![R&R Report Writer logo]

Technical Bulletin

Printing Related Records on One Line

Product:	ARPEGGIO™	**Host:**	N.A.
	R&R Report Writer® for	**NIC:**	N.A.
	Windows®	**Interface:**	N.A.
Version:	All	**Oper Sys:**	Microsoft® Windows® NT®

Summary

We have had many inquiries from R&R Report Writer users who want to print field values from multiple records in a related table on the same line of a report. Since you cannot always know how many records in the joined table will match a record in the controlling table, you cannot use the R&R Report Writer Format/Record Layout/Records Across option to design this type of report.

This technical bulletin describes a technique you can use to print field values from multiple records on the same line of a report, regardless of how many matching records are in the related table. It describes how to create the report shown in Figure 1, which is based on two of the R&R Report Writer sample tables, RRORDERS and RRITEMS. The report lists order numbers and, for each order, lists each product number that was ordered.
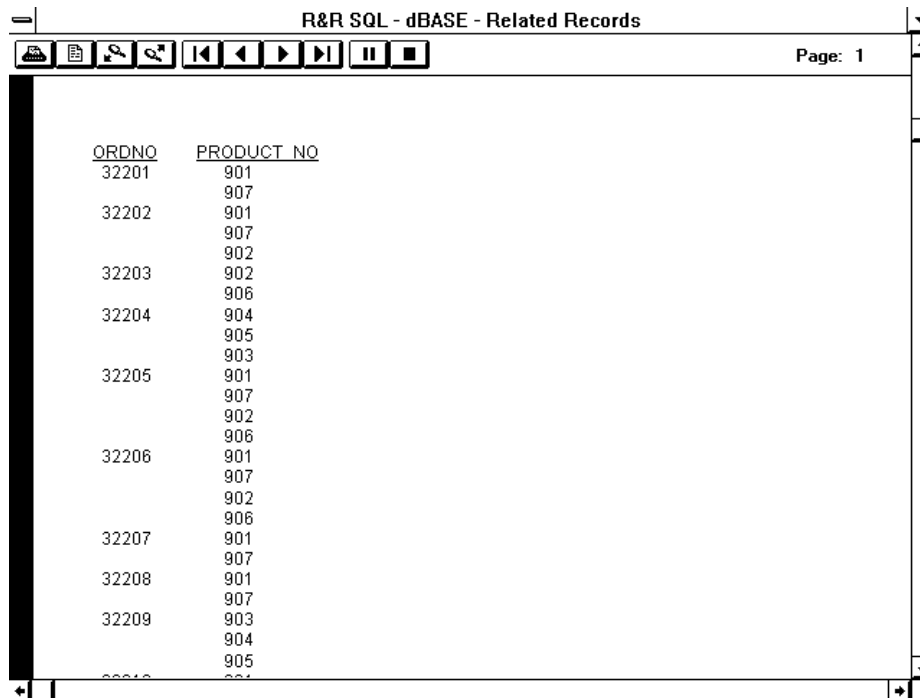

Figure 1. Order Report with Related Records on One Line

We created this report by setting a join from the RRORDERS table to the RRITEMS table to produce a list of all the products ordered in each order. To produce the list of product number values, we created a calculated field that concatenates field values from the RRITEMS table.

We started by creating a new report using RRORDERS as the master table. Next we set the Join from RRORDERS to RRITEMS using the ORDNO field as the linking field. Follow these steps to join the tables:

1. Click the Join button on the Action Bar or select Database/Join from the Menu Bar. You see the New Join dialog box.

2. In the From box, select ORDNO as the linking field.

3. To specify the related table, click the Table... button and select RRITEMS.DBF.

4. From the Field: list, select ORDER_NO as the linking field from the related table.

5. Select OK to exit the New Join dialog box. You see the Joins dialog box, which includes a description of the new relation. Select Close to return to the report layout.

To illustrate how we developed the calculated field that lists values from multiple records, we created the temporary reports shown in Figures 2 and 3. First we inserted the order number (ORDNO) and product number (PRODUCT_NO) fields on a record line to produce the report shown in Figure 2. As you can see, the report is sorted and grouped by the order number field. The "Print Data" setting for this field is "Once" so that the order number is not repeated for each composite record in the same group.

Figure 2. Initial Order Report

To print all the product numbers for each order on the same line as the order number, we created three fields. First, we created a calculated field that returns a distinct value for each composite record in the report. The expression for this field, RECNO, is:

RECNO( )

Next, we created a total field that keeps a running count of the RECNO values for every order number group in the report. This field, COUNT, counts the RECNO field and resets on the level one group field, ORDNO. We inserted the COUNT and RECNO fields on the layout to produce the temporary report shown in Figure 3, which illustrates how these fields are used to keep a running count of the records in each order number group.

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        ORDNO    PRODUCT NO    RECNO    COUNT
        32201       901          1        1
                    907          2        2
        32202       901          3        1
                    907          4        2
                    902          5        3
        32203       902          6        1
                    906          7        2
        32204       904          8        1
                    905          9        2
                    903         10        3
        32205       901         11        1
                    907         12        2
                    902         13        3
                    906         14        4
        32206       901         15        1
                    907         16        2
                    902         17        3
                    906         18        4
        32207       901         19        1
                    907         20        2
        32208       901         21        1
                    907         22        2
        32209       903         23        1
                    904         24        2
                    905         25        3
        32210       901         26        1
                    902         27        2
                    907         28        3
```

Figure 3. Order Report with RECNO and COUNT Fields

Next, we created the calculated field that will return the list of products ordered. This is a self-referencing calculated field that uses the running group count to concatenate the product number values for the records in each group. The expression for this field, PRODLIST, is:

IIF(COUNT=1,PRODUCT_NO+" ",PRODLIST+PRODUCT_NO+" ")

This field works by testing for the first record in each order number group count (COUNT=1). For the first record, the field returns the product number for that record followed by a space (" "). For the second record (if there is one), the field returns its current value (a string consisting of the PRODUCT_NO from the last record followed by a space), plus the product number for the current record followed by a space.

For the third record of the group (if one exists), PRODLIST returns its current value (a string consisting of the PRODUCT_NO field from the last two records, each followed by a space), plus PRODUCT_NO from the third record followed by a space. PRODLIST values for records 4 and up in the same group are handled in a similar fashion.

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     ORDNO    PRODUCT NO    RECNO    COUNT    PRODLIST
     32201       901           1        1     901
                 907           2        2     901 907
     32202       901           3        1     901
                 907           4        2     901 907
                 902           5        3     901 907 902
     32203       902           6        1     902
                 906           7        2     902 906
     32204       904           8        1     904
                 905           9        2     904 905
                 903          10        3     904 905 903
     32205       901          11        1     901
                 907          12        2     901 907
                 902          13        3     901 907 902
                 906          14        4     901 907 902 906
     32206       901          15        1     901
                 907          16        2     901 907
                 902          17        3     901 907 902
                 906          18        4     901 907 902 906
     32207       901          19        1     901
                 907          20        2     901 907
     32208       901          21        1     901
                 907          22        2     901 907
     32209       903          23        1     903
                 904          24        2     903 904
                 905          25        3     903 904 905
     32210       901          26        1     901
                 902          27        2     901 902
                 907          28        3     901 902 907
```

Figure 4. Order Report with PRODLIST on Record Line

When the value of the COUNT field is reset to one (when counting the first record of a new group), PRODLIST starts to build a string of product numbers for the next ORDNO in the manner described above. Figure 4 shows the value of PRODLIST when it is inserted on a record line of the report layout. (Note that we adjusted the width of this field to accommodate the maximum length of the concatenated string of product numbers.) Figure 4 illustrates how the final PRODLIST value for each order number is on the last Record line of the group. To print this line, and only this line, for each and every ORDNO, we made the line a level one (ORDNO) group footer line instead of a record line. With this change, we get the report illustrated in Figure 5.

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         ORDNO    PRODUCT NO    RECNO    COUNT    PRODLIST
         32201       907          2        2      901 907
         32202       902          5        3      901 907 902
         32203       906          7        2      902 906
         32204       903         10        3      904 905 903
         32205       906         14        4      901 907 902 906
         32206       906         18        4      901 907 902 906
         32207       907         20        2      901 907
         32208       907         22        2      901 907
         32209       905         25        3      903 904 905
         32210       907         28        3      901 902 907
         32211       907         30        2      901 907
         32212       906         32        2      902 906
         32213       903         33        1      903
         32214       907         35        2      901 907
         32215       905         38        3      903 904 905
         32216       907         40        2      901 907
         32217       905         42        2      903 905
         32218       901         43        1      901
         32219       903         45        2      902 903
         32220       904         46        1      904
         32221       906         49        3      903 905 906
         32222       901         50        1      901
         32223       901         51        1      901
```

Figure 5. Order Report with PRODLIST on Group Footer Line.

If you use a similar calculated field expression in a report, keep in mind that the maximum length of any character field in R&R Report Writer is 254 characters. If your calculated field returns a lot of data, you may exceed the maximum width.

Finally, we selected PROD_NO as the level two sort field so that the product numbers print in sequential order, as shown on the report in Figure 1. All that remains is to delete the fields that we had temporarily inserted on the report layout (COUNT, RECNO, and PRODUCT_NO), edit the column headings so they are more descriptive, and close up the space between the remaining fields. After so doing, we printed the report shown in Figure 1.