands like these obtain their parameters from the lookup table. For example, instead of writing your program like this:

```
Cust Name = @XLu("CustFile", Account No,
                 "Cust Acct", "X#10")
```

write it this way:

```
Cust Name =
@XLu(@Lu("Customer File",1), Account No,
     @Lu("External Acct",1),
     @Lu("External Name",1))
```

Then add the following entries to the lookup table of the database containing the Xlookup command:

Key	1
Customer File	Custfile
External Acct	Cust Acct
External Name	X#10

This way, if you wanted to change CUSTFILE.DTF to CUSTOMER.DTF, Cust Acct to CustAcct, and the field ID number in the external CUSTFILE database from #10 to #11, you'd simply go to the lookup table of each affected database, and make your changes there. Your lookup table would include these entries:

Key	1
Customer File	Customer
External Acct	CustAcct
External Name	X#11

This technique can prove a real time-saver if you have numerous Xlookups in a number of databases. When you make a change, you don't have to worry about your Program Specs—all you have to do is update the lookup tables of the affected databases.

The technique can prove even more valuable if you distribute databases to others who might have different drive and directory structures, and different external database names and field names. By having any programming commands that require external references obtain their parameters from the lookup table, you can make the database work on most any system without having to alter the code.

Other uses

External programming references aren't the only cases where an approach like this is useful. Consider the following program that uses @Shell and Userselect to create a pop-up selection list of the directories on a hard drive:

```
<
Sub =
@Shell("dir C:\ /A:d /o /b > C:\DocsList.txt");
Sub = @Insert("C:\DocsList.txt");

If   @Len(Sub) = 0
Then @MsgBox("There are no directories",
             "in drive C:","")
Else Sub = @Userselect( @Replace( Sub ,"
","","") );

Rem "*********************************************
     There must be carriage return at the end of
     the 'else Sub = @Userselect( ...' line for the
     program to work. It allows the Replace function
     to change carriage returns to commas to create
     the directory selection list.
     *********************************************";
```

In this program, the DOS DIR command is used to create a file of directory names on the C:\ drive. The */A:d* switch specifies that only directory names are to be listed. (An */A:-d* switch would list filenames only). The */o* switch sorts the directory names, and the */b* switch lists only names. (Without the */b*, all the information about each directory would appear on the list, including the date and

time created.) The > *C:\DOCSLIST.TXT* command tells DOS to print the list to an ASCII file instead of to the screen.

Some people who install the database might not have a C:\ drive. So to make its program portable, you could have it obtain the drive letter from the lookup table, like this:

```
<
Sub =
@Shell("dir "+@Lu("Hard Drive",1)+"\ /A:d /o /b > "
+ @Lu("Hard Drive", 1) + "\DocsList.txt");
Sub = @Insert(@Lu("Hard Drive", 1) + "\DocsList.txt");

If   @Len(Sub) = 0
Then @MsgBox("There are no directories",
             "on drive " + @Lu("Hard Drive",1),"")
Else Sub = @Userselect( @Replace( Sub ,"
","","") );
```

Assuming you installed the database and had a C:\ drive, you'd simply add the following entry to the lookup table:

```
   Key         1
Hard Drive     C:
```

My FAXMAN database (featured elsewhere in this issue) uses a technique like this to display the files in any directory on your hard drive, so you can select the document file to fax without having to leave the record in which you're working. **QA**

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Quick Tip

Undocumented Clipboard Features

When you press F11 in a document or expanded field to copy text to the Clipboard, Q&A prompts you to select the text to copy. You can optionally pre-select the text by dragging the mouse over it, then press F11 to copy it to the Clipboard. However, if you press F11 multiple times, Q&A will auto-select and copy increasingly larger blocks of text to the Clipboard on the following basis:

Press F11	Copied to Clipboard
Once	Character at cursor
Twice	Word at cursor
Three times	Sentence
Four times	Paragraph
Five times	Page
Six times	Document

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