BOND RESEARCH USER GUIDE

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Table of Contents

About this guide

This guide tells you how to use Datastream for bond research. It is intended as a guide to the main Datastream programs used in bond research.

It is designed for all users from those with no experience of Datastream through to experienced users.

Whenever a reference is made to a bond, this implies a bond, floating rate note (FRN), convertible or warrant.

What you need to know

In this guide, we assume that you know how to use your Datastream terminal or PC and its keyboard - if not, refer to the manufacturer's instructions. Other than that, no knowledge of Datastream is assumed. Where necessary, we refer to other Datastream publications which may help you in your work.

How to use this guide

To help you make best use of the manual, it is divided into four sections and an appendix:

Introduction	Contains background information about bond research on Datastream, which programs you can use, what they do, and how to make most efficient use of Datastream.
Worked Examples	Contains tutorials introducing the Datastream bond research programs using worked examples. Summaries at the end of each example help you to check key points.
Using the programs	Shows bond programs followed by sample output.
Appendices	Contains data availability tables and a list of data items available for use in program 145K.

Read the "Introduction" first. It will help you to understand how to use Datastream.

Conventions

Keys and keyboard input

In this manual - and in the prompts you see on screen - key names are enclosed in angle brackets. For example, the function keys are **<F1>** to **<F12>**. Where keys are identified on the keyboard with words, the word is shown in angle brackets, for example **<Alt>** or **<Esc>**.

When two or more keys need to be pressed simultaneously, these are shown within a single pair of angled brackets, joined by an underscore. For example, holding down the **<Ctrl>** key while pressing the **<C>** key is shown as **<Ctrl_C>**.

We use **<Enter>** to refer to the key which may be marked on your keyboard as Return, Carriage Return, Enter or .

When describing other keyboard input, we show what you must type using a slightly different bold typeface; for example "...type **HELP BCOD?** and press **<Enter>**...".

Screen displays

All screen messages and options referred to in the text are shown in bold type; for example "...select the **Display** option..." or

ENTER ? WHERE HELP REQUIRED

Dates and times shown on Datastream screens are shown in the format DD/MM/YY and HH/MM/SS respectively.

Related guides

Other Datastream publications referred to in this guide are:

- *Graphics User Guide*
- *Time Series Analysis User Guide*
- *Data Channel User Guide*
- *Indices, Interest and Exchange Rates Manual*
- *Datastream Definitions Manual*
- *User Created Securities*
- *DSCOM, DSTERM and DSWindows User Guides*

Further information

If you have any questions about bond research on Datastream, or about any other Datastream service, please contact your Client Liaison/Customer Services Executive.

Introduction

Introduction

This manual describes how to use Datastream when working with bonds.

This introduction gives you a general background to bond research on Datastream and describes the programs and codes you need to use.

Overview

Datastream has data on individual bonds, lists of bonds, bond indices, and other bond-related data. The databases cover almost 70,000 bonds in over 20 countries, with hundreds of indices and supporting bond lists.

Datastream gives you the facilities to use this data. For example, you can plot yield curves and other graphs, study underlying data, display and manipulate it, create your own bonds, download the data into your spreadsheets, and so on. This manual tells you how to do all these tasks and more.

Note: *Throughout the manual the term 'bond' or 'security' is used as a general term; it applies to all fixed interest/fixed income instruments, including:*

- *Convertibles*
- *Floating rate notes*
- *Equity and bond warrants*
- *Schuldscheine*

Fixed Interest research on Datastream

Effective bond research means getting the data you want in the form you want it. To do this you need to know the *code* for the security and the *program* that presents the data.

A wide range of programs are available to perform your analysis.

Help is available from a wide range of sources (listed on page 16).

Choosing the right program

The "Data availability chart" in Appendix A shows you at a glance what data is displayed by each program. Another useful source is the *Summary of Programs*.

In DSCOM/ DSTERM:- use <F9> Program

When you are at the Datastream prompt press <F9> for a menu based system that leads you to the program you want.

In DSWindows:- use the Program Finder

1. Select the type of request you want for example, Graphs
2. On type of data select Bonds
3. Select the program that you want

Choosing the right code

Each security has a unique Datastream identification number referred to as its “Datastream code”. These six-digit code numbers are the most common input that you supply to a program.

Securities can usually be specified by many other code numbers, too - for example the local stock exchange code, or the ISIN code.

In addition to individual issues, Datastream has many lists of bonds and warrants and bond indices. Each list/index has its own unique identification mnemonic. Use these codes to access data for the list.

The different types of codes and mnemonics, and how to find them, are described on page 13.

The Programs

Each Datastream program has its own unique ‘name’. This is a number followed by a letter (for example, 401A). The number identifies the program series, the letter identifies a particular program within the series. Programs 144A and 144X are part of the 144 series, program 145S is part of the 145 series, and so on.

Different series of programs cover different aspects of your work; individual programs within a series perform a particular task. The different series and the individual programs are described in the following pages.

Type of task	Program series	Used for:
Bond research	- the 144 series - the 145 series	working with individual bonds or warrants working with lists of bonds, warrants or several individual bonds
Graphics	- the 401 series	producing graphical displays of data
Time Series analysis	- the 301 series	statistical display and manipulation of bond data
User-created bonds User-created lists	300D 300C	setting up your own bonds setting up your own lists
Data downloading	- the 900 series	importing bond data from Datastream into your spreadsheets

Note: *Depending on your service agreement with Datastream, you may not have access to all the series listed. Your Customer Services Executive has details of the services you subscribe to.*

For a complete list of programs available refer to the *Summary of Programs* or online help (see page 16).

Fixed Interest Research programs

The 144 series of programs is designed to display data for individual securities, as follows:

Program	What it does	See page
144A	Displays current price and yield data for a security	64
144B	Displays price and yield data for a security, and allows you to set your own price/yield	66
144C	Displays all the data available for a security/warrant	62
144D	Displays calculated prices/ yields for a security over any time period; calculations are based on yields/prices you supply, or Datastream-supplied	69
144E	Displays reinvestment yields for a security; you can specify up to 6 reinvestment rates for comparison with the standard redemption yield	73
144F	Displays a profile of a borrower, and a list of all their fixed interest issues	76
144X	Lets you design your own output display (specifying the data and the layout) for any security - a “flexible format” program	78
146Y	Displays a list of options settings, search criteria or the flexible formats you have stored, and lets you maintain the list	144

These programs are all described in this manual.

The 145 series of programs is designed to display data for individual securities and for lists:

Program	What it does	See page
145A	Displays price and yield data for all securities in a bond list	97
145B	Displays the price and the yields to final date, equivalent life and average life for a list of securities	99
145C	Displays the changes in price and yield between two dates for a bond list	101
145D	Displays the calculated yields on a bond list over a time period. You can set your own prices for issues	103
145E	Displays reinvestment yields for bonds in a list; you can specify up to 6 reinvestment rates for comparison with the standard redemption yield	106
145F	Displays data for a list of convertibles	109
145G	Displays data for a list of equity warrants	111
145H	Displays data for a list of bond warrants	113
145K	Analyses a list, subdivided by specified criteria	115
145S	Searches through the whole bonds database, or lists, for securities. You can save the results as a new bond list	85
145X	Lets you design your own display for a bond list - a “flexible format” program. You can also perform a search before setting up the flexible format	133
145Y	Calculates estimated future income and capital repayments for a bond list	139
146Y	Displays stored codes, and lets you manage them	144

These programs are all described in this manual.

Graphics programs

The 401 series of programs can be used to display graphs for individual bonds, lists of bonds, and any combination of data (for example, the price of the convertible bond with the price of the equity, or bond & economic data):

Program	What it does	See page
401A	Displays a line chart of data over any period for up to 3 securities	156
401D	Displays the value of one security as a percentage of another	
401E	Displays a graph of the redemption yield difference between two securities	148
401I	Displays a scatter diagram for any specific list; you specify the two items of data which are used for the X- and Y-axes	
401N	Displays a yield curve (Datastream-stored or privately created) for any bond list	150
401X	Displays up to four graphs on the screen; this program controls the contents of each graph and its appearance - a “flexible format” program. Save and re-use the layouts if you want	153

401A, 401E, 401Nand 401X are described in this manual; all the programs listed above are described in the *Graphics User Guide*.

Time Series Analysis programs

The 301 series of programs is designed to produce tabular displays of data for individual securities, lists and bond indices. The programs most often used are:

Program	What it does
301D	Displays data at any two dates, and gives the percentage change & high/low/average over the period.
301V	Displays absolute values over a specified period
301X	Enables you to design your own display (specifying the data and the layout) for any specified bond/list/index - a "flexible format" program.
301Y	Displays a list of the flexible formats you have stored (using program 301X), and enables you maintain the list

An example of 301D is given on page 159. These programs are all described in the *Time Series Analysis User Guide.*

Data downloading programs

The following 900 series of programs can be used for downloading bonds data to your PC.

Program	What it does
900A	Downloads data for up to 10 bonds or a list at a specified date.
900B	Downloads data for a single bond over a specified period
900P	Downloads portfolio holdings data

These programs are described in the *Data Channel User Guide.*

User-created bonds & lists programs

The following programs can be used to set up your own 'dummy' instruments, bond lists and portfolios. These user-created instruments can then be used in any of the other programs.

Program	What it does
300A	Lets you build up and store your own mathematical expressions to use in other programs, including curve equations for use in program 401N
300B	Lets you build up and store your own lists
300C	Lets you build up and store your own time series (a sequence of data over a period of time)
300D	Lets you create, amend, list and delete individual bonds
80B	Adds/deletes bonds from a restricted-access bond list
80C	Displays the constituents of a restricted-access bond list

See the *Time Series User Guide* for programs 300A, 300B and 300C. For 300D see the *User Created Securities user guide*.

Note: *Lists created with 145S or 145X can be edited using the 80B program*

Associated research/Miscellaneous programs

Program	Purpose
28 series	Display data on stockmarket indices (Datastream/EFFAS indices, bond indices, and so on). Similar to 301.
150 series	Display economics data. Use for monthly, quarterly and yearly bond indices.
250 series	Display information for commodity & financial futures.

Program	Purpose
302A	Programmable pages program - lets you build up your own display page; the data is updated when you press <Enter>.
302B	Maintenance program for 302A pages.

Codes and mnemonics

Every bond, bond list and bond index available on Datastream has a code or mnemonic. To access any of the stored information, you need to use the relevant code or mnemonic with one of the programs described above.

Example of a bond code

To work on...	You use...	Example: code for Volkswagen 5.5% 2000
Individual bonds	Datastream code	798936
	Stock Exchange code	D486120
	ISIN code	DE0004861208
	Common code	001107143

Example of bond list and bond index mnemonics

Lists of bonds	List mnemonic	The list of Australian government issues has mnemonic `AUGOVT`
Bond indices	Index mnemonic	The US long bond index has mnemonic `USLGBND`

Where to find codes and mnemonics

You can find the codes and mnemonics for all information held on Datastream, as follows:

- Datastream codes **for individual stocks, economic indicators, indices or lists.** Press **<F9>** for Code Lookup. Alternatively, if you use DSWindows to access Datastream click on the CODE icon. Code Lookup gives you access to all Datastream code numbers. Select the category of instruments you require.
- For **individual stocks** only use the online CODE program. You need to enter the name of the issuer (or part of the name). CODE will display all the bonds that match this description, with their Datastream codes. Type **CODE** at the Datastream prompt then follow the instructions presented on the screen.

- **List, index and other mnemonics**
  These mnemonics can be displayed online by typing **HELP CODE?** at the Datastream prompt and then selecting the menu option required.
- **Economics data**
  Type **150Z** then follow the instructions.

Note that the *Indices, Interest Rates and Exchange Rates* manual gives mnemonics for various rates.

Data you can use

Datastream stores a wide range of data for a bond. Fresh data is added daily, building up the store of historical price data in the databases. To indicate the range of data stored for an individual issue, consider a typical German benchmark issue. For this issue we store:

- Price data - current, clean, gross, 12 month highs/lows, etc.
- Yield data - yields to appropriate lives, interest yield, accrued interest data, variations, volatilities, equivalent US T-bond yield, etc.
- Redemption data - dates, schedules, lives, durations to various lives, sinking/purchase fund data
- Issue data - amounts issued & in issue, all issue data, part-payment data, credit ratings

Additionally, we store conversion data (for convertibles), warrant data (for equity and bond warrants), floating rate data (for FRNs), and so on. For any bond, approximately 150 items of data can be obtained depending on the type of issue (or instantaneously calculated when you request them).

Sources and updating procedures

All bond data is taken in the first instance from the prospectus. Subsequent data is from individual bond markets. See the *Datastream Definitions Manual* for full details.

How you access the data

Each bond in the database has its own unique code number, which you use with any program to access data for that bond. Similarly, each item of data for that bond has its own identification number - the 'data item number'. Many of these items of data can also be referred to using two-character mnemonics, called 'datatypes'.

For example, the redemption yield for any issue can be referred to in the 144/145 programs using the data item number 4; when using a 401 series graphics program to view the redemption yield, you use the datatype **`RY`**.

Data item numbers and datatypes serve the same purpose. Whenever you are using a Datastream program and you want to access or refer to a particular item of data, you use the appropriate data item number or datatype. *The only difference between data item numbers and datatypes is in the range of programs where they can be used:*

- Data item numbers can be used **only** on the **144** and **145** series of programs
- Datatypes can be used **only** on the following series: the **250s**, the **301s**, the **302s**, the **401s** and the **900s**

A full list of data items and the corresponding datatypes is given in the *Datastream Definitions Manual*.

The third example in the 'Worked examples' section shows you how data item numbers can be used to specify particular items of data. The fourth example shows you how datatypes are appended to a bond code for the same purpose.

Getting help on Datastream

Help is available for all aspects of using Datastream. Primarily, this help is available online, as listed below. Other sources are given overleaf.

General help

HELP? This provides general and specific information for using Datastream: getting started, using the HELP system, programs and databases and so on. Type **HELP?** at the Datastream prompt.

Help with programs

See page 4.

Help on individual programs

HELP program number? This provides program specific information (for example, type **HELP 401A?** for information on program 401A). This facility is available on most programs.

Interactive Help This gives information about specific input fields in the programs, and is available on most research programs. Type a question mark (**?**) in an input field to get more information on that field.

Help with codes and mnemonics

Code Lookup Press **<F9>** when you are using a program to activate Code Lookup, you can search for codes and insert them into your current input field.

CODE This helps you to find Datastream codes for individual bonds. Type **CODE** at the Datastream prompt.

HELP CODE? This helps you to find codes and mnemonics for all types of data except individual bonds. For example, stock market indices, interest rates, list mnemonics, data items and datatypes. Type **HELP CODE?** at the Datastream prompt.

Interactive Code This allows you to access the CODE program without returning to the Datastream prompt. It is available in graphics programs only (the 401 series). Type an exclamation mark (**!**) in any code or expression field.

Other sources of help

Manuals

Datastream User Guides, Codes manuals and Definitions manuals can help you with all aspects of our services. See “Related guides” in the “About this manual” section for more details.

Helpline

Datastream provides a telephone helpline for queries on programs, data, communications problems etc. The telephone numbers may be found online by typing 99CUST at the Datastream prompt and pressing **<Enter>**.

Training

Datastream’s training department provides hands-on workshops to show you how to use the Datastream system. Phone the Datastream Customer Training Department for details.

More about using Datastream

This section briefly describes some of the fundamentals of the Datastream service:

- How to access and quit Datastream
- Datastream input screens
- Moving between fields
- Moving between programs
- Reviewing output pages
- Other important keys
- Printing, saving and automating your work
- Using default values in input fields

Datastream communications user guides (ie. the *DSCOM*, *DSTERM*, *DSNET* or *DSWindows User Guide)* offer complete details of all these features.

How to access and quit Datastream

How you access and quit Datastream depends on the type of system you are running, and your Datastream communications software - DSCOM or DSTERM (for DOS-based systems) or DSWindows (for Microsoft Windows-based systems). Refer to your *DSCOM/DSWindows/DSTERM User Guide* for full details.

If you have any difficulties, contact your Customer Services Executive.

Datastream input screens

Type your data at the input fields provided.

Moving between input fields

Use the **<Tab>** key to move the cursor from one entry field to another. When you fill a field with data (for example, if you type two characters in a two character field) the cursor automatically moves to the next field in which you can type data. Use the **<Shift_Tab>** keys to move the cursor back one field to the previous entry field.

Use the **<End>** key to move the cursor to the last input field on the current screen, and the **<Home>** key to move the cursor to the first input field.

Moving between programs

Press **<F2>** to leave the current Datastream program and return to the Datastream prompt or the program number field if in DSWindows.

In DSWindows you can also click on the Clear icon.

Default values

Default values are produced automatically by Datastream. For example you might see the following field on an input screen:

DATE [-1Y]

This means that if you substitute no other value, the data supplied is from a year ago. To display data from a different date, for example, a month ago:

Type **-1M.**

The data that is displayed is from a month ago. When you have finished using the program, the values you entered revert to the original defaults supplied by Datastream.

In the 144 and 145 programs dates are displayed as DD/MM/YY.

Reviewing output pages

You can review the last pages displayed on your terminal. Press **<Page Up>** to display the previous page. The message **Page -1** is displayed on the screen. Press **<Page Up>** again to display **Page -2** and so on. To return page-by-page to the active page, use **<Page Down>.** To return directly to the active page press **<F2>.**

Other important keys

Some keys have special functions defined in Datastream. For a full list of Datastream's special function keys (for example **<F1>**) and their uses refer to the *DSCOM User Guide* or *DSWindows User Guide*.

Printing, saving and automating Datastream output

Refer to the *DSCOM*, *DSTERM* or *DSWindows User Guide*.

Control files and macros

Tasks that you frequently carry out on Datastream can be automated. You can set up control files (if you are using DSCOM or DSTERM), or macros (if you are using DSWindows) to achieve this. See the appropriate user guides for more details.

Worked examples

Worked examples

Introduction

This section contains a short set of worked examples that take you step-by-step through the following four situations:

- Displaying all data about a security
- Displaying data for securities in a list, and customising the output
- Searching the database for bonds which meet specific criteria
- Displaying a yield curve

The worked examples gradually increase in complexity and point out important features common to many of the programs.

A summary of the points covered appears at the end of each example, so that you can check your understanding. The remainder of this manual assumes you have read and understood the examples and summary points.

Example 1 : Displaying all data about a single bond

This example shows you how to use a Datastream program to view all data for a bond using program 144C. This program is the most basic Datastream bond research program. Before you can start you need to know a code for the security you want to analyse.

This example uses a German domestic floating rate note, issued by the Dresdner Bank 1989 FRN with a redemption date of 04/99 The steps you take to display the data for this bond are as follows:

1. Look up the Datastream code for the bond (how to do this is described on page 13) - the number for the FRN is 793907.
2. Type the program number, **144C**, at the Datastream prompt.
3. Press **<Enter>**. The following screen is displayed:

```
THIS PROGRAM DISPLAYS ALL DATA FOR A GIVEN BOND.
ENTER ? WHERE HELP REQUIRED.




STOCK CODE                    ____________
```

This input screen has one input field, where you specify the code for the required bond.

4. Type **793907** in the input field and press **<Enter>**.

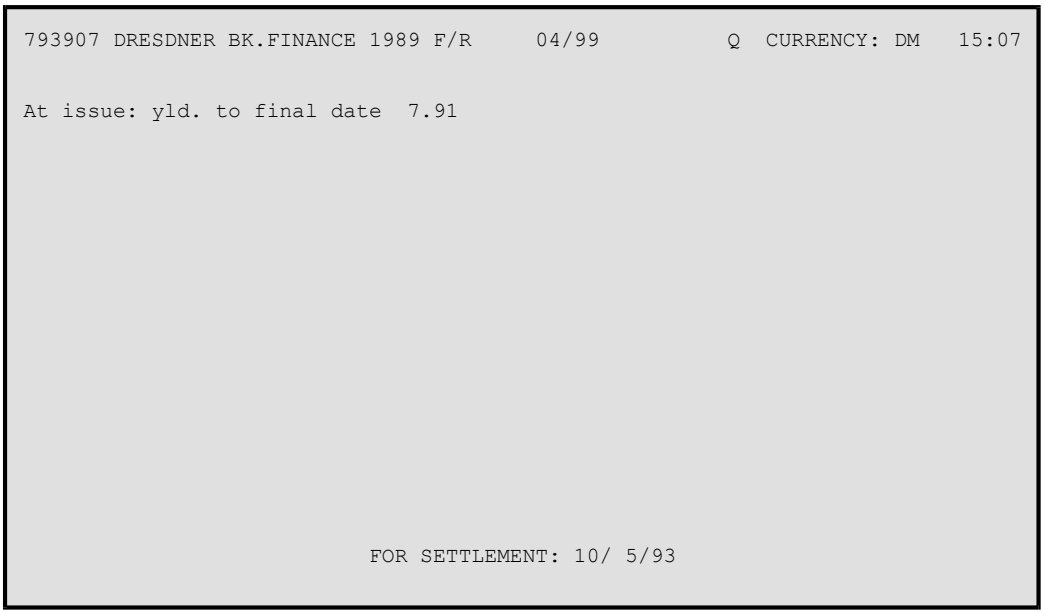
   Data for this bond is displayed on the output screen:

```
 793907 DRESDNER BK.FINANCE 1989 F/R     04/99          Q  CURRENCY: DM   15:07


    CURRENT      CLEAN       GROSS     REDEMPTN    YIELD TO    YIELD       INTEREST
    PRICE        PRICE       PRICE      YIELD       NEXT      TO NEXT      YIELD
                                                     CALL      PUT

   99.950       99.950     100.190       7.933       8.020       7.889       7.848

Last change of prices received on 30/ 4/93

   ACCRUED     JAPANESE    YIELD TO    YIELD TO    YIELD TO    YIELD TO     LIFE TO
   INTEREST    SIMPLE      DURTN TO    DURTN TO    MOD DURN    MOD DURN      FINAL
               YIELD       MATURITY    NXT CALL    MATURITY    NXT CALL      DATE

    0.240       8.123       7.938       8.018       7.937       8.019       5.963

    LIFE TO    LIFE AT     DURATION    DURATION    MODIFIED    MODIFIED    CONVEXTY
     NEXT      ISSUE                   TO NEXT     DURTN TO    DURTN TO    TO
     CALL                               CALL      MATURITY    NXT CALL    MATURITY

    0.963       9.993       4.817       0.990       4.999       0.971      26.687
                          FOR SETTLEMENT: 10/ 5/93
```

First sample output screen for program 144C

This screen (the first output screen for the program) gives the Datastream code number and the bond name across the top, and then displays items of data across the screen - prices, yields, lives, and so on.

Data is displayed on more than on screen. To see the next screen, press **<Enter>**:



Second sample output page for program 144C

5. Use the **<Enter>** key to continue paging through the rest of the output screens.

Note: *Data items displayed on the output pages depend on the type of bond requested. If you repeat the same steps with the Datastream code for a convertible, for example, the output screens will display conversion data.*

6. At the Datastream prompt you can also use "expert mode". For example, type:
   144C 793907
   to produce output without displaying the input screen.

Summary

The points covered in this example are:

- **You need to know the code for a security (for example, the Datastream code) before you start the program**
- **To use any Datastream program, type the program number at the Datastream prompt and press <Enter>**
- **To return to the Datastream prompt at any time, press <F2>**

Example 2 : Displaying data for bonds in a list

This example shows you how you can display data for a list of bonds, and how input fields can control the way the output pages are displayed.

Datastream maintains a wide range of bond lists, for example, a list of Austrian government issues, or a list of euro-convertibles. See page 185 for a list of Datastream bond lists. Alternatively use Code Lookup or type **HELP FILI?** at the Datastream prompt.

You can also set up your own lists if you want. These lists help you to monitor data for issues in a particular sector without having to remember the individual Datastream code numbers. Each list has its own mnemonic; to find the mnemonic for any specific list refer to page 13.

To work on lists of bonds, you use the Datastream 145 series of programs. Each program in the series displays different data. In this worked example, you use program 145C to display the price and yield at two dates for all issues making up the UK gilts list. The example has been split into two stages:

- The first stage of the example shows you the simplest use of program 145C, requiring the minimum of input
- The second stage shows you how you can use input fields on the 145C input screens to customise the final output pages

Stage 1 - Displaying price and yield data for UK Gilts at two dates

In this stage you will display price and yield data for a bond list (UK Government bonds) at two dates to see the change over the period. The steps are described below.

1. Look up the mnemonic for the bond list (this is described on page 13) - the list mnemonic for UK government issues is `GILTS`
2. Type the program number, **145C**, at the Datastream prompt and press **<Enter>.** The 145C input screen appears:

Input field for list mnemonic

Input fields for dates

```
THIS PROGRAM DISPLAYS PRICES AND YIELDS AT TWO SPECIFIED DATES FOR A GIVEN LIST
OF BONDS. ENTER ? WHERE HELP REQUIRED.

SPECIFY UP TO 3 LISTS, OR UP TO 10 STOCK CODES, OR A COMBINATION, WITH
SPACES BETWEEN.
     GILTS_____________________________________________________________________

OPTIONS CODE, IF REQUIRED          OSTD    ENTER 2 TO AMEND BEFORE USE   1

PRICES TO BE USED                  M           M = MARKET   O = OFFICIAL LIST

FIRST DATE                         01/01/93
SECOND DATE                        11/05/93

GEOGRAPHICAL DIVISION              _           C = BY COUNTRY
                                               Q = BY AREA OF QUOTATION
                                               L = LOCAL/FOREIGN
PRIMARY SORT KEY                   ___
PRIMARY SORT ORDER                 A           A = ASCENDING  D = DESCENDING
SECONDARY SORT KEY                 ___
SECONDARY SORT ORDER               A           A = ASCENDING  D = DESCENDING
```

145C input screen

3. Type **GILTS** in the first input field. Press the **<Tab>** key to move to the **FIRST DATE** field. (Press **<Shift_Tab>** to move the cursor backwards .)
4. Type **01/01/93** in the **FIRST DATE** field (the date format must be DD/MM/YY in these date fields).
5. Leave the remaining fields on the input screen as they are to give the standard (default) output. Press **<Enter>**.

The first 145C output page is displayed, showing the prices and yields at both dates:

Options settings used

```
DATASTREAM:145C          LIST OF PRICE CHANGES ON BONDS                  1/ 1/93
                              EXPENSES IGNORED                            15:58
                           INCOME TAXED AT  0.00%
                        CAPITAL GAINS TAXED AT  0.00%

  STOCK NAME                          PRICE      PRICE     %AGE   YIELD    YIELD
                                        AT         AT      CHNG    AT       AT
                                     1/ 1/93   11/ 5/93    PRCE  1/ 1/93 11/ 5/93


TREASURY 12 1/2  14. 7.1993       103 5/32 X 101 1/4      -1.8   6.480    5.385
FUNDING 6        15. 9.1993        99 23/32  100           0.3   6.404    5.878
TREASURY 13 3/4  23.11.1993       106 1/4    104 1/8  X  -2.0   6.422    5.750
TREASURY 8 1/2    3. 2.1994       102 1/32 X 101 7/8      -0.2   6.543    5.817
TREASURY 14 1/2   1. 3.1994       108 23/32  106 3/4      -1.8   6.613    5.774
EXCHEQUER 13 1/2 27. 4.1994       108 19/32  107 1/16     -1.4   6.584    5.837
TREASURY 10       9. 6.1994       104 1/2    104 3/16 X   -0.3   6.669    5.954
EXCHEQUER 12 1/2 22. 8.1994       108 21/32  107 7/8      -0.7   6.815    6.050
TREASURY 9       17.11.1994       103 13/16  104 1/16 X    0.2   6.800    6.142
TREASURY 12      25.01.1995       109 11/16X 109 3/16     -0.5   6.902    6.242
EXCHEQUER GAS 3  1. 5.90/95        94         95 3/4        1.9   5.798    5.300
EXCHEQUER 10 1/4 21. 7.1995       107 3/4  X 107 13/16     0.1   6.910    6.392
```

145C Sample output screen - default display

The heading on this screen tells you the options (used in the calculations). These 'standard' settings are the defaults offered on 145C. They are further described in the second stage of this example.

The bonds making up the GILTS list of UK government issues are shown down the left hand side of the screen under the heading **STOCK NAME**. They are listed in alphabetical order (again, this is the default for program 145C).

The second and third columns show the price at the two dates shown on the input screen. The fourth column shows the percentage change over this period (with losses shown with a **-** sign). The final two columns show the yield data at the two dates. Note that the yields are calculated allowing for the tax, CGT and expense rates shown in the screen heading.

6. Press **<Enter>** to display each subsequent output page (there are about eight pages of output), or press **<+>** on the numeric keypad (**<Num Lock>** must be off) to page through all the output pages to the end of the list.

7. When you have finished looking at the output pages, press **<F2>** to return to the Datastream prompt or press **<Enter>** to continue.

This example has shown you the most basic use of lists on Datastream list programs, displaying data for the constituents under default conditions (alphabetical order, at a standard set of tax rates). The next stage shows you how to use the other input fields on the 145C input screen to change the output from the program.

Part 2 - Using the input fields to customise output pages

The input screen of program 145C contains a number of other fields not used in the first part of this example. These fields are used to tailor the default output you saw in stage one. (For example, yields calculated allowing for expenses, or the list of bonds sorted into a different order, or using official list prices rather than middle market.)

In this example, you use 145C again to display the same list of Gilts at the same dates but you will use the **OPTIONS CODE** input fields to amend the income tax and expense rates used in yield calculations, and the **PRIMARY SORT KEY** field to display the output list in order of coupon.

The steps are as follows:

1. Type **145C** at the Datastream prompt and press **<Enter>**. The 145C input screen appears.
2. Type **GILTS** in the first input field and press **<Tab>** to move on to the **OPTIONS CODE** field.

   The default setting in this field is OSTD. This is a code referring to the standard options for tax rates, expense rates and other similar data used in calculations. In this example you will amend these settings, so press **<Tab>** to move to the next field (**ENTER 2 TO AMEND BEFORE USE**) and type **2**:

   You will amend the standard settings after you have completed the following steps.
3. Type **01/01/93** in the **FIRST DATE** field, in the **SECOND DATE** field type **01/05/93**.
4. Press **<Tab>** to move to the **PRIMARY SORT KEY** field.

   The **SORT KEY** and **SORT ORDER** fields let you change the order of the final output. In this example you will sort the issues in descending order of coupon, as follows:
5. Type **43** in the **PRIMARY SORT KEY** field (43 is the data item number representing the coupon for a bond - data items are explained in more detail in the next example). Press **<Tab>**.
6. Type **D** in the **PRIMARY SORT ORDER** field, to list the bonds in descending order.

   The first input screen is now complete for this example, and it should appear as follows:

```
THIS PROGRAM DISPLAYS PRICES AND YIELDS AT TWO SPECIFIED DATES FOR A GIVEN LIST
OF BONDS. ENTER ? WHERE HELP REQUIRED.

SPECIFY UP TO 3 LISTS, OR UP TO 10 STOCK CODES, OR A COMBINATION, WITH
SPACES BETWEEN.
     GILTS_____________________________________________________________

OPTIONS CODE, IF REQUIRED          OSTD    ENTER 2 TO AMEND BEFORE USE   2

PRICES TO BE USED                  M           M = MARKET   O = OFFICIAL LIST

FIRST DATE                         01/01/93
SECOND DATE                        01/05/93

GEOGRAPHICAL DIVISION              _           C = BY COUNTRY
                                               Q = BY AREA OF QUOTATION
                                               L = LOCAL/FOREIGN
PRIMARY SORT KEY                   43_
PRIMARY SORT ORDER                 D           A = ASCENDING  D = DESCENDING
SECONDARY SORT KEY                 ___
SECONDARY SORT ORDER               A           A = ASCENDING  D = DESCENDING
```

Press **<Enter>**. Because you specified that you wanted to amend the options, the next screen which appears is the options data screen.

The default settings are zero income tax, capital gains tax and no expenses. The default frequency of yield for any bond and the method of interest calculation on short bonds depends on the particular issue. For this example, we will set an income tax of 25%, with 2% expenses on selling.

7. Amend the options data screen as shown:

```
ENTER OPTIONS DATA - A BLANK FIELD INDICATES DEFAULT VALUE.


INCOME TAX RATE            25.00
CAPITAL GAINS TAX RATE     _0.00
EXPENSE RATE               _2.00___
EXPENSE TYPE               S      B = BUYING          S = SELLING
FREQUENCY OF YIELDS        __    AN = ANNUAL        SA = SEMI-ANNUAL
INTEREST ON SHORT BONDS    _      S = SIMPLE          C = COMPOUND
```

Setting up new values on the options data screen

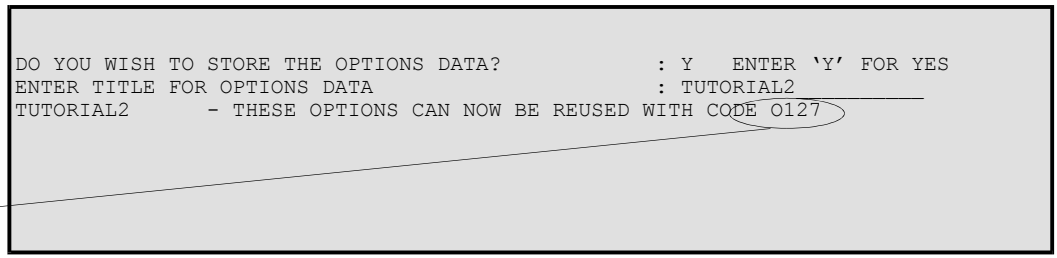
When the screen is complete, press **<Enter>**.

The first output page is displayed. (Compare the results with the default output from the program, shown on page 30.) The headings show the amended rates, and the issues have been sorted in decreasing order of coupon, as you specified on the input screen and options data screen.

Press **<Enter>** to page through the output.

Before you return to the Datastream prompt, the screen displays a message asking whether you want to save the amended options settings. Saving the settings allows you to use them again in any 144 or 145 series program without retyping them.

8. To save the options, type **Y** and press **<Enter>**. When you are prompted for a title for the new set of options settings, type **TUTORIAL2** and press **<Enter>**. The screen will then display a unique options code that allows you to re-use the settings during any future session:



Options data saved under options code O*nnn*

9. Make a note of the code number (it has the format O*nnn*, where *nnn* is a three-digit number and O is the letter O - O127 in the above screen).

Return to the Datastream prompt. You have now completed the second worked example, using the list research program 145C to study the performance of a particular group of issues, and then changing the input fields and the options to study the same list under different conditions and with a different layout.

Note: *To see how an options code works, use program 145B with the list GILTS; run the program once using the OSTD options code (the default on the input screen) and once using your new options code, and compare the difference in yields shown on the output.*

Summary

The points covered in this example are:

- **You can work with lists of bonds (using a list mnemonic) as well as individual securities on the 145 programs**
- **Default settings are available in most fields to give you a standard output**
- **Change the settings in input fields to customise the output of a program to suit your requirements**
- **You can set up your own options settings and store them under a new options code**

Example 3 - Searching for issues that meet your own requirements

Datastream carries data for many thousands of bonds, and using the search programs you can search through these issues for those meeting a specific set of criteria. You can search through all the bonds, or (if you are only interested in those within a particular sector of the market) you can search through lists of issues using list mnemonics.

In this worked example you will search through the list of Bundes Anleihen (German Domestic) issues and display only those meeting the following conditions:

- Clean price of DM90 - DM100
- Redemption yield of more than 6%
- Life to final date of 2 - 6 years

The program you will use is 145S.

The first screen enables you to enter the list mnemonic(s) and basic data, and further screens enable you to enter the criteria on which you want to search, the sort order for the output, the tax rates (when searching on yields, for example) and finally a screen for the precise limits of the search.

You will see each of the input screens in this example and how to use ‘data item numbers’ to specify the data you want to search on.

Data item numbers refer to individual items of data for an issue in much the same way as a Datastream code number refers to an individual issue (data items are described on page 15).

As in the previous examples, before you start using the program you need to know the mnemonic(s) for the list(s). To set up your search criteria, you also need to know the data item numbers for the items you will search on.

The steps are as follows.

1. Type **145S** at the Datastream prompt and press **<Enter>**. The 145S initial input screen appears:

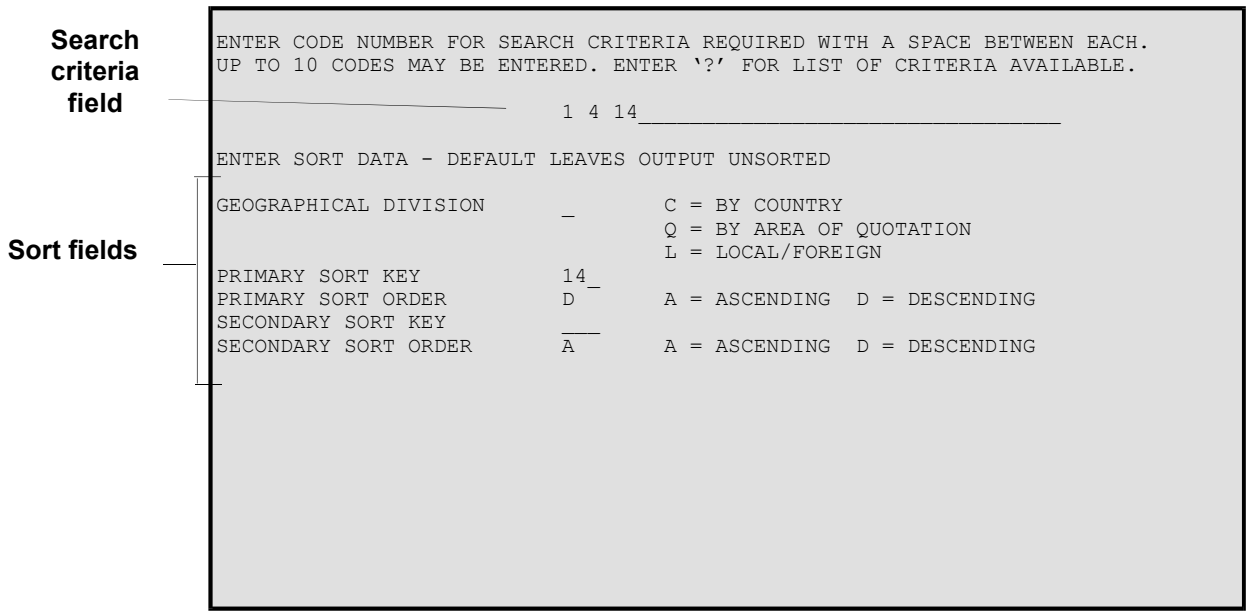
```
THIS PROGRAM SEARCHES A GIVEN LIST OF BONDS. ENTER ? WHERE HELP REQUIRED.


SPECIFY UP TO 3 LISTS, OR UP TO 10 STOCK CODES, OR A COMBINATION, WITH
SPACES BETWEEN, OR 'ALL' FOR A SELECTION FROM ALL THE BONDS.

     BUNDAN_____________________________________________________________

SEARCH CODE, IF REQUIRED              ____      ENTER 2 TO AMEND BEFORE USE   1
OPTIONS CODE, IF REQUIRED             OSTD      ENTER 2 TO AMEND BEFORE USE   1

PRICES TO BE USED                     M            M = MARKET   O = OFFICIAL LIST
PRICES TO BE AMENDED BEFORE USE       N            Y = YES      N = NO

SETTLEMENT DATE                       11/05/93     DEFAULT = TODAY



SUMMARY REPORT REQUIRED                Y   (Y = YES  N = NO)      IN CURRENCY  #_
```

145S initial input screen

In the first field type the codes or mnemonics for the issues. (Datastream codes for individual issues, list mnemonics for lists, or **ALL** if you are searching through the whole bonds database.) This is the only field you need to use in this example.

2. Type **BUNDAN** in the first field, and press **<Enter>**.

The next input screen allows you to enter the criteria for your search, and also contains the sort fields you used in the previous example to control the output:



145S search criteria screen

In the first field of this search criteria screen, you must enter the data item numbers on which you want to search - the price, the yield and the life in this example. (Data items are described on page 15 and listed on page 169.) Refer to HELP FILI? at the Datastream prompt for online information.

The valid data item numbers for this field are listed on interactive help.

3. Type **?** in the first field and press **<Enter>**. This will display help for the field.
4. Type **1**, press **<Space>**, type **4** then press **<Space>** and type **14**. Press **<Tab>** to move to the **SORT DATA** fields.

5. Fill in the **SORT DATA** fields to sort the output into descending order of life to final date, as you did in the previous example. To do this press **<Tab>** to move to the **PRIMARY SORT KEY** field and type **14** (for Life to final date) then type **D** in the **PRIMARY SORT ORDER** field (for descending order).

   This input screen is now complete. Press **<Enter>**.

   The following screen appears:

```
ENTER QUALIFYING DATA FOR SEARCH CODES, JUST PRESS 'ENTER' FOR DEFAULT VALUES.

          INCOME TAX RATE               0.00__
          CAPITAL GAINS TAX RATE        0.00__
```

6. Press **<Enter>** to accept the default settings. If you wanted to you could alter them.
7. The final input screen appears. You can now enter the precise limits for each of the search items. Fill in the input screen as follows:

```
INPUT LIMITS REQUIRED FOR SEARCH

  1: CURRENT PRICE
FORMAT: OVER XXXX.XX, UNDER XXXX.XX, XXXX.XX TO XXXX.XX      90 TO 100_________

  4: REDEMPTION YIELD
FORMAT: OVER XXXX.XX, UNDER XXXX.XX, XXXX.XX TO XXXX.XX      OVER 6_________

 14: LIFE TO FINAL DATE
```

8. These limits specify that the search provides only those issues (from the list) with:

   a current price of DM90 - DM100

   a redemption yield of more than 6%

   a life to final date of 2 - 6 years.

9. Press **<Enter>** to start the search. The results are then displayed:

```
THERE ARE   12 STOCKS MEETING YOUR SEARCH REQUIREMENTS.

DO YOU WISH TO CONTINUE WITH THIS LIST FOR DISPLAY ?   Y   Y = YES N = NO
```

10. Press **<Enter>** to display the first output page:

```
DATASTREAM:145S        LIST OF BONDS IN USER SPECIFIED FORMAT          11/ 5/93
                                EXPENSES IGNORED
                              INCOME TAXED AT  0.00%
                         CAPITAL GAINS TAXED AT  0.00%

  STOCK NAME                                  CURRENT        REDEMP       LIFE-
                                              PRICE          YIELD        FINAL
                                                                          DATE


BUNDESREPUB.DT 86 3 6%      1998              98.58          6.306        5.44
BUNDESREPUB.DT 86 1 6%      1998              99.03          6.232        4.94
TRHDSLT.       1993 6 1/8%  1998              99.66          6.203        4.88
BUNDESREPUB.DT 1988 6 1/8%  1998              99.63          6.210        4.86
BUNDESREPUB.DT 1988 6 1/4%  1998              99.88          6.272        4.77
BUNDESREPUB.DT 87 2 6 1/8%  1997              99.48          6.262        4.19
BUNDESREPUB.DT 1987 5 1/2%  1997              97.48          6.226        4.02
BUNDESREPUB.DT 1987 6%      1997              99.22          6.227        3.86
BUNDESREPUB.DT 1987 5 3/4%  1997              98.50          6.199        3.77
BUNDESREPUB.DT 1987 6 1/8%  1997              99.72          6.200        3.69
BUNDESREPUB.DT 86 2 5 3/4%  1996              98.80          6.165        3.20
BUNDESREPUB.DT 86 1 5 3/4%  1996              98.85          6.162        3.11
```

The headings display the tax rates and any other settings used. The **STOCK NAME** column lists the issues which met your criteria, and the remaining columns show these criteria and the value for each issue.

Press **<Enter>** to page through the remaining output pages.

When the last screen of issues has been displayed, a final screen is displayed, allowing you to save the search criteria. This is useful if you want to apply the same criteria in a future search.

Saving the search criteria means that you can use the same data item numbers and the limits for each item in a later session, without having to re-enter the details. Type **Y** in this field and press **<Enter>**. When you are prompted for a title for the search criteria, type **TUTORIAL3** and press **<Enter>**. A message appears, giving the 'search code' which is assigned to the data you save:

```
DO YOU WISH TO STORE THE SEARCH CRITERIA?         : Y   ENTER 'Y' FOR YES
ENTER TITLE FOR SEARCH CRITERIA                   : TUTORIAL3
TUTORIAL3            - THESE SEARCH CRITERIA CAN NOW BE REUSED WITH CODE S072

DO YOU WISH TO STORE OUTPUT AS A RESTRICTED LIST? : N   ENTER 'Y' FOR YES
```

11. Make a note of the search code (it has the format S*nnn*, where *nnn* is a three-digit number).

    Another prompt appears asking whether you want to save the issues which met your criteria as a separate list, with access restricted just to you.

12. Accept the default setting by pressing **<Enter>** (do not save the list).

    Return to the Datastream prompt. You have now completed the worked example, using data items to specify the data in the 145S search program. You have also saved the search criteria under a search code which you can use in any subsequent use of program 145S (or of Datastream's 'search and display' program, 145X).

Note: *If you want to try a quick example of using the search code, use program 145S with the list GILTS and the new search code you've just set up.*

Summary

The points to remember from this example are:

- **Interactive help for any field is available in the 144 and 145 programs. To access help, type ? in the field and press <Enter>**
- **To select items of data in the 144 and 145 series programs, use data item numbers**
- **You can save a set of search criteria (the data item numbers with associated limits) under a search code**

Example 4 - Displaying a yield curve for a list of bonds

In the previous three worked examples you used programs 144 and 145 to analyse individual issues and lists of issues. Example 4 uses one of the programs from Datastream's Graphics service to analyse a list and present the results graphically.

The Datastream Graphics service comprises the 401 series of programs. Different programs are available for plotting different types of graphs - line charts, pie charts and so on. The program you will use to plot a yield curve is program 401N.

In this example you will display a yield curve for a stored list of Japanese government issues. To give you an idea of the flexibility of the programs, the example has been split into two parts:

- Plotting the basic yield curve for all the issues in the list
- Customising the graph

At the end of the two examples, there is a brief description of some of the most important differences between the bond research programs (the 144s and 145s) and the graphics programs.

Stage 1 - Plotting a yield curve

In this example you will produce a simple yield curve, showing the life of issues in the list (along the X-axis) against the calculated redemption yields for issues (along the Y-axis). The yield curve plotted will be a cubic equation of the form:

$$Y = A + Bx + Cx^2 + Dx^3$$

(Plotting the curve to the power 3 is the default for program 401N, although you can choose any power between 1, a straight line, to 5).

The steps are as follows:

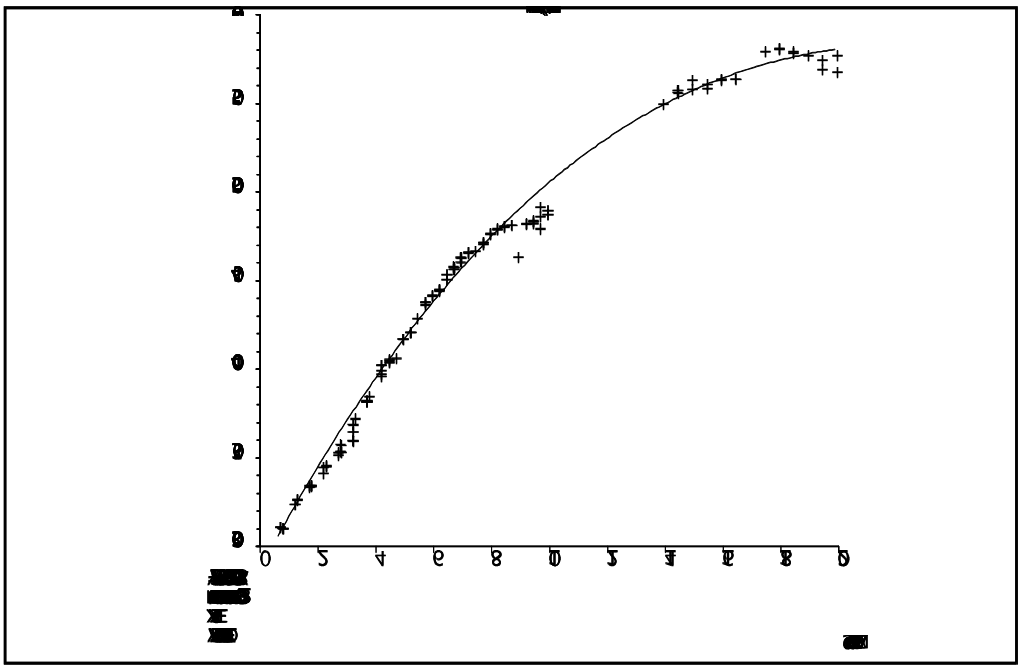
1. Look up the list mnemonic for the Japanese government issues list (how to do this is described on page 13). The mnemonic is JPGVT.
2. Type **401N** at the Datastream prompt and press **<Enter>** to display the input screen.

```
DATASTREAM 401N                                                    11/05/93

THIS PROGRAM PLOTS A YIELD CURVE FOR ONE LIST OF BONDS AT ONE OR TWO DATES
OR FOR TWO LISTS AT ONE DATE.
ENTER ? WHERE HELP REQUIRED.

LIST (1)  JPGVT____                    CALCULATION DATE (1)  11/05/93
LIST (2)  _________                    CALCULATION DATE (2)  ________

 LIFE (X AXIS)  LF                     YIELD (Y AXIS)  RY

 YIELD BASIS AND FREQUENCY WILL DEFAULT TO MARKET STANDARD UNLESS SPECIFIED.

   YIELD BASIS  __  (FL/AV/EQ/CA/PU)   FREQUENCY OF YIELDS  __  (SA/AN)

     DISPLAY SCATTER OF LIST (1,2,3,N)  N
     LIST (3) (SCATTER ONLY)  _________   CALCULATION DATE (3)  ________

   POWER OF CURVE (1)  3               POWER OF CURVE (2)  3

SCREEN TITLE  ____________________________________________________________
ACCESS 2ND SCREEN TO ALTER CALCULATION METHOD AND/OR DISPLAY FORMAT  N
```

401N initial input screen

The fields you need to complete are in the above diagram. Full interactive help is available on this program, so if you want to know any more about any of the fields, move to that field, type **?** and press **<Enter>**.

3. Type **JPGVT** in the **LIST(1)** field.
4. Move to the **DISPLAY SCATTER OF CURVE** field. Type **1** in this field (to display the individual issues as points on the final graph).
5. Press **<Enter>**. The yield curve for the list appears on the screen:



Program 401N calculates the yields for each issue in the list (and plots them as scatter points on the graph, as you requested on the input screen). It also plots the yield curve of best fit to these points. (In this case, the curve is calculated to the power 3, the default value in the **POWER OF CURVE (1)** field on the input screen.)

Note: *A full definition of the methods of calculation used for yields is given in the Datastream Definitions Manual.*

The X-axis range is automatically chosen to accommodate the full range of lives for the issues making up the list (0 - 20 years for the Japanese list). Similarly, the Y-axis range is automatically chosen to accommodate the calculated yields for these issues.

6. Press **<Enter>** when you have finished with the graph. Note that instead of returning to the Datastream prompt, you are returned to the initial input screen so that you can continue to use the program immediately. This feature is called 'Wraparound', and it is common to all the Graphics programs. (You can of course return to the Datastream prompt at any time by pressing **<F2>**.) For now, leave the input screen displayed.

You have now completed the first part of the example, by using program 401N to produce a yield curve for all the issues in a list. In the next stage you will use other input fields to further customise the output.

Stage 2 - Customising the yield curve

In the second stage of this example you plot the yield curve for a list of Japanese government issues. customising the graph to plot only those constituents with a life of less than 10 years, and applying a stabilising point for the short-end of the curve. This will fix the yield for issues with less than one year to run at the 3-month interest rate on Japanese bills.

The steps are as follows:

1. With the 401N initial input screen displayed, ensure that the **LIST (1)** field contains **JPGVT**, and the **DISPLAY SCATTER OF CURVE** field contains **1**.
2. Move to the last input field on the screen (either by pressing **<Tab>** or press **<End>**).
3. Type **Y** at the **ACCESS 2nd SCREEN...** field and press **<Enter>**. The second screen is displayed:

   The fields on this screen are divided into two groups:

   Display modification fields that let you control the appearance of the graph by setting your own X- and Y-axis ranges, and the intersection point of the axes. For this example, leave these fields blank.

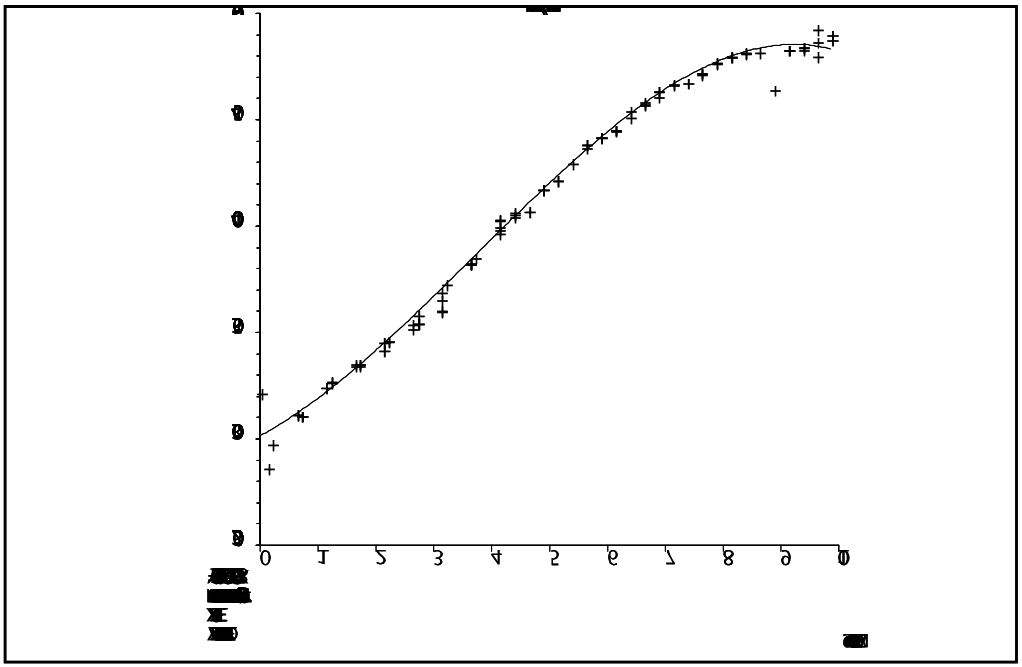
   'Calculation amendment' fields, that give you control over the yield calculations, the issues which are included in the final plot, and allow you to perform a log-transform on the graph.

   (Further details of any field are available through interactive help.)
4. Move to the **SHORT END STABILISATION CURVE (1)** field and type **JAP3MBL** (this is the mnemonic for the interest rate on Japanese 3-month bills).
5. Move to the upper limit of the **X AXIS RANGE** fields.
6. Type **10** in the upper limit field to limit the graph to issues with less than 10 years remaining.:

```
DATASTREAM 401N                                                  11/05/93

ENTER ? WHERE HELP REQUIRED.

DISPLAY MODIFICATION.

 X AXIS RANGE  _______  TO  _______  X AXIS INTERSECTION VALUE  _______
 Y AXIS RANGE  _______  TO  _______  Y AXIS INTERSECTION VALUE  _______

 DISPLAY UNDERLYING DATA (1,2,N)  N

CALCULATION AMENDMENTS.

 SHORT-END STABILISATION CURVE (1) (E.G. 3 MONTH INTEREST RATE)  JAP3MBL_____
 SHORT-END STABILISATION CURVE (2)                               ____________

 ELIMINATE EXTREME VALUES FROM CURVE CALCULATION
    X AXIS RANGE - ABOVE  __0.00  BELOW   10.00
    Y AXIS RANGE - ABOVE  __0.00  BELOW  _99.99
    X AXIS DECIMAL LOG TRANSFORM (Y/N)  N
```

All issues with a life outside the range of 0 to 10 years will now be ignored, and so they will have no effect on the yield curve plotted.

7. Press **<Enter>** to display the graph.



The best fit yield curve now follows the scatter points far more closely than before. This is because the long-term issues (those with lives of 16 - 20 years on the original plot) have been removed from the calculations and so cannot influence the shape of the curve over this shorter period.

When you have finished with this graph, press **<Enter>** to return to the 401N initial input screen. You have now completed the worked example, by using the second input screen to customise the output graph.

Note: *You can also try using program 401N to plot another type of yield curve. Repeat the steps involved in stage 1 of this example, but this time plot the interest yield along the Y-axis, rather than the redemption yield. Do this by overtyping* `RY` *in the YIELD (Y AXIS) field on the initial input screen with* `IY`*. See interactive help for further information.*

See also ‘Stored yield curves and 300A expressions’ on page 150.

Summary

The points to remember from this example are:

- **Datastream's graphics programs can be used with bonds, bond indices and bond lists**
- **Full interactive help is available on the graphics programs - type ? in the field and press <Enter>**
- **Yield Curves can be drawn for any list of bonds**

Using the programs

Using the programs

Introduction

This section provides details of all the programs you use in bond research on Datastream, and gives you samples of the kind of output you can obtain in each case. The programs are grouped under the following tasks:

- Working on an individual bond - beginning on page 61
  Descriptions of the programs specifically designed for research on a specific bond - the 144 series
- Working on lists of bonds and individual bonds - beginning on page 85
  Descriptions of programs specifically designed for research on bond lists, and for searching - the 145 series
- Bond research using other Datastream services - beginning on page 147
  Examples of the Graphics Service programs used in bond research (the 401 series) and of the Time Series Analysis programs used to produce tabular reports of bond data (the 301 series)
- Creating your own bonds and lists of bonds - beginning on page 163
  Descriptions of the programs that help you build up your own data on Datastream

Before the program descriptions, the next few pages contain information about options common to the majority of bond research programs.

Options in the bond programs

'Options' are values provided for tax position, expense rates, treatment of interest, yield frequency and settlement basis. The default settings (used in all programs unless you specify otherwise) are:

- Zero income tax
- Zero Capital Gains Tax (CGT)
- Zero buying/selling expenses
- Settlement date of today
- Yield frequency depending on the type of issue (see the *Datastream Definitions Manual*)

You can set up and store your own values, so that any bond or bond list can subsequently be analysed without having to redefine the critieria each time. For example, all calculations are gross when using the defaults; setting up and storing your own sets of options lets you quickly consider the effect of various tax positions.

Any stored set of values is identified by a unique 'Options code' in the format O*nnn*, where O is the letter 'O' and *nnn* are the identifying numbers (eg. O123). These options codes can be used in all 144 and 145 programs. The code is assigned automatically by Datastream. The default set of values is identified by the options code OSTD.

Stored options can be amended before you use them. These amended settings can then be stored under the same code or a new code.

You can review stored options using program 146Y. See page 144

The steps for setting up and storing options are the same for all 144 and 145 series programs and are described in the following pages.

Setting up new options

Setting up new values involves amending an existing set of values (either the standard, default set or a set you have previously saved). The initial input screen of all the 144 and 145 programs includes the following two fields:

Options fields

```
SPECIFY UP TO 3 LISTS, OR UP TO 10 STOCK CODES, OR A COMBINATION, WITH
SPACES BETWEEN.
     ____________________________________________________________________

OPTIONS CODE, IF REQUIRED          OSTD    ENTER 2 TO AMEND BEFORE USE   1

PRICES TO BE USED                  M           M = MARKET   O = OFFICIAL LIST
```

Input fields for amending options

To use existing options, type the appropriate options code in the first field. If necessary, overtype the default code. The options you specify are used in any calculations carried out by the program.

To set up a new set of options, type **2** in the second input field. When you have completed the initial input screen for the program and pressed **<Enter>**, the current options settings are presented ready for you to amend:

Options data you can specify

```
ENTER OPTIONS DATA - A BLANK FIELD INDICATES DEFAULT VALUE.


INCOME TAX RATE            _0.00
CAPITAL GAINS TAX RATE     _0.00
EXPENSE RATE               _0.00___
EXPENSE TYPE               _      B = BUYING          S = SELLING
FREQUENCY OF YIELDS        __    AN = ANNUAL         SA = SEMI-ANNUAL
INTEREST ON SHORT BONDS    _      S = SIMPLE          C = COMPOUND
```

Amending the options settings

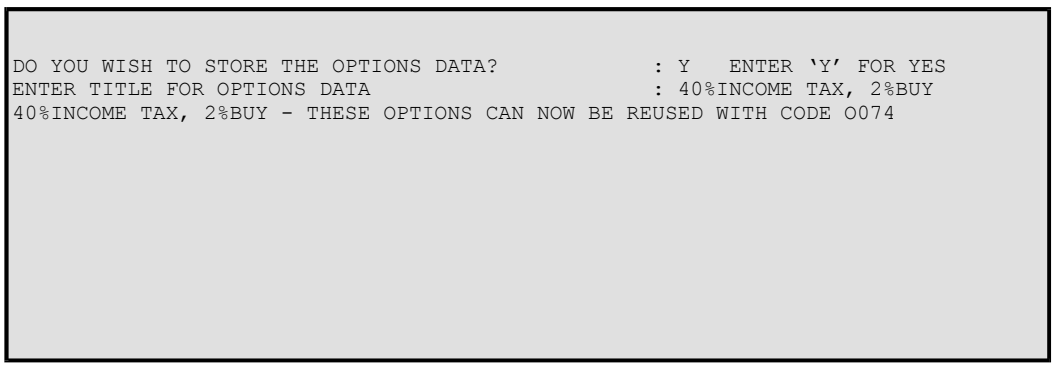
Overtype these values as required. Press **<Enter>** when you have finished. The program then continues with calculation and display of results, taking into account the data you have entered.

Storing options

If you have amended any options settings when using a program, you will see the following prompt after the output has been displayed:

DO YOU WISH TO STORE THE OPTIONS DATA? : _ ENTER 'Y' FOR YES

To save the settings, type **Y**. You are then prompted for a title for the set of values. Type a descriptive title and press **<Enter>**. The options code is then assigned and displayed:



Saving options settings under an options code

You can review and delete stored options using program 146Y.

Researching an individual issue

Researching an individual issue

Introduction

The following pages show how to use those programs designed for use with individual bonds. Programs which work with more than one bond are described on page 85.

The tasks you can perform are described in the following order:

- Displaying all data for a bond (program 144C)
- Displaying key items for a bond (program 144A)
- Calculating prices/yield data for a bond (program 144B)
- Calculating yields over a specific period (program 144D)
- Displaying yields at various reinvestment rates (program 144E)
- Profile of a borrower and list of all their issues (program 144F)
- Designing your own display of data (program 144X)

In each case, a brief program description precedes the instructions on how to use the program. A sample of the output you can obtain with the program is also given.

Displaying all data for a bond - 144C

You can display all the key information about a bond, using program 144C. The information displayed differs according to the type of bond - so where appropriate, redemption schedules, call schedules, convertible details and so on, will appear. The data shown on 144C includes information not available through any other Datastream program, including textual comments. You can print or save the output, as described in the 'Introduction'.

All yield calculations are gross (that is, there is no allowance for income tax, capital gains tax, and so on). A sample of output for program 144C is shown opposite.

Using program 144C

Note: *This program has interactive help. Type **?** in the input field and press **<Enter>**.*

Type **144C** at the Datastream prompt and press <**Enter**>. The 144C input screen appears.

Use this input screen to specify the bond you want to examine. Type the Datastream code number in the input field and press **<Enter>**. All the data items that Datastream has for this bond appear over several screens. Press **<Enter>** to display each screen of data.

Note that you can bypass this input screen by typing the program number and the bond code directly at the Datastream prompt. Type a space between 144C and the bond code and press **<Enter>**.

For definitions of any of the data items, see the *Datastream Definitions Manual*.

Sample output of program 144C

144C output shows all data held by Datastream for the specified bond. The data is spread over a number of screens. This sample shows data for an international bond issued by ICI:

```
747746 I.C.I.              1987 9 3/4%  15/04/05          CURRENCY: £    11:39

   CURRENT     CLEAN      GROSS     REDEMPTN   INTEREST   ACCRUED    JAPANESE
   PRICE       PRICE      PRICE     YIELD      YIELD      INTEREST   SIMPLE
                                                                     YIELD

  103.437     103.437    104.358      9.256      9.426      0.921      9.147

Last change of prices received on 12/05/93

   YIELD TO   YIELD TO    LIFE TO   LIFE AT    DURATION   MODIFIED   CONVEXTY
   DURTN TO   MOD DURN    FINAL     ISSUE                 DURTN TO   TO
   MATURITY   MATURITY    DATE                            MATURITY   MATURITY

    9.103       9.052     11.906    18.000      7.553      6.913     54.120

   1/4 PT.    1 POINT     12 MONTH  12 MONTH    FIRST      FIRST      COUPON
   VARIA'TN   VOLAT'TY    PRICE     PRICE       INTEREST   INTEREST   DATES
   FIN.DATE   FIN.DATE    HIGH      LOW         DATE       PAYMENT

    0.035       6.913     107.313   93.875     15/ 4/88    8.044     15/ 4 A
```

```
747746 I.C.I.              1987 9 3/4%  15/04/05          CURRENCY: £    11:39

   NUMBER      ISSUE      1ST INT    AMOUNT     COUPON     AMOUNT     NO. OF
   OF DAYS     DATE       ACCRUAL    ISSUED                IN ISSUE   COUPONS
   ACCRUED                DATE       (M)                   (M)        PER YEAR

      34      15/ 4/87   15/ 4/87     100.00    9.7500      100.00        1

   TYPE OF     TYPE OF    AREA OF    AREA OF    COUNTRY    CURRENCY   INDUSTRY
   BOND        GUAR'TEE   QUOTAT'N   DELIVERY   OF                    GROUP
                                                GUAR'TOR

     BL          NP         LN         EU         UK         £          IND

   LEAD        REDEMPTN   S/E        O/L        I/B        D/S        ISIN
   MANAGER     DATE       MNEMONIC   CODE       CODE       CODE       CODE

     359      15/ 4/05                          I12921     747746 GB0004583539
```

Displaying key items for a bond - 144A

Use program 144A to display a range of basic price and yield data for any bond.

Using program 144A

Note: *This program has interactive help. Type **?** in the input field if you need instructions.*

At the Datastream prompt type **144A** and press <**Enter**>. The following screen appears:

bond for report

options for the price/yield calculations. See page 56.

```
THIS PROGRAM DISPLAYS STANDARD DATA FOR A GIVEN BOND.

ENTER OPTIONS CODE OR OPTIONS REQUIRED. A BLANK FIELD INDICATES DEFAULT VALUE
FOR TYPE OF BOND.  ENTER ? WHERE HELP REQUIRED.

STOCK CODE                    ____________
OPTIONS CODE                  ____        ENTER '2' TO AMEND BEFORE USE   1
ENTER OPTIONS REQUIRED:
INCOME TAX RATES              _0.00    _____    _____    _____    _____
CAPITAL GAINS TAX RATES       _0.00    _____    _____    _____    _____
EXPENSE RATE OR 'ST'          _0.00___
EXPENSE TYPE                  _    B = BOUGHT           S = SOLD
INTEREST ON SHORT BONDS       _    S = SIMPLE           C = COMPOUND
FREQUENCY OF YIELDS           __   AN = ANNUAL          SA = SEMI-ANNUAL
SETTLEMENT DATE BASIS         _    T = TODAY            1 = 1 DAY ON
                                   2 = 2 DAYS ON        7 = 7 DAYS ON
_                                  A = CURRENT ACCOUNT
```

Program 144A input screen

In the **STOCK CODE** field specify the bond you want data for.

When this screen is complete, press **<Enter>** to see the first output screen of data. Press **<Enter>** again to view the second screen.

Sample output of program 144A

The data is presented on one or more screens, depending on whether you have requested tax information. The first screen shows basic data, the second shows a range of yield data allowing for the options settings you have used. In the following example standard data is shown with no options data entered for a British Gas issue :

```
561664 BRITISH GAS          1990 12 3/4%  13/02/95          CURRENCY: £    11:56

  CURRENT      12 MONTH      12 MONTH       AMOUNT         LIFE         NUMBER
  PRICE          PRICE         PRICE       IN ISSUE                    OF DAYS
                 HIGH           LOW          (M)                       ACCRUED

  109.812      111.875       103.813         300.00       1.733           96




    TAX        ACCRUED         GROSS       INTEREST      REDEMPTN      1/4 PT.
   RATES       INTEREST        PRICE        YIELD         YIELD        VARIA'TN

   GROSS         3.400       113.212        11.611         6.531         0.145
```

Sample output of program 144A

Calculating price/yield data - 144B

Program 144B displays basic price and yield data (as with program 144A), and allows you to specify the price/yields on which the displayed data is calculated. This allows you to consider the effect of price changes on yields and what price will produce a specific yield on a specific bond.

You can also change the default settlement date stored for the issue to calculate yield on a future or previous date.

Using program 144B

Note: *This program has interactive help. Type **?** in the input field if you need instructions.*

At the Datastream prompt type **144B** and press <**Enter**>. The following screen appears:

bond for report

options used for the price/yield calculations
See page 56

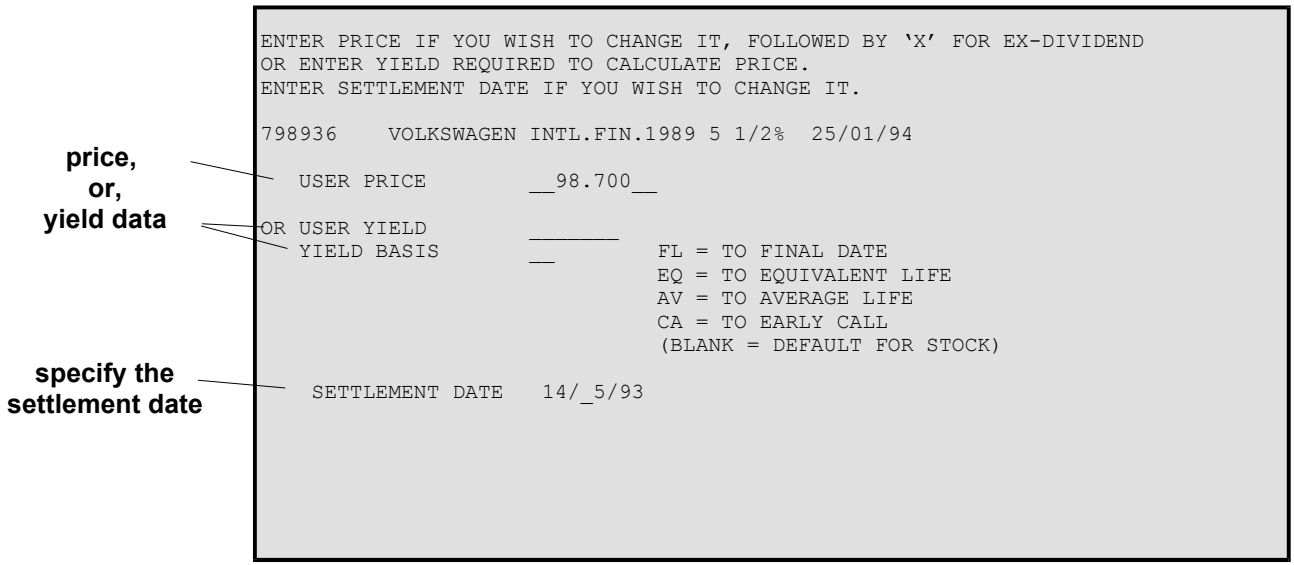
```
THIS PROGRAM DISPLAYS STANDARD DATA FOR A GIVEN BOND WITH THE OPTION OF USER
ENTERED PRICE OR YIELD.
ENTER OPTIONS CODE OR OPTIONS REQUIRED. A BLANK FIELD INDICATES DEFAULT VALUE
FOR TYPE OF BOND. ENTER ? WHERE HELP REQUIRED.

STOCK CODE                  ____________
OPTIONS CODE                ____    ENTER '2' TO AMEND BEFORE USE    1
ENTER OPTIONS REQUIRED:
INCOME TAX RATES            _0.00    _____    _____    _____    _____
CAPITAL GAINS TAX RATES     _0.00    _____    _____    _____    _____
EXPENSE RATE OR 'ST'        _0.00___
EXPENSE TYPE                _    B = BOUGHT           S = SOLD
INTEREST ON SHORT BONDS     _    S = SIMPLE           C = COMPOUND
FREQUENCY OF YIELDS         __   AN = ANNUAL          SA = SEMI-ANNUAL
SETTLEMENT DATE BASIS       _    T = TODAY            1 = 1 DAY ON
                                 2 = 2 DAYS ON        7 = 7 DAYS ON
                                 A = CURRENT ACCOUNT
```

Program 144B input screen

In the **STOCK CODE** field specify the bond you want data for.

When this screen is complete, press **<Enter>** .

A second input screen appears; this gives you the name and current price of the bond you specified. The fields allow you to specify the required price or yield information:



Program 144B - Price/yield input screen

Type your own price in the **USER PRICE** field. The program calculates the yield from the price you input. You can use this field for 'what if' calculations.

Alternatively you can type yield details in the **USER YIELD** and **YIELD BASIS** fields. The program then calculates the price from this data. The default for the type of stock will be used if you do not specify otherwise.

Finally you can specify a settlement date.

When the screen is complete, press **<Enter>.**

The screen displays the yield information for the price you input.

For definitions of any of the data items, see the *Datastream Definitions Manual*.

Sample output of program 144B

The output from program 144B consists of the same basic price and yield data shown by program 144A, but data is calculated from the price/yield/settlement data you specified.

```
798936 VOLKSWAGEN INTL.FIN.1989 5 1/2%  25/01/94          CURRENCY: DM   12:04

   YOUR       12 MONTH     12 MONTH      AMOUNT        LIFE        NUMBER
   PRICE        PRICE        PRICE      IN ISSUE                   OF DAYS
                HIGH         LOW          (M)                      ACCRUED

   96.700      99.406       94.250        200.00      0.697         109




    TAX       ACCRUED       GROSS      INTEREST     REDEMPTN     1/4 PT.
   RATES      INTEREST      PRICE       YIELD        YIELD       VARIA'TN

   GROSS        1.665       98.365       5.688       10.565        0.403




                FOR SETTLEMENT: 14/ 5/93
```

Sample output of 144B

Displaying calculated yields over a specific period - 144D

Program 144D helps you determine exactly how long a bond should be held to produce a desired yield, or whether in fact the bond will produce the desired yield over any time period. You can calculate and display yields between two dates, supplying your own prices and yields.

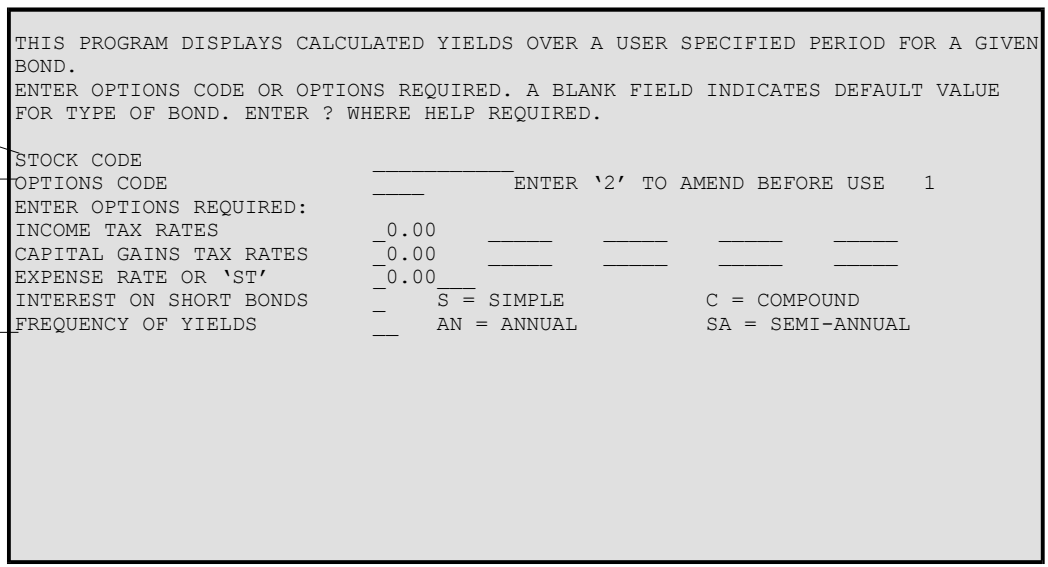
Using program 144D

Note: *This program has interactive help. Type ? in the input field if you need instructions.*

At the Datastream prompt type **144D** and press <**Enter**>. The following screen appears:

bond for report

options for price/yield calculations. See page 56

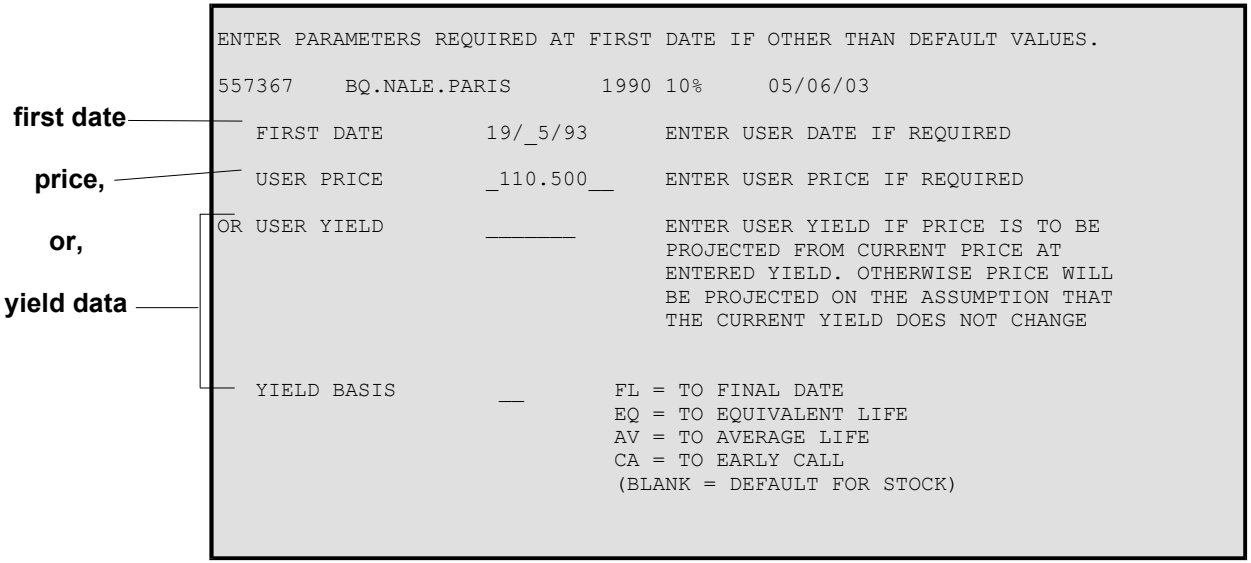


Program 144D initial input screen

In the **STOCK CODE** field specify the bond you want data for.

Press **<Enter>** when this screen is complete.

You now specify the price/yield data to be used in the calculations at the two dates. You do this on two input screens. The first screen is for price/yield data at the first date, the second screen is for data at the second date:



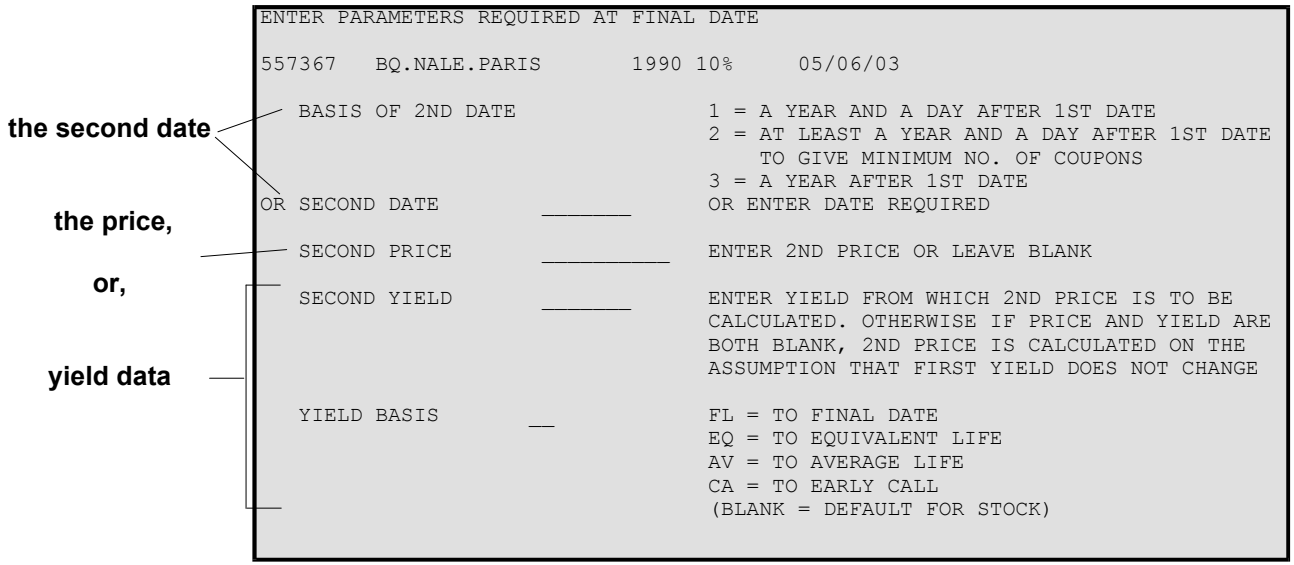
144D - Specifying the first date & price/yield data

Specify the first date. Then either specify the price or yield data to be used:

- If a price is entered, the yield is calculated from this price (the default shows the current price)
- If a yield and yield basis is entered, the price will be computed from this data

Note that the default yield basis depends on the type of issue - see ‘Redemption yield’ in the *Datastream Definitions Manual*.

Press **<Enter>** to enter the data for the second date:



144D - Specifying the second date & price/yield data

Use the **BASIS OF 2ND DATE** or the **OR SECOND DATE** fields to specify the second date required.

You can optionally set a **second price** and **yield** for the second date. If both are left blank, the second price will be calculated on an unchanged yield.

Press **<Enter>** when you have finished entering input. The yields and prices for the period between the two dates you specified are displayed.

For definitions of any of the data items, see the *Datastream Definitions Manual*.

Sample output of program 144D

The output from program 144D shows the dates you specified, tax rates used in the calculations and the accrued interest, prices and yields over the period. The following example shows:

- Income tax rates of 0, 25, 40, and 50%
- Capital gains tax of 0, 2, 5 and 10%
- The second date used is a year and a day after the first date.

```
557367 BQ.NALE.PARIS       1990 10%     05/06/03          CURRENCY: FF   12:22

    TAX          DATES       ACCRUED        CLEAN      REDEMPTN        YIELD
   RATES                     INTEREST        PRICE       YIELD         OVER
                                                                      PERIOD

 IT@    0.00   19/ 5/93        9.534      110.500        8.408
 CG@    0.00   20/ 5/94        9.562      109.792        8.408         7.743

 IT@   25.00   19/ 5/93        7.151      112.884        5.801
 CG@    2.00   20/ 5/94        7.171      112.182        5.766         5.796

 IT@   40.00   19/ 5/93        5.721      114.314        4.297
 CG@    5.00   20/ 5/94        5.737      113.617        4.245         4.686

 IT@   50.00   19/ 5/93        4.767      115.267        3.355
 CG@   10.00   20/ 5/94        4.781      114.573        3.297         4.042
```

Yields at various reinvestment rates - 144E

This program displays the yields obtainable by reinvesting the income from a bond in the same issue. An investor can only realise the full yield on a bond if all the coupon payments are reinvested at the same rate - for example on a 9% yield to maturity bond, if the reinvestment rate is more/less than 9% then the realised yield is similarly more/less than the yield to maturity. Using 144E you can supply up to 5 separate rates of reinvestment. The yields at these rates are calculated and displayed alongside the zero reinvestment rate.

Prices and yields used in the calculations can be specified if required.

Using program 144E

Note: *This program has interactive help. Type ? in the input field if you need instructions.*

At the Datastream prompt, type **144E** and press **<Enter>**.

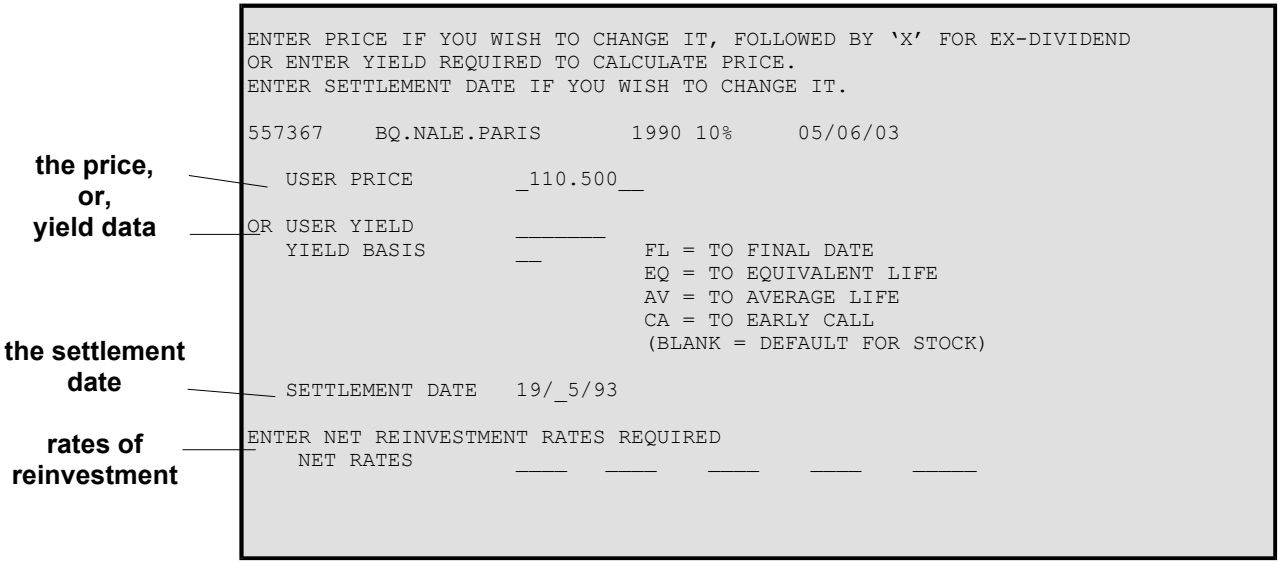
The first 144E input screen is the same as that of 144A or 144B.

In the **STOCK CODE** field specify the bond you want data for.

See page 56 for a full description of options.

Press **<Enter>** when this screen is complete.

A second input screen appears; this screen enables you to change the price or yield data to be used in the calculations if required, and to set the reinvestment rates to be used in the calculations:



Type your own price in the **USER PRICE** field, if required. The program calculates the yield from the price you input. You can use this field for 'what if' calculations.

Alternatively you can type yield details in the **USER YIELD** and **YIELD BASIS** fields. The program then calculates the price from this data.

You can also specify a **settlement date** if the default displayed is not appropriate.

You must enter at least one **reinvestment rate**.

When the screen is complete, press **<Enter>.** The output is displayed. Press **<Enter>** to display the second (and subsequent) screens.

For definitions of any of the data items, see the *Datastream Definitions Manual*.

Sample output of program 144E

The output of program 144E shows the basic price and yield information for the bond (with allowances for the tax rates specified in the options settings), at each of the reinvestment rates. In the example below, income tax of 25% and 40% (with zero CGT) has been set, with reinvestment rates of 7%, 8%, 9% and 10%:

```
557367 BQ.NALE.PARIS       1990 10%     05/06/03           CURRENCY: FF   12:34

             CURRENT     REIN-       TAX       REIN-    REDEMPTN
              PRICE     VESTMENT     RATES    VESTMENT    YIELD
                          RATE                 YIELD
            110.500       7.000   IT@   0.00
                                  CG@   0.00    7.907      8.408
                                  IT@  25.00
                                  CG@   0.00    6.138      5.773
                                  IT@  40.00
                                  CG@   0.00    4.932      4.222

            110.500       8.000   IT@   0.00
                                  CG@   0.00    8.261      8.408
                                  IT@  25.00
                                  CG@   0.00    6.446      5.773
                                  IT@  40.00
                                  CG@   0.00    5.206      4.222

            110.500       9.000   IT@   0.00
                                  CG@   0.00    8.625      8.408
                                  IT@  25.00
                                  CG@   0.00    6.765      5.773
                                  IT@  40.00
                                  CG@   0.00    5.490      4.222

            110.500      10.000   IT@   0.00
                                  CG@   0.00    9.000      8.408
                                  IT@  25.00
                                  CG@   0.00    7.095      5.773
                                  IT@  40.00
                                  CG@   0.00    5.785      4.222
```

Sample output of program 144E (edited)

Displaying a profile of a borrower - 144F

Program 144F displays a textual summary of a borrower, and lists international and/or domestic issues of that borrower.

Using program 144F

Note: *This program has interactive help. Type ? in the input field if you need instructions.*

At the Datastream prompt type **144F** and press **<Enter>**. The following screen appears:

borrower or bond code

issues to be displayed

```
THIS PROGRAM PROFILES A BORROWER AND LISTS HIS ISSUES.

ENTER EITHER A BORROWER CODE OR THE CODE NUMBER OF ANY ISSUE FOR THE BORROWER:

                    BORROWER CODE   ______

                    STOCK CODE      ____________

                   ISSUES FOR
                         DISPLAY   A   -  I = INTERNATIONALS
                                          D = DOMESTICS
                                          A = ALL

ENTER ? WHERE HELP IS REQUIRED
```

Program 144F input screen

Use one of the first two fields to specify:

- a borrower code (Use **<F9>** to search for borrower codes) **OR**
- a bond/warrant - all other bonds and warrants issued by a borrower will be displayed

Whichever you choose will allow all the securities issued by that borrower to be displayed.

Use **ISSUES FOR DISPLAY** to define which bonds are to be displayed: international, domestic or all.

Issues are displayed in order of issue date. If you choose all issues, the output is sorted with internationals first, followed by domestics.

Press **<Enter>** when the input screen is complete. The summary is displayed on the first output screen. Press **<Enter>** for information on the bonds issued by this borrower.

Sample output of program 144F

This example shows the profile and list of bonds for Unilever:

```
 144F                       BORROWER PROFILE            12/05/93    14:31
                            =================

UNILEVER NV                                                       BCUNL

Unilever is Netherlands part of the International Unilever Group which
mainly concerned with the manufacture and marketing of margarine and
detergents throughout the world.



 144F                       BORROWER PROFILE            12/05/93    14:31
                            =================

UNILEVER NV                                                       BCUNL

                NAME OF                                    AMOUNT    RATINGS   D/S
                 ISSUE                              CURR.  ISSUED   S&P MOODYS CODE
                ____                        __      ___    _____  __

INTERNATIONALS
_______
UNILEVER CAP.CORP.  1991 8%      28/05/96         U$      250             596090
UNILEVER AUS.       1991 12%     08/04/98         A$      150        Aaa  595822
UNILEVER CAP.CORP.  P.91 7%      30/01/98         SF      100             595271
UNILEVER            1990 9 7/8%  04/09/97         FF     1000   AAA  Aaa  588095
UNILEVER            P.90 6 5/8%  31/07/97         SF      100        Aaa  593899
UNILEVER            1990 9%      02/07/00         FL      500   AAA  Aaa  558828
UNILEVER CAP.CORP.  1990 9 1/4%  29/03/00         U$      400   AAA  Aaa  561380
UNILEVER            1989 12 3/4% 04/07/94         L    150000   AAA  Aaa  795585
UNILEVER             X/W 3 3/4%  15/07/95         SF      150        Aaa  796196
UNILEVER            1988 5 3/4%  15/04/95         FL      200        Aaa  703493
UNILEVER CAP.CORP.  1986 8 7/8%  26/03/98         U$      150   AAA  Aaa  720410
```

Sample output of 144F

Designing your own output (flexible format)- 144X

Program 144X allows you to display and order data for any bond. You can choose the data items you require to be displayed on the output screen. The display can be stored for future use - stored layouts are automatically assigned a "Layout code" of the form L*nnn* - and then you can use this Layout code with any other bond. The layout codes you create can be reviewed using program 146Y.

You can specify price and yield data (to calculate yield from a given price), and a settlement date.

Using program 144X

Note: *This program has interactive help. Type* ***?*** *in the input field if you need instructions.*

At the Datastream prompt type **144X** and press **<Enter>**. The following screen appears:

bond for report

options for the price/yield calculations. See page 56

```
THIS PROGRAM DISPLAYS USER SPECIFIED DATA FOR A GIVEN BOND IN USER SPECIFIED
FORMAT.
ENTER OPTIONS CODE OR OPTIONS REQUIRED. A BLANK FIELD INDICATES DEFAULT VALUE
FOR TYPE OF BOND. ENTER ? WHERE HELP REQUIRED.

STOCK CODE                    ____________
OPTIONS CODE                  ____      ENTER '2' TO AMEND BEFORE USE   1
ENTER OPTIONS REQUIRED:
INCOME TAX RATES              _0.00     _____    _____    _____    _____
CAPITAL GAINS TAX RATES       _0.00     _____    _____    _____    _____
EXPENSE RATE OR 'ST'          _0.00___
EXPENSE TYPE                  _     B = BOUGHT           S = SOLD
INTEREST ON SHORT BONDS       _     S = SIMPLE           C = COMPOUND
FREQUENCY OF YIELDS           __    AN = ANNUAL          SA = SEMI-ANNUAL
SETTLEMENT DATE BASIS         _     T = TODAY            1 = 1 DAY ON
                              __    2 = 2 DAYS ON        7 = 7 DAYS ON
                                    A = CURRENT ACCOUNT
LAYOUT CODE                   ____      ENTER '2' TO AMEND BEFORE USE  1
```

Program 144X initial input screen

In the **STOCK CODE** field specify the bond you want data for.

At the **LAYOUT CODE** field you can use a previously stored layout code. Type the code (in the format L*nnn*, where *nnn* is a 3-digit number).

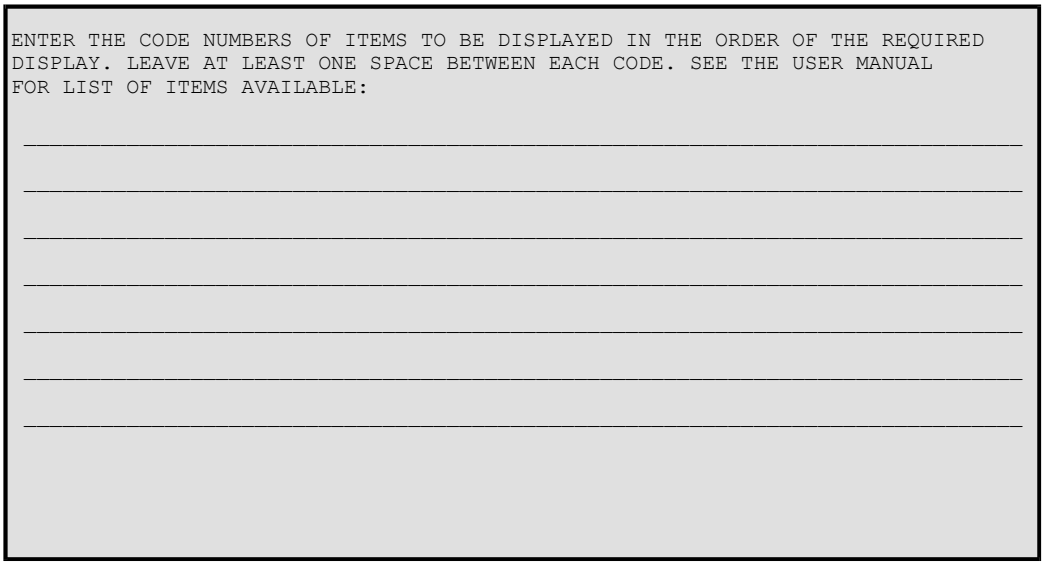
To create a new format, leave this field blank. To amend an existing layout, type **2** in the last field on this screen and ensure that you have entered an existing layout code in the LAYOUT CODE field.

Note: *Use program 146Y to see a list of your stored layouts.*

When this screen is complete, press **<Enter>**.

A second input screen appears, allowing you to specify the price and the settlement date of the bond you specified. See page 66.

When the screen is complete, press **<Enter>**. The following screen appears:



144X - Setting up the display data items

Use this screen to type the data item numbers for the data you want to include on your final display - valid data items should be entered in the order in which you wish to have them displayed.

Type a space between each item number. A full list of the data items you can choose is given on interactive help.

Where necessary you are prompted to enter further details to define items on a subsequent screen. For example, you can alter the standard values of volatility and variation if you select items 23 and 18.

Full definitions of all data items are given in the *Datastream Definitions Manual*.

Sample output of program 144X

This sample shows the result of using data item numbers 1, 3, 44, 28, 29, 65, 71 and 52, and shows how the final display includes the data items you specify. The issue used in this example is a floating rate note, DRESDNER BK. FINANCE 1989 expiring in 04/99

```
793907 DRESDNER BK.FINANCE 1989 F/R     04/99          Q  CURRENCY: DM   11:01

            CURRENT      GROSS      AMOUNT     12 MONTH    12 MONTH
            PRICE        PRICE     IN ISSUE      PRICE       PRICE
                                     (M)         HIGH         LOW

            99.900     100.532      1000.00   100.156      99.750


                          C A L L   S C H E D U L E

       CALL NOTICE:   30 DAYS              CALLED ON COUPON DATES

           -----CALL-----              -----CALL-----
             DATE      PRICE                 DATE      PRICE
           28/ 4/94   100.00              28/ 4/95   100.00
           28/ 4/96   100.00              28/ 4/97   100.00
           28/ 4/98   100.00


                          MARKET      AREA OF
                                     DELIVERY

                          INT           EU

                       FOR SETTLEMENT: 28/ 5/93
                 OPTIONAL EARLY REDEMPTION ON 28/ 4/94 AT   100.00 %
```

Sample output of program 144X (edited)

Displaying information on bonds and groups of bonds

Displaying information on bonds and groups of bonds

Introduction

The 145 suite of programs is specifically for use with individual and groups of bonds.

A full list of the data you can display is shown in the Data availability table, Appendix A.

The tasks you can perform are described in the following order:

- Displaying key items for a group of bonds (program 145A)
- Displaying yields for a list of bonds (program 145B)
- Calculating prices/yields at two dates (program 145C)
- Calculating yields over a specific period (program 145D)
- Displaying yields at various reinvestment rates (program 145E)
- Displaying data for convertibles (program 145F)
- Displaying data for equity warrants (program 145G)
- Displaying data for bond warrants (program 145H)
- Displaying the weighted profile of a list of bonds (program 145K)
- Searching for bonds meeting specific criteria (program 145S)
- Searching for bonds then displaying the data you want (program 145X)
- Cashflow calculations (program 145Y)

Features common to all 145 programs

The 145 programs have the following features in common:

- You can process up to 10 individual stocks and/or 3 lists or portfolios - described below
- You can set up, storing and using existing Options settings - values for income tax rates, CGT rates, buying/selling expense rates, etc. These are described on page 56
- You can edit prices and yields to be used in calculations - described on page 87 and 90
- You can sort the output - described on page 93

The lists you can use

In addition to individual bonds, and privately created bonds (that is, bonds or warrants created using program 300D with a P or W prefix), you can use any of the following lists:

- Datastream-maintained bond lists (see HELP CODE?, or Code Lookup)
- User-created lists created using program 300B (only the bonds within such lists are displayed)
- Lists stored as the results of a search using programs 145S or 145X. These can be edited with 80B
- **PPLIST** - a list of all bonds/warrants created on 300D
- Any portfolio maintained for valuations on Datastream (only the bonds within such a portfolio are displayed)
  - portfolios created on 87 require the prefix I#
  - portfolios created on 86 require the prefix P#
  - portfolios created on Datastream Icon require the prefix C#
- Lists of issues from a borrower

Supplying price/yield data

145 programs (except 145C) let you control the type of prices used, and specify the exact price/yield values used in the program's calculations. Two fields appear on the first screen of these programs:

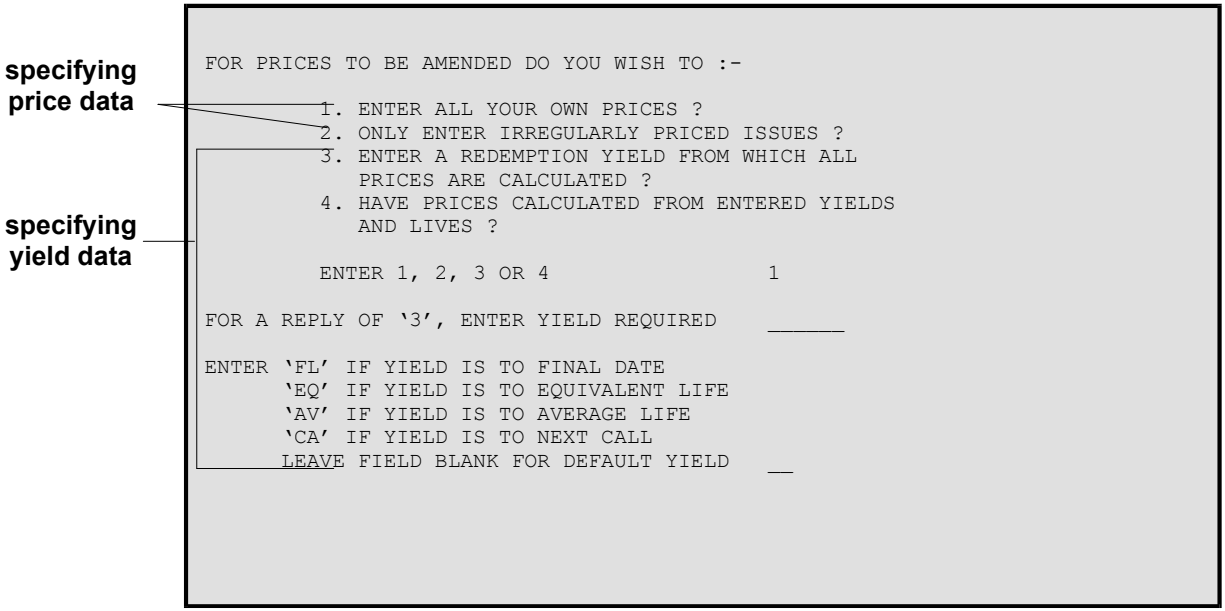
```
PRICES TO BE USED                   M     M = MARKET   O = OFFICIAL LIST
PRICES TO BE AMENDED BEFORE USE     N     Y = YES      N = NO
```

Choosing Official or Market prices

The first field lets you choose between Market and Official prices.

- Market prices will either be last night's closing price or the latest quote, as supplied by our source.
- Official prices are the latest available from the relevant stock exchange, or ISMA prices for internationals.

The second field lets you specify prices or yields, prior to the calculations. If you type **Y** in this field and press **<Enter>**, you will see this input screen:



Setting prices/yields

Here, options 1 and 2 allow you to set prices from which yields are calculated. Options 3 and 4 let you set yield data from which the prices will be calculated. These will then be used for the rest of the calculation. All the options are described below.

Specifying prices

To supply your own prices for any issue:

Select option 1. The current price is displayed for every bond (see the screen below). Overtype the prices as required.

To supply your own prices only for irregularly-priced issues:

Select option 2. The current price is displayed for every irregularly priced bond in the list - that is, priced less than daily (see below). Overtype the prices as required.

```
ENTER THOSE PRICES YOU WISH TO CHANGE
CODE   NAME                                PRICE HELD  YOUR PRICE
996585 NEDERLAND-LONG 1986 12 3/4% 92-96   111.450     _111.450____
985660 NEDERLAND      1980 10 1/2% 91-00   113.750     _113.750____
970022 NEDERLAND      1986 10 1/4% 92-96   106.450     _106.450____
970023 NEDERLAND-LONG 87 L 10 1/4% 93-97   107.100     _107.100____
971639 NEDERLAND      1986 9 1/2%  90-93    100.120     _100.120____
590044 NEDERLAND      1990 9 1/4%  2000     115.400     _115.400____
971685 NEDERLAND  (1) 1983 9%      89-93    100.560     _100.560____
984958 NEDERLAND(1&2) 1979 9%      85-94    101.250     _101.250____
558605 NEDERLAND(1&2) 1990 9%      2000     113.650     _113.650____
558857 NEDERLAND  (3) 1990 9%      2000     113.720     _113.720____
558989 NEDERLAND  (4) 1990 9%      2000     113.870     _113.870____
590156 NEDERLAND(1&2) 1991 9%      2001     114.000     _114.000____
977784 NEDERLAND      1979 8 3/4%  80-94    101.950     _101.950____
990198 NEDERLAND      1984 8 3/4%  90-94    101.350     _101.350____
558667 NEDERLAND      1990 8 3/4%  2000     112.150     _112.150____
558910 NEDERLAND  (2) 1990 8 3/4%  2000     112.150     _112.150____
590547 NEDERLAND(1&2) 1991 8 3/4%  2001     113.350     _113.350____
590704 NEDERLAND      1992 8 3/4%  2007     115.300     _115.300____
973316 NEDERLAND      1983 8 1/2%  90-94    101.000     _101.000____
973322 NEDERLAND  (1) 1984 8 1/2%  90-94    101.150     _101.150____
CONT  NEXT ACTION : CONT = CONTINUE,  STOP = CHANGES COMPLETE
```

Price amendment screen

When you have amended the prices on this screen, press **<Enter>** to continue, or type **STOP** in the **NEXT ACTION** field at the foot of the screen to show that no more changes are required.

The program will then continue with calculations.

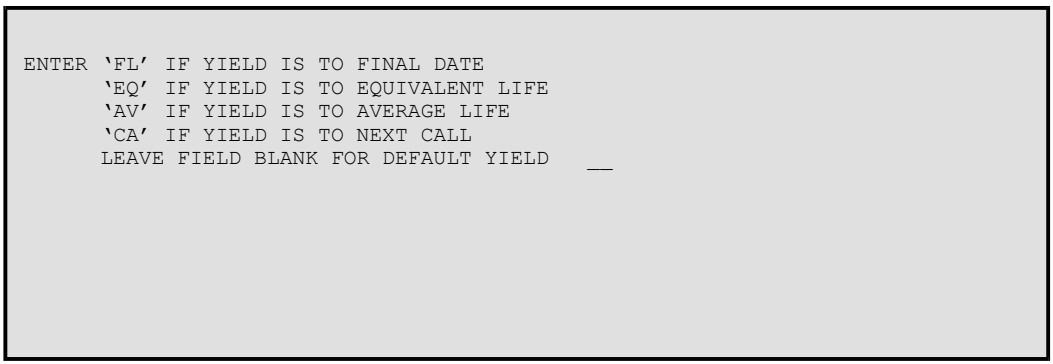
Specifying yields

To set a single yield from which all prices are calculated:

Select option 3, (on the screen shown on page 88) then type the redemption yield you wish to use in the input field

FOR A REPLY OF 3, ENTER YIELD REQUIRED _____

The yield you supply will be used to calculate prices for every bond. Finally, supply the type of yield required in response to the field:



Specifying type of yield

Note that if yield to early call is selected, bonds without early call data will not have prices calculated and Datastream-stored prices will be used. The default yield depends on the type of bond; see the *Datastream Definitions Manual* for details of redemption yields.

To set a life/yield curve from which prices are calculated:

Select option 4 and press **<Enter>**. A screen appears prompting to enter the lives required.

```
ENTER LIFE IN YEARS-MONTHS-DAYS IN ASCENDING ORDER FOLLOWED BY REDEMPTION YIELD
CORRESPONDING TO LIFE. THE MAXIMUM IS 50 ENTRIES.

  YEARS MTHS DAYS  YIELD
   0__   1_   0_    10____
   1__   0_   0_    10.5__
   5__   0_   0_    11____
   10_   0_   0_    11.5__
   15_   0_   0_    11.0__
   25_   0_   0_    10.5__
   ___   __   __    ______
   ___   __   __    ______
   ___   __   __    ______
   ___   __   __    ______
   ___   __   __    ______
   ___   __   __    ______
   ___   __   __    ______
   ___   __   __    ______
   ___   __   __    ______
   ___   __   __    ______
   ___   __   __    ______
   ___   __   __    ______
```

Specifying points on life vs. yield curve

Use this screen to supply points on a life vs. yield curve that meets your requirements according to the following rules:

- Entries must be order of ascending life.
- Any empty field defaults to zero.
- Yields must be entered.
- Prices are calculated for each bond you have specified on the initial program input screen, according to its remaining life.

When you have finished typing on this screen, press **<Enter>**.

If all fields in this screen are filled in, the **NEXT ACTION** field is displayed. Press **<Enter>** to continue, or type **STOP** to terminate the life and yield input.

After entries are completed, prices are calculated by obtaining the appropriate yield for the life of the bond. (Full details of yield calculations are given in the *Datastream Definitions Manual*).

Note that any bonds with a life longer than the last life entered will not have a price calculated. For example, if you set up a price/yield table as shown below:

lives	yield
1 yr 0 mth 0 days	8
2 yr 0 mth 0 days	9
3 yr 0 mth 0 days	10

The effect on various bonds is as follows:

- If life of bond is 4, no price is calculated and the Datastream-stored price is used
- If life of bond is 0.5 years, the life and yield limits used in the yield calculations are life range 0 to 1 and yield range of 0 to 8 to give a yield of 4 from which the price would be calculated
- If life of bond is 2.5 years, the life and yield limits used in the yieldcalculations are life range 2 to 3 and yield range of 9 to 10 which would calculate a price bond on a yield of 9.5

Settlement Dates

Since different settlement dates apply to different bonds, a default of today is used on the input screens of 145 programs. This can be changed by entering any other date in the format DD/MM/YY. Full details of the default settlement dates are given in the *Datastream Definitions Manual*.

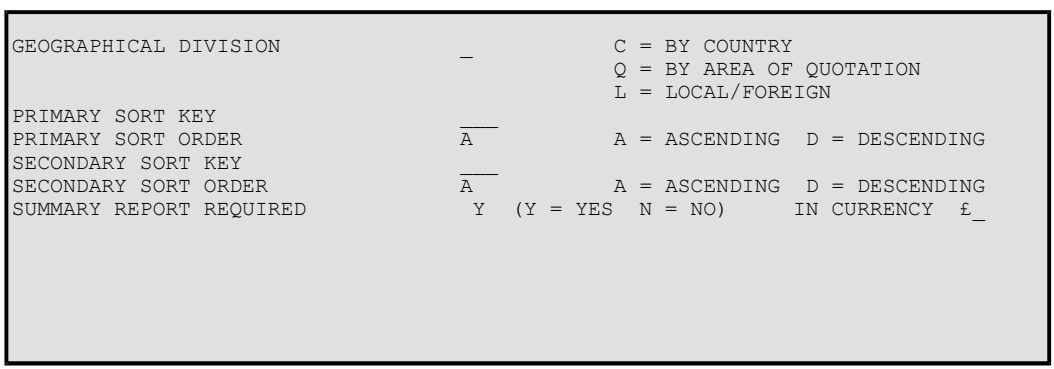
Sorting output

The default display produced by 145 series programs shows the bonds in the order typed on the input screen. The bonds making up any list are displayed in alphabetical order within a list.

Sorting allows you to change the sequence of display. This is particularly useful if the output covers many output screens. As not all the data may be of interest to you.

For example, you can group bonds by country of guarantor, by coupon, by life, and so on. Note that this feature is not applicable to programs 145K and 145Y.

The SORT fields appear on the initial input screen, apart for the Search programs 145S and 145X where it is on a later screen:



SORT fields on 145 series programs

Sorting geographically

The first of these fields, **GEOGRAPHICAL DIVISION**, can be used to sort the issues by country of guarantor, by local or foreign borrowers or by area of quotation.

Sorting in ascending or descending order

Bonds may be sorted in ascending or descending order of any item, using the primary and secondary sort key fields, eg. ascending yield, or descending duration.

- Use the sort key field(s) to specify the data item number
- Use the sort order field(s) to specify ascending or descending order

Note that the secondary sort is only significant where adjacent bonds within the primary sort have equal values. Primary and secondary sort orders are subordinate to the geographical sort order.

Sorting alphabetically or by market sector

Bonds can also be sorted alphabetically by typing **AAA** in the **SORT KEY** field, or by market sector by typing **MMM** in the **SORT KEY** field. Note that when you use these codes, all list constituents are sorted together (rather than one list followed by another).

Summary reports

Use the **SUMMARY** fields to produce a summary of the output, in a specified currency. The default currency is that of your own country.

The currency used for the summary statistics applies only to the summary. Individual bond data is unaffected. Details are still displayed in the currency of the stock.

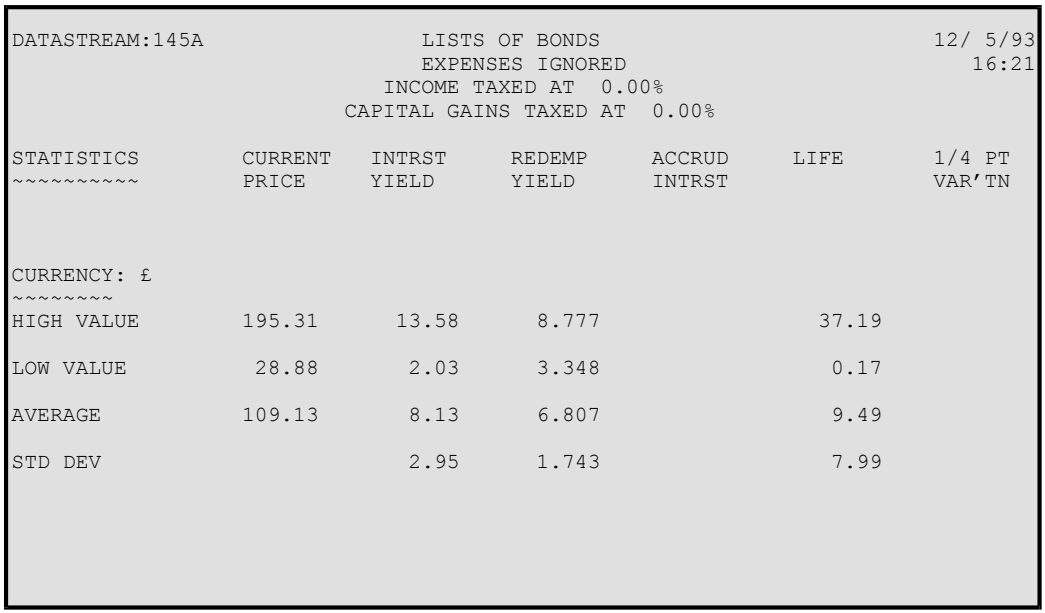
See interactive help for a list of valid currency codes.

You can choose to suppress the report by typing **N** in this field.

Summary reports are available in programs:

- 145A, 145B, 145S and 145X

The following screen shows an example of a summary report:



```
DATASTREAM:145A                  LISTS OF BONDS                          12/ 5/93
                                 EXPENSES IGNORED                           16:21
                              INCOME TAXED AT  0.00%
                           CAPITAL GAINS TAXED AT  0.00%

STATISTICS          CURRENT    INTRST     REDEMP     ACCRUD     LIFE       1/4 PT
~~~~~~~~~~          PRICE      YIELD      YIELD      INTRST                VAR'TN



CURRENCY: £
~~~~~~~~
HIGH VALUE          195.31       13.58      8.777                37.19

LOW VALUE            28.88        2.03      3.348                 0.17

AVERAGE             109.13        8.13      6.807                 9.49

STD DEV                           2.95      1.743                 7.99
```

Early redemption

Use the **EARLY REDEMPTION** field to specify the coupon rate above which any bond will be assumed to be called on its next call date.

For example, if you type 7.5, any bond with a coupon greater than 7.5% is assumed called at its next call date. The redemption yield and life is calculated to next call date for those stocks.

Using programs for bond lists and groups of bonds

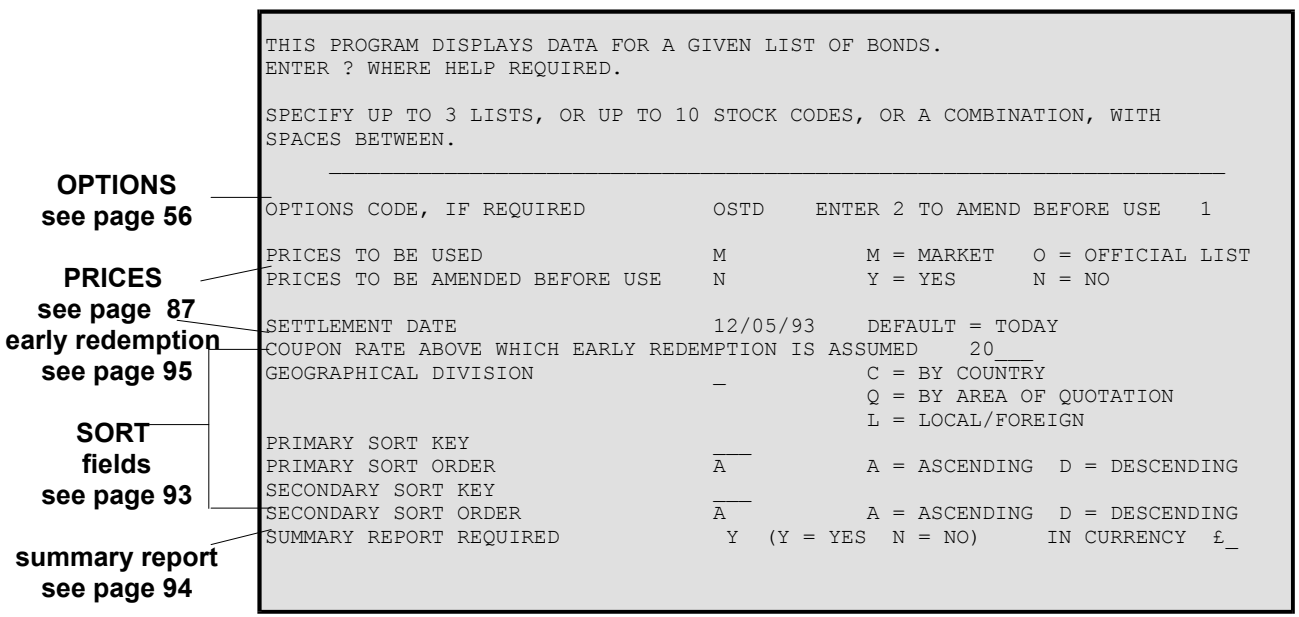
Displaying key items for a group of bonds - 145A

This program displays detailed price and yield data for a given list of bonds (or individual bond). A summary of the results is also given.

Using program 145A

Note: *This program has interactive help. Type **?** in the input field if you need instructions.*

Type **145A** at the Datastream prompt and press **<Enter>**. The following screen appears:



You must supply the codes/mnemonics for the bonds/bond lists.

Press <**Enter**> when the screen is complete. The program output is displayed.

Note: *If you chose to amend the prices/yields used in the calculations, the price/yield amendment screen(s) will be displayed before the output. See page 87 for a description of these fields.. Complete these as required, then press* ***<Enter>*** *to see the output.*

For definitions of any of the data items, see the *Datastream Definitions Manual*.

Sample output of program 145A

The output from program 145A consists of basic price and yield data; bonds are listed in the order you specified. The printout below shows a list sorted by increasing order of coupon, with the list subdivided by country.

```
DATASTREAM:145A                LISTS OF BONDS                          12/ 5/93
                               EXPENSES IGNORED                           15:52
                            INCOME TAXED AT  0.00%
                         CAPITAL GAINS TAXED AT  0.00%

  STOCK NAME                          CURRENT   INTRST   REDEMP  ACCRUD LIFE  1/4 PT
                                      PRICE     YIELD    YIELD   INTRST       VAR'TN


ICELAND        1993 8 3/4%  2003 #   97.44X   8.98     9.152         10.00  0.040
    AUSTRALIA
AUSTRALIA      93 B 7%      2000     98.97    7.07     7.190  0.51   6.93  0.047
NSWTC          1993 7%      2000     97.95    7.15     7.389  1.95   6.72  0.048
SHELL AUS      1993 7 1/4%  1998 A$ 100.88    7.19     7.036          5.00  0.061
STE.BK.STH.AUS.1993 7 1/4%  2000 A$  98.00    7.40     7.629          7.00  0.048
NSWTC          92 S 7 1/2%  1998    102.64    7.31     6.832  2.05    4.73  0.062
R&I BANK W/A   1993 7 3/4%  2003 A$  98.00    7.91     8.049         10.00  0.038
    NEW ZEALAND
NEW ZEALAND    1993 7 3/8%  1998 #   98.00    7.53     7.852          5.50  0.059
    THAILAND
LAND & HOUSES  1993 5%      2003 U$ 104.00    4.81     4.498  0.18   9.96  0.031
    BELGIUM
```

Note that issues are sorted by country and by coupon ((item 43)

Displaying yields for a list of bonds - 145B

This program displays the life and yields to final date, equivalent life and average life for a list of bonds. A summary of the results is also given.

Using program 145B

Note: *This program has interactive help. Type **?** in the input field if you need instructions.*

Type **145B** at the Datastream prompt and press **<Enter>**. The following screen appears.

OPTIONS
see page 56

PRICES
see page 87

SORTING
see page 93

summary report data
see page 94

```
THIS PROGRAM DISPLAYS DATA FOR A GIVEN LIST OF BONDS.
ENTER ? WHERE HELP REQUIRED.

SPECIFY UP TO 3 LISTS, OR UP TO 10 STOCK CODES, OR A COMBINATION, WITH
SPACES BETWEEN.
     ____________________________________________________________________

OPTIONS CODE, IF REQUIRED          OSTD    ENTER 2 TO AMEND BEFORE USE   1

PRICES TO BE USED                  M           M = MARKET   O = OFFICIAL LIST
PRICES TO BE AMENDED BEFORE USE    N           Y = YES      N = NO

SETTLEMENT DATE                    12/05/93    DEFAULT = TODAY
COUPON RATE ABOVE WHICH EARLY REDEMPTION IS ASSUMED    20___
GEOGRAPHICAL DIVISION              _           C = BY COUNTRY
                                               Q = BY AREA OF QUOTATION
                                               L = LOCAL/FOREIGN
PRIMARY SORT KEY                   ___
PRIMARY SORT ORDER                 A           A = ASCENDING  D = DESCENDING
SECONDARY SORT KEY                 ___
SECONDARY SORT ORDER               A           A = ASCENDING  D = DESCENDING
SUMMARY REPORT REQUIRED             Y  (Y = YES  N = NO)     IN CURRENCY  £_
```

145B initial input screen

You must supply the codes for the stocks or lists for the reports.

Press <**Enter**> when the screen is complete. The program output is displayed.

Note: *If you chose to amend the prices/yields used in the calculations, the price/yield amendment screen(s) described on page 87 will be displayed before the output. Complete these as required, then press* ***<Enter>*** *to see the output.*

For definitions of any of the data items, see the *Datastream Definitions Manual*.

Sample output of program 145B

The sample output shows the yields for UK Gilts, sorted by decreasing yield to final date :

```
DATASTREAM:145B            LISTS OF YIELDS ON BONDS                    12/ 5/93
                              EXPENSES IGNORED                            16:30
                            INCOME TAXED AT  0.00%
                         CAPITAL GAINS TAXED AT  0.00%

  STOCK NAME                          CURRENT   YIELD   YIELD   YIELD   LIFE  LIFE-
                                      PRICE     TO FIN. TO EQV. TO AVG.       FINAL
                                                 DATE    LIFE    LIFE         DATE


TREASURY 14     22. 5.98/01       125 21/32X   9.381   7.743   7.743  5.03  8.03
TREASURY 13 1/2 26. 3.04/08       134 5/16     9.213   8.580   8.580 10.87 14.87
TREASURY 11 3/4 22. 1.03/07       120 31/32    9.045   8.525   8.525  9.70 13.70
EXCHEQUER 12    12.12.13/17       130 21/32X   8.907   8.761   8.761 20.59 24.59
TREASURY 12 1/2 21.11.03/05       126 27/32X   8.897   8.572   8.572 10.53 12.53
TREASURY 11 1/2 19. 3.01/04       118 15/32    8.817   8.253   8.253  7.85 10.85
TREASURY 2 1/2        1 A O        28 7/8      8.657   8.657   8.657
WAR LOAN 3 1/2        1 J D        40 9/16 X   8.629   8.629   8.629
CONSOLS 4             1 F A        46 3/8      8.623   8.623   8.623
TREASURY 8 3/4   25. 8.2017       101 21/32    8.588   8.588   8.588 24.29 24.29
TREASURY 3            5 A O        34 15/16    8.585   8.585   8.585
CONVERSION C 9   12.07.2011        104          8.563   8.563   8.563 18.17 18.17
TREASURY 9        6. 8.2012        104 1/4      8.547   8.547   8.547 19.24 19.24
```

Sample output of program 145B

Price/yields at two dates - 145C

This program enables you to monitor the effect of time on the profitability of a whole list of bonds by displaying their prices and yields at two dates which you can specify. Percent change and price are also displayed.

Note: *Prices are historical to enable comparison and may differ from those shown on other 144 and 145 reports.*

Using program 145C

Note: *This program has interactive help. Type **?** in the input field if you need instructions.*

Type **145C** at the Datastream prompt and press **<Enter>**. The following screen appears:

OPTIONS
see page

PRICES
see prices87

SORTING
see page 93

```
THIS PROGRAM DISPLAYS PRICES AND YIELDS AT TWO SPECIFIED DATES FOR A GIVEN LIST
OF BONDS. ENTER ? WHERE HELP REQUIRED.

SPECIFY UP TO 3 LISTS, OR UP TO 10 STOCK CODES, OR A COMBINATION, WITH
SPACES BETWEEN.
    ____________________________________________________________________

OPTIONS CODE, IF REQUIRED          OSTD    ENTER 2 TO AMEND BEFORE USE   1

PRICES TO BE USED                  M           M = MARKET   O = OFFICIAL LIST

FIRST DATE                         _______
SECOND DATE                        12/05/93

GEOGRAPHICAL DIVISION              _           C = BY COUNTRY
                                               Q = BY AREA OF QUOTATION
                                               L = LOCAL/FOREIGN
PRIMARY SORT KEY                   ___
PRIMARY SORT ORDER                 A           A = ASCENDING  D = DESCENDING
SECONDARY SORT KEY                 ___
SECONDARY SORT ORDER               A           A = ASCENDING  D = DESCENDING
```

145C initial input screen

Use the **DATE** fields to specify the two dates at which you want the data displayed.

When the screen is complete press <**Enter**>. The bonds you specified will be displayed, as in the sample output shown below.

For definitions of any of the data items, see the *Datastream Definitions Manual*.

Sample output of program 145C

The sample output for 145C shows the price change over a one-year period for the German Anleihen bond list BUNDAN:

```
DATASTREAM:145C          LIST OF PRICE CHANGES ON BONDS                 12/ 5/92
                               EXPENSES IGNORED                            16:36
                            INCOME TAXED AT  0.00%
                          CAPITAL GAINS TAXED AT  0.00%

  STOCK NAME                          PRICE      PRICE     %AGE   YIELD    YIELD
                                        AT         AT      CHNG    AT       AT
                                    12/ 5/92   12/ 5/93    PRCE  12/ 5/92 12/ 5/93


BUND DT.EINHEIT  1990 8 3/4 2000     103.07     111.60     8.3   8.211    6.659
BUND DT.EINHEIT  1991 8 1/2 2001     102.02     110.11     7.9   8.159    6.776
BUND DT.EINHEIT  1991 8 3/4 2001     103.73     111.85     7.8   8.150    6.819
BUND DT.EINHT. 1992 8%       2002     100.13     107.27     7.1   7.970    6.853
BUNDESREPUB.DT 83 1 8 1/4%  1993      99.22     100.00     0.8   9.041    7.653
BUNDESREPUB.DT 83 2 8 1/4%  1993      99.04     100.06     1.0   9.061    7.490
BUNDESREPUB.DT 83 3 8 1/4%  1993      98.96     100.28     1.3   9.014    7.143
BUNDESREPUB.DT 83 4 8 1/4%  1993      98.88     100.43     1.6   9.030    6.998
BUNDESREPUB.DT 83 5 8 1/4%  1993      98.83     100.55     1.7   9.028    6.960
BUNDESREPUB.DT 1983 8%       1993      98.84     100.00     1.2   9.080    7.483
BUNDESREPUB.DT 1984 7 1/2%  1994      96.95     101.33     4.5   8.909    6.459
BUNDESREPUB.DT 1984 7%       1994      95.59     100.81     5.5   8.940    6.418
```

Sample output of 145C

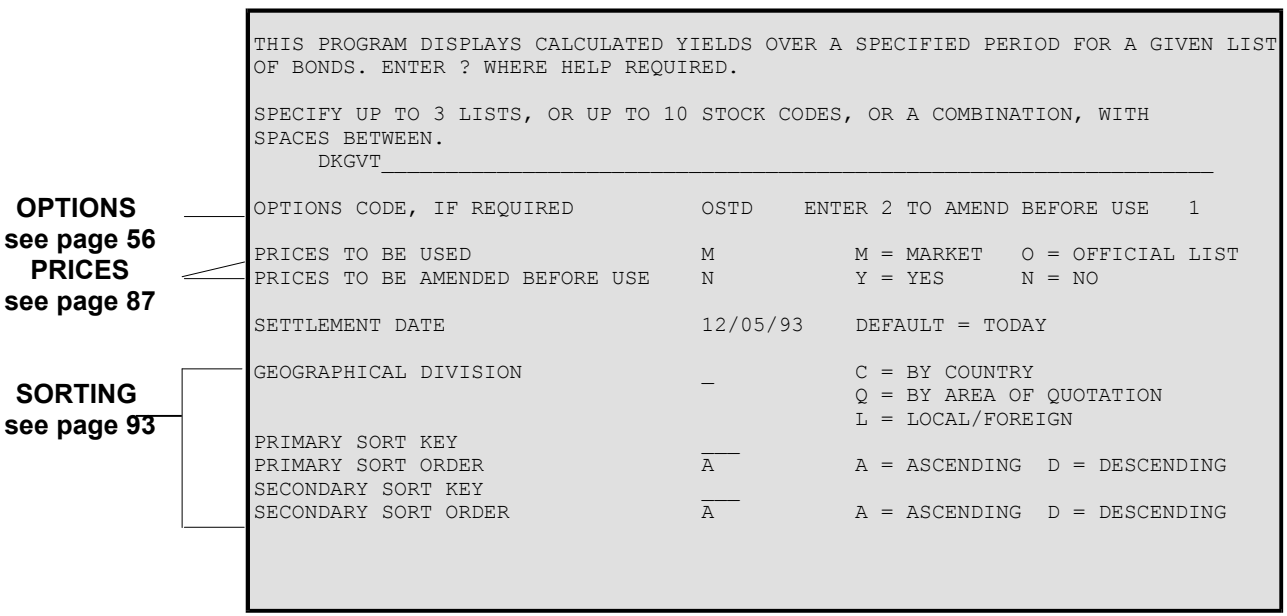
Yields over a specified period - 145D

This program enables you to display the yield value of a bond portfolio, bond list or individual bonds held for a specific length of time. You can change the prices of the bonds in the list and determine the effect of tax and settlement on the results. You can also remove and add bonds from a private list to determine the effect of swaps, acquisitions and divestments.

Using program 145D

Note: *This program has interactive help. Type ? in the input field if you need instructions.*

Type **145D** at the Datastream prompt and press **<Enter>**. The following screen appears:



You must specify the codes for the stocks or lists you require.

When the screen is complete press <**Enter**>.

You must now define the time period over which you want to display the yields.

```
SELECT THE BASIS OF THE SECOND DATE :
       1  A YEAR AND A DAY AFTER THE FIRST DATE.
       2  AT LEAST A YEAR AND A DAY AFTER THE FIRST DATE
          TO GIVE A MINIMUM NUMBER OF COUPONS.
       3  A YEAR AFTER THE FIRST DATE.
       4  YOUR OWN DATE.
ENTER 1,2,3 OR 4                    _
           ENTER YOUR SECOND DATE   ________

SELECT THE SOURCE OF PRICES AT THE SECOND DATE:
       1  YOUR OWN PRICES FOR ALL STOCKS.
       2  BASED ON YOUR REDEMPTION YIELD, WHICH IS APPLIED TO ALL STOCKS.
       3  BASED ON THE ASSUMPTION THAT THE FIRST YIELD DOES NOT CHANGE.
ENTER 1,2, OR 3                     3

REDEMPTION YIELD                    _____   FORMAT: XX.XX

YIELD BASIS                         __      FL = FINAL DATE
                                            EQ = EQUIVALENT LIFE
                                            AV = AVERAGE LIFE
                                            CA = NEXT CALL
```

145D initial input screen

When you have completed the screen, press **<Enter>**. The bonds you specified will be displayed, as in the sample output shown overleaf.

Note: *If you chose to supply your own prices and yields, the price/yield amendment screen(s) described on page 87 will be displayed before the output. Complete these as required, then press* ***<Enter>*** *to see the output.*

For definitions of any of the data items, see the *Datastream Definitions Manual*.

Sample output of program 145D

The sample output shows the yields obtained from the contents of the list of Danish government issues, over a year.

```
DATASTREAM:145D  LIST OF CALCULATED YIELDS ON BONDS BETWEEN TWO DATES   12/ 5/93
                              EXPENSES IGNORED                            16:41
                          INCOME TAXED AT 0.00%
                       CAPITAL GAINS TAXED AT 0.00%

  STOCK NAME                            DATES      PRICE   ACCRUD REDEMP   YIELD
                                                           INTRST YIELD    OVER
                                                                          PERIOD


DANSKE STAT    INK  V/R     1999    12/ 5/93     98.00X -0.22   10.486
                                    12/ 5/94     98.22                  10.491
DANSKE STAT    INK  V/R     1995    12/ 5/93     98.50   0.73   11.077
                                    12/ 5/94     99.35                  11.077
DANSKE STAT    INK  V/R     1996    12/ 5/93     98.30   0.73   10.812
                                    12/ 5/94     98.87                  10.812
DANSKE STAT    INK  V/R     1997    12/ 5/93     97.90   0.73   10.769
                                    12/ 5/94     98.39                  10.769
DANSKE STAT    INK  V/R     1998    12/ 5/93     98.00   0.73   10.610
                                    12/ 5/94     98.35                  10.611
DANSKE STAT    INK  V/R     1994    12/ 5/93     98.75X -0.22   10.989
                                    12/ 5/94     99.55                  10.995
```

Sample output of 145D

Reinvestment yields - 145E

This program determines the results of reinvesting the retained income from a bond in the same list of issues. 145E allows you to specify one net investment rate, from which it calculates the reinvestment yield, which is displayed along with the redemption yield for comparision purposes.

The rates you enter are annual percentage rates, which will be used to compute reinvestment yields at whatever tax rates you have supplied. The rate is then used to calculate a reinvestment yield that reflects the combination of the original yield and the obtainable reinvestment rate.

Using program 145E

Note: *This program has interactive help. Type **?** in the input field if you need instructions.*

Type **145E** at the Datastream prompt and press **<Enter>**. The following screen appears:

OPTIONS
see page 56
PRICES
see page 87
REINVESTMENT RATE

SORTING
see page 93

```
THIS PROGRAM DISPLAYS REINVESTMENT YIELDS FOR A GIVEN LIST OF BONDS USING A
SPECIFIED RATE. ENTER ? WHERE HELP REQUIRED.

SPECIFY UP TO 3 LISTS, OR UP TO 10 STOCK CODES, OR A COMBINATION, WITH
SPACES BETWEEN.
    ____________________________________________________________________

OPTIONS CODE, IF REQUIRED          OSTD    ENTER 2 TO AMEND BEFORE USE   1

PRICES TO BE USED                  M           M = MARKET   O = OFFICIAL LIST
PRICES TO BE AMENDED BEFORE USE    N           Y = YES      N = NO

SETTLEMENT DATE                    12/05/93    DEFAULT = TODAY
NET REINVESTMENT RATE              _____       FORMAT XX.XX

GEOGRAPHICAL DIVISION              _           C = BY COUNTRY
                                               Q = BY AREA OF QUOTATION
                                               L = LOCAL/FOREIGN
PRIMARY SORT KEY                   ___
PRIMARY SORT ORDER                 A           A = ASCENDING  D = DESCENDING
SECONDARY SORT KEY                 ___
SECONDARY SORT ORDER               A           A = ASCENDING  D = DESCENDING
```

You must enter the codes for the stocks or lists required.

The **REINVESTMENT RATE** field lets you specify the rate at which any income from the bonds will be reinvested. Type a percentage value in the format XX.XX. Do not type a "%" character.

When the screen is complete press <**Enter**>. The bonds you specified will be displayed, as in the sample output shown below.

Note: *If you chose to specify your own prices and yields, the price/yield amendment screen(s) described on page 87 will be displayed before the output.*

Complete these as required, then press ***<Enter>*** *to see the output.*

For definitions of any of the data items, see the *Datastream Definitions Manual*.

Sample output of program 145E

This example shows the reinvestment yields on the list of US government issues, at a reinvestment rate of 10.56%.

```
DATASTREAM:145E      LIST OF REINVESTMENT YIELDS ON BONDS              12/ 5/93
                              EXPENSES IGNORED                          16:54
                          INCOME TAXED AT 0.00%
                       CAPITAL GAINS TAXED AT 0.00%
                       NET REINVESTMENT RATE 10.56%

  STOCK NAME                                CURRENT       REIN-         REDEMP
                                            PRICE         VEST.         YIELD
                                                          YIELD

US TRSY NOTES  1991 6 3/8%  1993            101.03         2.874         2.866
US TRSY NOTES  1988 7 5/8%  1993            100.06         0.081         0.084
US TRSY NOTES  1990 8 5/8%  1993            100.06         1.050         1.054
US TRSY NOTES  1983 10 1/8% 1993            100.09        -1.137        -1.134
US TRSY NOTES  1991 6 3/4%  1993            100.21         2.499         2.486
US TRSY NOTES  1989 8 1/8%  1993            100.75         2.480         2.469
US TRSY NOTES  1991 7%      1993            100.59         2.529         2.517
US TRSY NOTES  1986 7 1/4%  1993            100.78         2.780         2.768
US TRSY NOTES  1991 6 7/8%  1993            100.87         2.871         2.860
US TRSY NOTES  1990 8%      1993            101.31         2.940         2.930
US TRSY NOTES  1988 8 3/4%  1993            101.53         2.847         2.837
US TRSY NOTES  1991 6%      1993            101.34         3.054         3.053
```

Sample output of 145E

Displaying data for convertibles - 145F

This program caters specifically for convertibles and also displays data about their underlying equity.

Note that where the lists you specify contain a range of different types of bonds, only basic data (name, price, yield and amount in issue) is displayed for the non-convertibles.

Using program 145F

Note: *This program has interactive help. Type ? in the input field if you need instructions.*

Type **145F** at the Datastream prompt and press **<Enter>**. The following screen appears:

OPTIONS
see page 56
PRICES
see page 87

SORTING
see page 93

```
THIS PROGRAM DISPLAYS CONVERTIBLE DATA FOR A GIVEN LIST OF CONVERTIBLE BONDS
ENTER ? WHERE HELP REQUIRED.

SPECIFY UP TO 3 LISTS, OR UP TO 10 STOCK CODES, OR A COMBINATION, WITH
SPACES BETWEEN.
     ____________________________________________________________________

OPTIONS CODE, IF REQUIRED          OSTD    ENTER 2 TO AMEND BEFORE USE   1

PRICES TO BE USED                  M           M = MARKET   O = OFFICIAL LIST
PRICES TO BE AMENDED BEFORE USE    N           Y = YES      N = NO

SETTLEMENT DATE                    12/05/93    DEFAULT = TODAY

GEOGRAPHICAL DIVISION              _           C = BY COUNTRY
                                               Q = BY AREA OF QUOTATION
                                               L = LOCAL/FOREIGN
PRIMARY SORT KEY                   ___
PRIMARY SORT ORDER                 A           A = ASCENDING  D = DESCENDING
SECONDARY SORT KEY                 ___
SECONDARY SORT ORDER               A           A = ASCENDING  D = DESCENDING
```

145F initial input screen

When the screen is complete press <**Enter**>. The bonds you specified will be displayed, as in the sample output shown below.

Note: *If you chose to supply your own prices and yields, the price/yield amendment screen(s) described on page 87 will be displayed before the output. Complete these as required, then press* ***<Enter>*** *to see the output.*

For definitions of any of the data items, see the *Datastream Definitions Manual*.

Sample output of program 145F

The sample ouput for 145D shows a list of Deutschemark-issued international convertibles, together with details of the underlying equities for each.

1st line is bond data
2nd line is underlying equity data

```
DATASTREAM:145F            LIST OF CONVERTIBLE BONDS                    12/ 5/93
                                EXPENSES IGNORED                           17:01
                              INCOME TAXED AT  0.00%
                          CAPITAL GAINS TAXED AT  0.00%

   BOND NAME               CV.PRICE    INT.YLD    RED.YLD    P/D%CURR   AMT.ISS
 EQUITY NAME               EQ.PRICE    DIV.YLD      PER       12MTH     MKT.VAL
                                                              RANGE       (M)


ALLGEM DT PHIL 1983 CV 6   DM  100.0*   6.00       5.871                    12.00
PHILIPS GSH.82             DM  99.00    7.95                             DM    4.0
ALLGEM DT PHIL 1983 CV 6   DM  100.0*   6.00      13.596                     4.00
PHILIPS GSH.82             DM  99.00    7.95                             DM    4.0
ALLGEM DT PHIL 1984 CV 6   DM  100.0*   6.00       5.973                    10.00
PHILIPS GSH.82             DM  99.00    7.95                             DM    4.0
ALLGEM DT PHIL 1984 CV 6   DM  100.0*   6.00       8.937                     6.00
PHILIPS GSH.82             DM  99.00    7.95                             DM    4.0
ALLGEM DT PHIL 1988 CV 6   DM  100.0*   6.00       5.983                    10.00
PHILIPS GSH.82             DM  99.00    7.95                             DM    4.0
ALLGEM DT PHIL 1985 CV 6   DM  100.0*   6.00       7.761                    10.00
PHILIPS GSH.82             DM  99.00    7.95                             DM    4.0
```

Sample output of 145F

Displaying data for equity warrants - 145G

Program 145G displays data specifically for equity warrants and also displays details of the underlying equity.

Using program 145G

Note: *This program has interactive help. Type **?** in the input field if you need instructions.*

Type **145G** at the Datastream prompt and press **<Enter>**.

This screen (similar to 145F) allows you to specify the warrant lists and/or warrants required.

See page 56 for information on the **OPTIONS** fields.

See page 86 for information on the **PRICES** fields.

See page 93 for information on the **SORT** fields.

When the screen is complete press <**Enter**>. The bonds you specified will be displayed, as in the sample output shown below.

Note: *If you chose to supply your own prices, the price amendment screen(s) described on page 87 will be displayed before the output. Complete these as required, then press **<Enter>** to see the output.*

For definitions of any of the data items, see the *Datastream Definitions Manual*.

Sample output of program 145G

The sample output for 145G shows a list of Belgian franc-issued equity warrants (within the list BGWTS), together with details of the related equities:

```
DATASTREAM:145G            LIST OF EQUITY WARRANTS                    12/ 5/93
                              EXPENSES IGNORED                           17:04

WARRANT NAME               CURRENT    AMT.ISS.  EX. PRD   EX.PRICE  P/D%CURR
 EQUITY NAME               PRICES     DIV.YLD.  NO. OF    FIXED      12MTH
                                                STOCKS    EX.RATE    RANGE


ABELOR 1992 WTS 94        BF  150.00       0.10 10/93-94    2100.00     50.00
ABELOR                    BF1500.00      0.00        1.00           81.3/20.3
AG 1990 WTS 20.12.2000    BF  650.00       0.00  1/92-00    2500.00     29.36
AG                        BF2435.00      1.89        1.00           84.9/23.8
AUXIMINES 1991 WTS 97     BF 3420.00       0.02 10/93-97    17000.0     55.29
AUXIMINES                 BF13150.0      1.64        1.00           87.8/48.0
BKTR-U$/BF CUR.WTS.94     BF   23.5*      10.00

BKTR-BLGM 9.25 BDWTS.93   BF   14.80       0.01 10/92-93     104.53
BELGIUM OLO 90 9 1/4 98   BF 109.10              1000000
BARCO 1990 WTS 96         BF  139.00       1.52  1/90-94    2500.00     75.93
BARCO                     BF1500.00      1.33        1.00           161/62.8
BQP-BEL 1100 IDX.WTS.94   BF  145.10       1.00
```

Sample output of 145G

Non-equity warrants in the list display only the following information:

- Name
- Price
- Amount in issue

Bond warrant data - 145H

Program 145H displays data for bond warrants and also displays details of the underlying bond.

Using program 145H

Note: *This program has interactive help. Type **?** in the input field if you need instructions.*

Type **145H** at the Datastream prompt and press **<Enter>**.

This screen (similar to 145F) enables you to specify the warrant lists and/or warrants required.

See page 56 for information on the **OPTIONS** fields.

See page 86 for information on the **PRICES** fields.

See page 93 for information on the **SORT** fields.

When the screen is complete press <**Enter**>. The warrants you specified will be displayed, as in the sample output shown below.

Note: *If you chose to supply your own prices and yields, the price/yield amendment screen(s) described on page 87 will be displayed before the output. Complete these as required, then press **<Enter>** to see the output.*

For definitions of any of the data items, see the *Datastream Definitions Manual*.

Sample output of program 145H

The sample output shows a list of International bond warrants (within the list BDWTS), showing the warrants together with the underlying bond.

```
DATASTREAM:145H              LIST OF BOND WARRANTS                      12/ 5/93
                               EXPENSES IGNORED                           17:07

WARRANT NAME                 CURRENT    AMT.ISS.  EX. PRD   EX.PRICE  EX.YIELD
   BOND NAME                 PRICES     RED.YLD.  NO. OF    FIXED      12MTH
                                                  STOCKS    EX.RATE    RANGE


-AMRO-NED.7.5 BDWTS.94     FL  740.00       0.01  1/93-94     100.00      6.90
NEDERLAND 1993 7 1/2 23    FL 104.85     7.099     10000.0           7.1/ 6.8
ABN-PUT-NED.7.5 BDWTS.94   FL  105.00       0.01  1/93-94     100.00      7.41
NEDERLAND 1993 7 1/2 23    FL 104.85     7.099     10000.0           7.4/ 7.2
-AMRO-NED.8.25 BDWTS.94    FL  750.00       0.02 11/92-94     102.50      6.74
NEDERLAND (2) 92 8 1/4     FL 110.85     6.620     10000.0           7.4/ 6.5
-PUT-NED.8.25 BDWTS.94     FL   40.00       0.02 11/92-94     102.50      7.79
NEDERLAND (2) 92 8 1/4     FL 110.85     6.620     10000.0           7.8/ 7.8
AEGON 1986 WTS 15.7.1993   FL   14.55       0.20  7/86-93     100.00     -1.69
AEGON 1987 6 1/2 93        FL 100.00     6.328     1000.00       1.00  5.2/-1.7
ASFINAG 1992 BDWTS.96      DM    5.00       3.00  4/94-96     101.25      7.03
ASFINAG 1992 8 02          DM 101.25*    7.798      100.00           7.3/ 6.9
ASIAN DEV.BK 8.2BDWTS 96   AS  365.00       0.10 10/96-96     100.25      7.60
ASIAN DEV BK 91 8 1/4 01   AS 100.25*    8.194     10000.0       1.00  7.9/ 7.5
```

Sample output of 145H

Displaying the weighted profile of a list - 145K

Program 145K lets you analyse a list of bonds, or a portfolio containing bonds, by splitting the list into a set of subdivisions. You can produce a 'profile' of the list and thus analyse specific groups (for example, those with a duration of greater than 20 years). For each subdivision of the list, the program calculates weighted or unweighted averages for up to five data items.

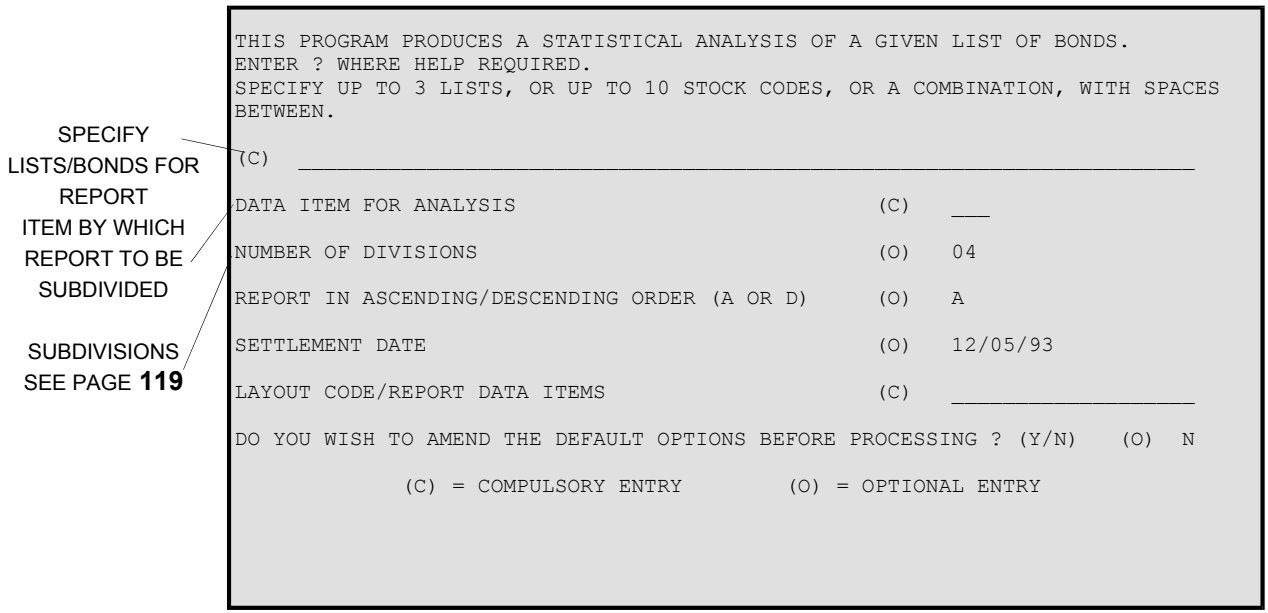
The program gives you full flexibility over the way the output is presented; in particular, you can control:

- The data item used to subdivide the list (for example, subdivided by coupon, by credit rating, by country of guarantee, and so on)
- The data items for which averages are calculated (for example, you can display average spreads, average coupons, average volatility). These data items are displayed for each of the subdivisions on the final output, and are referred to on 145K input screens as 'Report data items'
- The data item by which the averages are weighted (the default is weighting by market value - this ensures that the profile is not distorted by small issues). You can also produce unweighted averages
- The currency of the final display

The data items you can use in each category are listed in Appendix B. Sample output is shown on page 123.

Using program 145K

At the Datastream prompt, type **145K** and press <**Enter**>. The following screen appears.



145K initial input screen

This initial input screen controls the contents and appearance of the final output. Three of the input fields are compulsory; you must enter:

- The list(s) you want to analyse. For example, JPGVT for the list of Japanese government bonds
- The data item by which you want the output subdivided (the data item for analysis). For example, use item number 101 to subdivide the list by S&P rating
- The data items which you want to display on the final output (the 'report data items'). For example, using item numbers 5, 24 and 12 will display yield to final date, volatility to final date and accrued interest

Interactive help contains details of what data can be used in each field.

The remaining optional fields can be used to specify:

- The number of subdivisions you require. For example, the default of 4 gives 4 equal subdivisions. See note below
- The order in which you want the subdivisions to be shown. For example, **A** for ascending order of numerical data (or alphabetical order of non-numerical data)
- The settlement date to be used in calculations
- Whether or not you want to use all the default settings for subdivision ranges, options, prices, early redemption, weighting for averages and the report currency. The defaults, and the steps in amending the values, are given overleaf

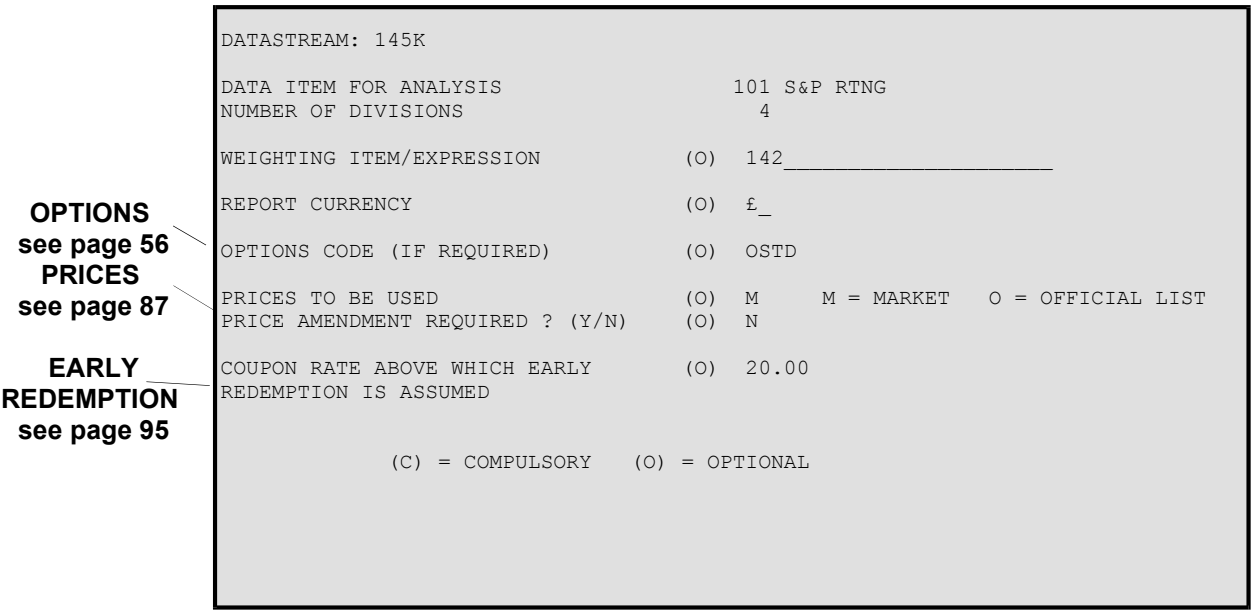
Notes: ***If your data item for analysis is non-numerical*** *(for example, country of guarantor), you must blank out the NUMBER OF DIVISIONS field. The default subdivisions in this case will be chosen accordingly. To reject these defaults and specify your own subdivisions, type Y in the* ***DO YOU WISH TO AMEND...*** *field.*

If your data item for analysis is numerical *(for example, coupon), the default subdivisions on the output are achieved by taking the lowest and highest values, and dividing this range equally by the 'number of subdivisions'. For example, if you specify 3 subdivisions when analysing with an item where the lowest value is 9 and the highest value is 12, the default subdivisions will be 9 - 10, 10 - 11, and 11 to 12. To reject these defaults and set your own ranges for the subdivisions, you should type Y in the* ***DO YOU WISH TO AMEND...*** *field.*

When you have typed the values you require, press **<Enter>**.

If you chose to accept all the default values for calculations, (that is, you do **not** type **Y** in the bottom field on the screen), the program will process the list(s) specified and display the final output. See page 123.

If you chose to amend defaults before processing, the following screen is displayed:



Amending defaults used in calculations

Amending defaults to customise the profile

The defaults that are used in calculations unless you amend them are:

- Subdivisions of equal range for numerical data items, or one for each non-numerical
- Weighting by market value (data item number 142)
- All currency-sensitive data shown in sterling
- Standard options settings (zero income tax, Capital Gains Tax, trading expenses, default frequency of yield for each issue)
- Market prices
- Early redemption assumed for callable bonds with a coupon greater than 20%

The fields contain the default settings. Amend them after as follows:

The **WEIGHTING ITEM/EXPRESSION** field controls the data item by which the averages displayed on the final output are to be weighted. Interactive help contains full details of what you can choose.

The **REPORT CURRENCY** field controls the currency-sensitive items displayed on the final output.

When all settings are as you require, press **<Enter>**. The next step is to specify the subdivision ranges you require.

Note: *If you requested no subdivisions (that is, if you blanked out the **NUMBER OF SUBDIVISIONS** field), the subdivision screen will not be displayed.*

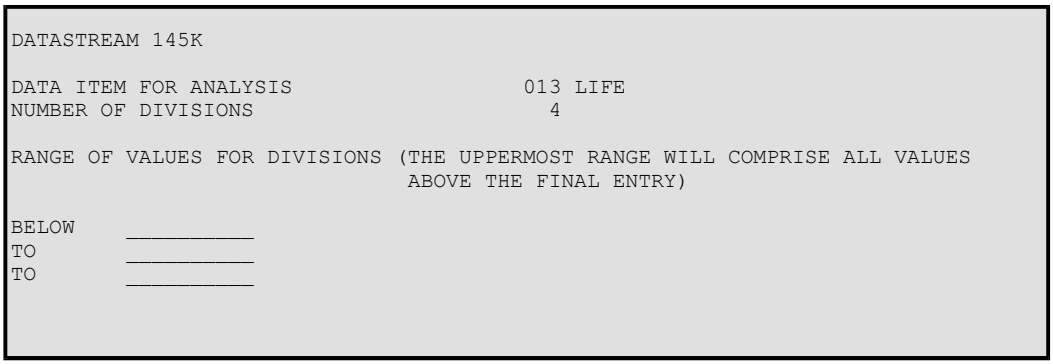
Setting subdivision ranges

If you have chosen to amend default values, a screen is displayed which enables you to set the precise subdivisions you require on the final profile.

If you have specified a numeric data item for analysis (for example, life and 4 subdivisions), refer to the next section.

For non-numeric data item for analysis (for example, the country of guarantee or the Moody's rating), refer to the next but one section.

Specifying numeric subdivisions



Specifying subdivision ranges for numeric data items

To divide your list into subdivisions, each containing equal number of stocks, leave these fields blank and press **<Enter>**

To customise the range for each subdivision, type the details in each field and press **<Enter>**

Note that this screen displays one less subdivision than the number you requested on the initial input screen. This is because an uppermost (or lowermost) range is automatically used to contain all values above (or below) your final entry. If you have accidentally requested more divisions than you need, type an **X** in the spare field and that division will be ignored.

When you have set the ranges, press **<Enter>**. The next screen is shown on page 122.

If you are producing a list profile by a non-numeric data item, the following screen appears:

```
DATASTREAM 145K

DATA ITEM FOR ANALYSIS                  101 S&P RTNG
NUMBER OF DIVISIONS                       4

CATEGORIES FOR LIST SUBDIVISION :-
(ENTER THE VALUES REQUIRED FOR EACH CATEGORY SEPARATED BY SPACES. GEOGRAPHIC
 CODE EQUATIONS MAY ALSO BE SUPPLIED FOR ANALYSIS BY COUNTRY OF GUARANTOR.
 RANGES IN THE FORM XXXX TO XXXX MAY BE ENTERED FOR ANALYSIS BY CREDIT RATING.)

DIVISION  1:  ____________________
DIVISION  2:  ____________________
DIVISION  3:  ____________________

AN ADDITIONAL, FINAL CATEGORY IS RESERVED FOR ANY REMAINING VALUES.
```

Specifying subdivision ranges for non-numeric data items

In each **DIVISION** field, type the categories you want to include in that subdivision. For example, if the item for analysis is 53 (country of guarantee), you might type:

- **US** and **CN** in DIVISION 1 to form a subdivision containing United States and Canadian bonds.
- **UK** in DIVISION 2 to group together all UK bonds
- **EUR-UK** in devision 3 to group together all European bonds apart from UK bonds
- with all other bonds in DIVISION 4

The mnemonics you can use for the non-numeric data items are given in the *Datastream Definitions Manual*.

Note that this screen displays one less subdivision than the number you requested on the initial input screen. This is because an extra range is automatically used to contain all bonds falling outside your divisions. If you have accidentally requested more divisions than you need, type an **X** in the spare field and that division will be ignored.

When you have set the subdivisions, press **<Enter>**.

Setting qualifying data for weighting and layout

The final input screen for 145K allows you to control the data used in calculations for any life or yield-related data items; the actual prompts which appear will vary depending on the items you have chosen. Use interactive help for further details on the valid input.

Press **<Enter>** when you have typed the qualifying data you require. The final output is displayed (see sample on page 123).

Rejected bonds

Immediately after the final profiled list is displayed, the screen shows a list of bonds which have been rejected as unsuitable for inclusion, together with the reason for rejection. Typically, bonds are rejected from the list analysis if any of your data items (items for analysis, for report or for weighting) are invalid for that bond. For example, if you select life (13) then all irredeemable bonds will be rejected.

Storing the profile you have created

The final screen enables you to save the criteria you have set up, so that you can produce the same profile of another list without having to retype all the data. The following prompt appears:

DO YOU WISH TO STORE THE LAYOUT DATA?

Type **Y** over the default N in order to store the layout. Note that this only stores the layout (that is, the report items for analysis), it does not store the data items for analysis, the weighting data items, etc.

A screen appears displaying a layout code. This is a unique number, automatically assigned by the program, which refers to the report layout you have set up. Use the code again in the **LAYOUT CODE/REPORT DATA ITEMS** field on the input screen if you want to repeat the layout with a different list.

Sample output of program 145K

The output screen below shows a profile of the list of Japanese government bonds split into 4 subdivisions by life. The first subdivision contains all the bonds in the list which have a duration of less than 3.19 years; the next subdivision contails all bonds with durations in the range 3.19 to 6.11 years, and so on.

The report data items show the the averages of yield to final date, life to final date and volatility to final date in each division.

```
DATASTREAM:145K          BONDS LIST PROFILE ANALYSIS          12/05/93  17:22
                         EXPENSES IGNORED
                         INCOME TAXED AT 00.00%
                         CAPITAL GAINS TAXED AT 00.00%

  CURRENCY:£             AVERAGE BY MARKET VALUE(M)

  DIVISION       YIELD          1 POINT        ACCRUD              % OF TOT.
                 TO FIN.        VOL'TY         INTRST              WEIGHTING
                  DATE          FN.DATE

        3.19       3.337          1.480          0.014               24.683
 3.19 -  6.11       4.151          4.136          0.008               27.477
 6.11 -  9.35       4.727          6.035          0.010               30.471
        9.35       5.520          9.851          0.006               17.369

                                  TOTAL WEIGHTING VALUE    £ 961.499B = 100.00
```

Sample output of 145K

Searching for bonds meeting specific criteria - 145S

Program 145S is Datastream's 'Search' program for bonds; it searches for bonds meeting a set of criteria which you specify. You can search through a range of bonds, bond lists or even through the whole database (although you must be careful to use tight criteria to do this).

The bonds which meet these criteria can be saved as a new list, and this list can then be used with any other 145 series program for further research. Individual bonds can be added to or deleted from these lists using program 80B.

A summary of the results is also given.

The program gives you full flexibility over the way the search is performed; in particular, you can specify:

- The search criteria - that is, the data items on which you search (for example, you can choose to search on coupon, on credit rating, on yield, and so on). Up to 10 data items can be used in the search (though only the first 5 will be displayed subsequently
- The limitations that are applied to each data item (for example, coupons within the range 8% to 10%, lives of greater than 10 years, and so on)
- A reference issue against which potential switches can be identified (for example, searching for bonds with a yield greater than the Treasury 12 1/2% 2003 UK benchmark gilt)
- Which groups of bonds are to be excluded from the search (for example, you can exclude all US dollar issues when one of your search criteria is currency of issue)

The search criteria you set up for a search, and the limitations for each item, can be stored under a "search code" with the format S*nnn* (automatically assigned by the program); this search code can then be used repeatedly, without retyping all the criteria. These stored details can be easily amended.

Note: *The results of your search cannot exceed 2000 bonds. A message will indicate if the restrictions you have set are insufficient.*

Sample output is shown on page 130.

Interactive help contains full details of the data items you can use and how you can use reference stocks and search exclusion. Type **?** in any field to see details of valid input.

In addition to the normal range of bonds or bond lists, you can search on **ALL** - the entire Datastream bonds database of over 70,000 issues.

Using the program

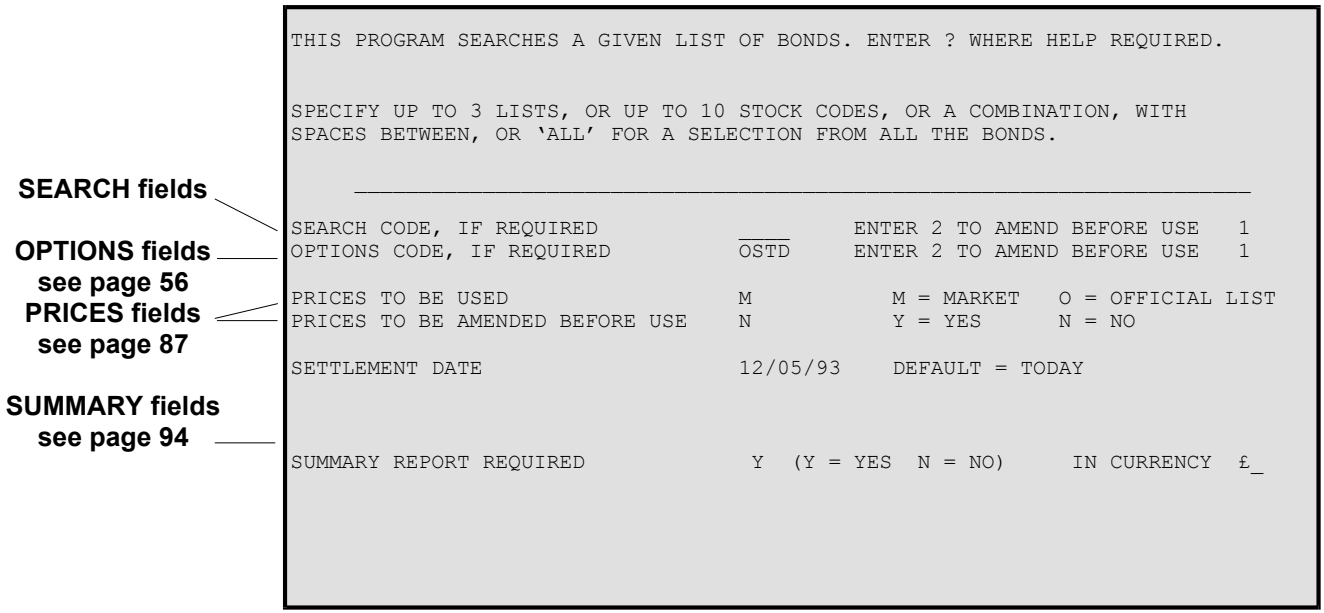
There are five main stages in using program 145S; each stage has an associated input screen which you must complete:

1. Specify the scope of search
2. Set search criteria - data items on which the search is to be performed
3. Set search limitations - to accept only bonds over *x*, under *x*, range from *x* to *y*, to compare with reference stocks, to exclude certain categories and so on
4. Display search results
5. Store the search criteria, and store the results as a new list (if required)

Each of these stages is described in the following pages. The input screens also contain other fields giving you further control; for example, fields to control option settings, prices to be used, a summary of the results, and sort order for final list.

Note: *This program has interactive help. Type **?** in the input field if you need instructions.*

At the Datastream prompt, type **145S** and press <**Enter**>. The following screen appears.



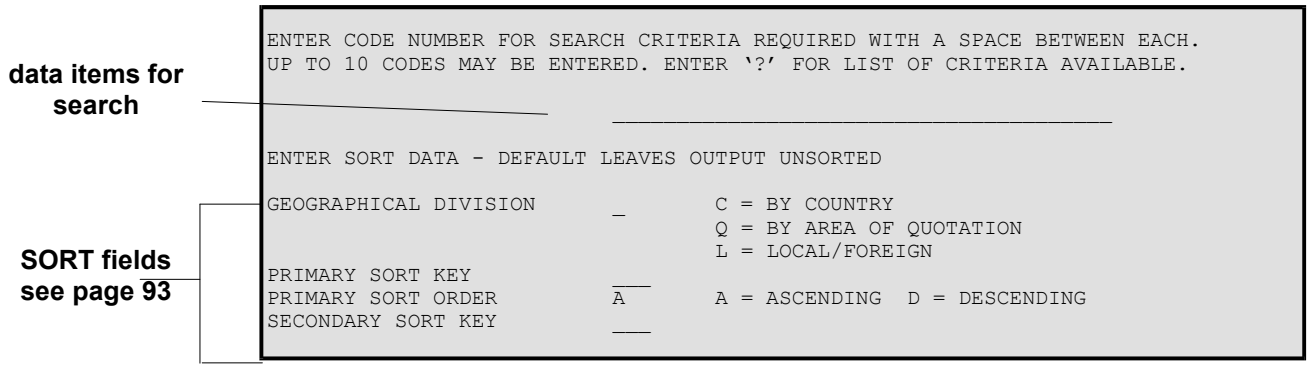
145S initial input screen - setting scope of the search

Scope of the search

The 145S initial input screen allows you to specify the scope of the search (that is, the bonds/bond lists to be searched, or **ALL** to search the entire database) and to set up the criteria under which the final output is to be displayed. The fields are described below.

The SEARCH fields let you repeat a previous search (using the same search criteria and limitations), by typing the search code assigned when you stored the search. (Search codes are of the format S*nnn*, and are displayed through program 146Y.) To set up a new search, ignore these two fields.

When you have completed the initial input screen, press **<Enter>**. The next screen which appears is the 145S search criteria screen. This lets you specify the data items on which you want to carry out the search:



Search criteria screen

Search criteria

This screen allows you to enter the data item numbers of the data items on which you want to search. (Note that not all data items can be used in searching - see interactive help for full details.) You can mix search and display items together, but ensure that any you want to be displayed are within the first 5 specified.

The results of your search cannot exceed 2000 issues, so if you are searching across the entire database of over 70,000 issues, your search criteria must be restrictive. When doing an'ALL' search you must include some non-price related items to ensure that you get less than 2000 stocks. Suitable non-price items are as follows:

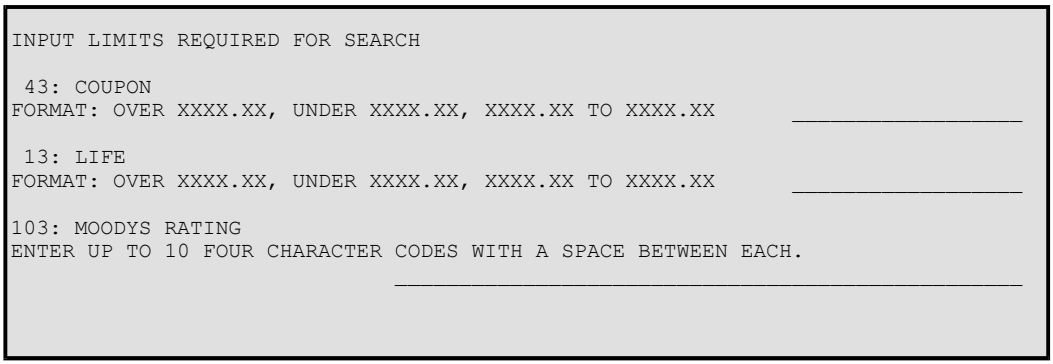
Item	Data item number	Item	Data item
Issue date	41	Industry group	55
Amount issued	42	Market	71
Coupon	43	S & P rating (eurobonds)	101
Amount in issue	44	Moody's rating (eurobonds)	103
Country of guarantor	53	Interest payment type	173
Currency	54	Amortisation	174
Derivative features	176	Optional redemptino features	175

The first 5 data items that you specify in this field will appear on the final output.

You could include data item 61 (the Datastream code) so that you can carry out more in-depth research on individual issues that meet your search criteria.

When you have completed this screen, press **<Enter>**.

The next stage is to set up the limitations for the search - the limitations that you want bonds to meet. The search limitations screen appears as below (in this example, the search data items are 43, 13 and 103):



Search limitations screen

Search limitations

Next to each data item is a field which is used to set limitations for that item. The limitations can be set as follows:

When the data item is numeric or a date:

For searches on numeric data (such as the coupon in the above example) you can specify the range of values that you want to search for. Type **:**

- **OVER** *nn*
- **UNDER** *nn* or
- nn **TO** *nn* when a range of values is required,
- **BEFORE** *ddmmyy*
- **AFTER** *ddmmyy* where the data item is a date (for example, the redemption date).

Reference stocks

The search limitations fields also give you the chance to use a 'reference issue', rather than a specific value. This helps you identify potential switches, without having to first display and remember the data for the reference issue.

To use a reference issue, use its Datastream Code number (in brackets), in place of the numeric value. For example, the code number for UK Treasury 12 $^{1}/_{2}$% 2003 is 915455. To use this issue as a reference, you would type **OVER (915455)**, or **BEFORE (915455)**.

Equations

You can create geographical equations by adding composite group codes and/or country codes together for certain items such as country of guarantor you can also enter equations (called geographical equations). For example to search for European stocks for all countries apart from UK France and Belgium you could type:

EUR-FR-UK-BG

Alternatively to search for Scandinavian stocks excluding Denmark and UK stocks type:

SCN-DK+UK

When you subtract a country code from a composite group code, the country code must be a member of that group.

You cannot duplicate a country in the geographical equation, for example: **SAM+AR** (South America + Argentina) cannot work because Argentina is a member of both groups.

When the data item is non-numeric:

For searches on non-numeric data items (such as Moody's rating in the above example) you can type the mnemonic(s) for the data you want to accept. The valid input obviously depends on the particular data item; use interactive help for full details

The search limitations fields also give you the option to exclude certain groups of bonds from the search. To do this, you use the keyword **NOT** in the limitations field, followed by the mnemonics to be excluded. For example, if searching on country of guarantor you could exclude all German, Swiss and Dutch bonds using **NOT BD SW NL**

When you have set the limitations for each data item, press **<Enter>**.

Display results

The search is then carried out. If successfully completed the following message appears:

```
THERE ARE  40 STOCKS MEETING YOUR SEARCH REQUIREMENTS.
DO YOU WISH TO CONTINUE WITH THIS LIST FOR DISPLAY ?   Y  Y = YES N = NO
```

Note: *The maximum number of bonds which can be displayed from a search is 2000. If your results exceed this number, you will see the message*
SEARCH DOES NOT HAVE ENOUGH RESTRICTIONS : REENTER LIMITS
In this case, add further criteria, or accept your existing criteria and narrow the limitations you apply for each data item.

To display the results of your search, type **Y** and press **<Enter>**. The bonds will then be listed (sorted according to what you typed in the sort fields on the search criteria screen).

Press **<Enter>** each time you want to display the subsequent screen, or press **<+>** on the numeric keypad to auto-page through the output. A sample of the output is shown on page 130.

When all the matches have been displayed, a summary of the bonds that meet your criteria is displayed; this shows the high, low and average (for numeric data) over the previous 12 months. This appears in the currency you requested on the initial input screen.

Sample output of program 145S

The sample output shows the results of searching through the list of Yankee bonds with a life less than 5 years, and over 150 million still in issue. The other data items selected for display only are redemption yield (item 4), industrial group (item 55) and the Datastream code number (item 61).

```
DATASTREAM:145S        LIST OF BONDS IN USER SPECIFIED FORMAT          13/ 5/93
                                EXPENSES IGNORED
                              INCOME TAXED AT  0.00%
                         CAPITAL GAINS TAXED AT  0.00%

  STOCK NAME                  CURRENT   LIFE  AMOUNT     REDEMP  INDS      D/S
                              PRICE           IN         YIELD   GRUP      CODE
                                            ISSUE(M)


AFRICAN DEV BK NOTE 10%     1997
                              112.00   4.47    200.00    6.836 SUPR     564008
AUSTRALIA      DEB  9 1/4%  1996
                              101.75   3.22    200.00    8.607 GOVT     720269
BRITISH GAS    1988 8 3/4%  1998
                               98.62*  4.84    200.00    9.102 IND      725327
I A D B        DEB  7 1/2%  1996
                               92.12   3.59    200.00   10.171 SUPR     750828
I A D B        NOTE 11 5/8% 1994
                              110.12   1.55    200.00    4.767 SUPR     993625
I A D B        NOTE 9 1/2%  1997
                              108.00   4.42    200.00    7.345 SUPR     753589
```

Storing the search criteria and search results

The final stage in using program 145S is to store (or discard) your search criteria/limitations for future re-use, and to store as a restricted list (or discard) the bonds that meet your criteria. A restricted list is a list of bonds with access restricted to your logon id (or logon ids approved by you). The screen runs through a sequence of questions which allow you to give a title to the search format and to assign your own list mnemonic to the list. The screen below shows the full sequence of fields:

```
DO YOU WISH TO STORE THE SEARCH CRITERIA?         : Y   ENTER 'Y' FOR YES
ENTER TITLE FOR SEARCH CRITERIA                   : YANKEE LONG 10
YANKEE LONG 10      - THESE SEARCH CRITERIA CAN NOW BE REUSED WITH CODE S073

DO YOU WISH TO STORE OUTPUT AS A RESTRICTED LIST? : Y   ENTER 'Y' FOR YES

ENTER THE MNEMONIC YOU WILL USE FOR FUTURE ACCESSING OF THE LIST
(FORMAT:UP TO 5 CHARACTERS EXCLUDING COMMAS WITH THE
FIRST CHARACTER A NUMERAL OTHER THAN 9) :  7JJB1


THIS LIST HAS NOW BEEN STORED WITH THE MNEMONIC: 7JJB1
AND IS APPLICABLE TO GROUP PROGRAMS IN THE DATASTREAM SERIES.
DO YOU WISH THE LIST TO BE DISPLAYED FOR CHECKING PURPOSES?
ANSWER YES OR NO:  NO
```

Saving the search criteria, and the search results as a restricted list

145X - Flexible format program

Most of the bond research programs display data in a set format. You can, however, choose your own data for display using program 145X.

This is the 'flexible format' program. You specify the bonds or lists you want to display, and up to 5 data items to be displayed on the output layout.

Additionally, program 145X has full 'Search' capability (as described for program 145S). You can search through a range of bonds, bond lists, portfolios or even the whole database to find those that meet your requirements before displaying the data you specified. Search criteria can be set on up to 10 data items (not necessarily those you want to display). The results of your search can then be displayed with another set of data items.

Note: *You should use the search capability of 145X if you want to search using one set of criteria, but display other items, otherwise it is easier to use 145S for searching.*

Full details of searching, and the various input screens you see if you choose to search using 145X, are given in the section "Searching" (page 125).

Details you set up while using 145X can be saved and re-used later:

- Options settings (income tax and CGT rates, settlement dates, etc) can be specified, and saved under an options code. See page 56 for details.
- Search criteria you set up for the search, and search limitations for each of the items, can be stored under a search code. See page 125 for details.
- The layout you design can be stored under a "Layout code"

A sample of the output from 145X is given on page 138.

Using the program

If you do not want to use the search facility, there are just 3 stages in using 145X:

1. Specify the range of bonds to be displayed
2. Specify the layout - up to 5 data items to appear on the final display
3. Display the output, and store your layout under a new layout code if required

Each stage has an input screen to complete; these screens are described on the following pages.

If you do wish to search, three extra stages are necessary:

1. Specify the range of bonds to be searched

   Set search criteria - up to 10 data items on which the search is to be performed

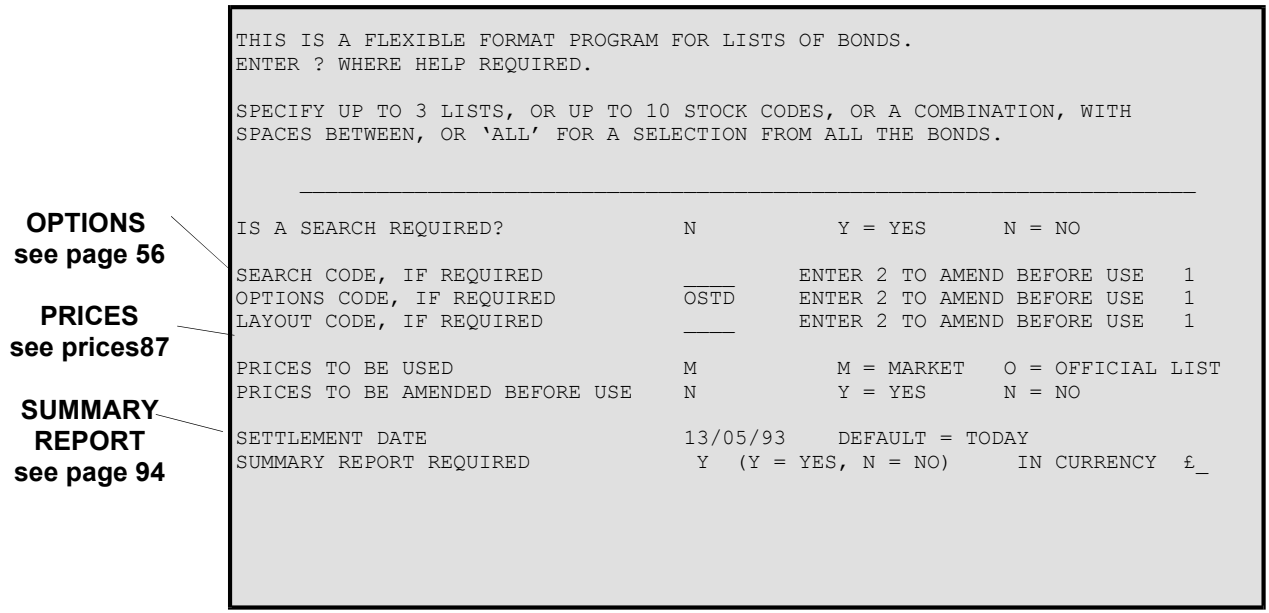
   Set search limitations - to accept only bonds over *x*, under *x*, range from *x* to *y*, to compare with reference stocks, to exclude certain categories and so on

   Search results displayed; decide whether to display them or not
2. Specify the layout - up to 5 data items to appear on the final display
3. Display the output and store your layout under a new layout code, store the search criteria under a search code, and store the results as a new list (if required)

The input screens for these three extra stages are fully described in “Searching” (page 125), and are not reproduced here.

Note: *The data items used for searching will not be displayed unless you have also specified them as display items.*

At the Datastream prompt, type **145X** and press <**Enter**>. The following screen appears.



145X initial input screen

Scope of bonds for display/search

Use this screen to specify the bonds/lists required.

If you want to search through these and restrict the range of bonds, type **Y** in the **SEARCH REQUIRED?** field.

To use an existing set of search criteria and limitations, existing options settings, or an existing layout you've previously stored, type the code alongside the appropriate field.

All existing codes can be listed using program 146Y. Search codes are described on page 131, options codes on page 58 and layout codes on page 136.

When you have completed the initial input screen, press **<Enter>**.

If a search is required

If you have chosen to search, you will now see the search criteria screen, followed by the search limitations and search results screens. See page 85 for a description of the search screen.

Defining a layout

The layout screen then appears:

SORTING
see page 93

```
ENTER UP TO 5 ITEM CODES FOR COLUMN HEADINGS IN THE ORDER OF THE REQUIRED
DISPLAY. ENTER '?' FOR LIST OF ITEMS AVAILABLE.

ENTER ITEM CODES REQUIRED WITH A SPACE BETWEEN EACH

                           ____________________

ENTER SORT DATA - DEFAULT LEAVES OUTPUT UNSORTED

GEOGRAPHICAL DIVISION      _       C = BY COUNTRY
                                   Q = BY AREA OF QUOTATION
                                   L = LOCAL/FOREIGN
PRIMARY SORT KEY           ___
PRIMARY SORT ORDER         A       A = ASCENDING  D = DESCENDING
SECONDARY SORT KEY         ___
SECONDARY SORT ORDER       A       A = ASCENDING  D = DESCENDING
```

145X layout screen

Specify the layout

Use this layout screen to specify the data item numbers you want to display. Use interactive help to list the items available.

When you have specified the data item numbers, and adjusted the sort order fields as required, press **<Enter>**.

Your layout is displayed, with data items forming the columns across the screen and the bonds listed down the screen. Bonds are sorted according to what you typed in the SORT fields. Press **<Enter>** each time you want to display the subsequent screen, or press **<+>** on the numeric keypad to auto-page through the output although you must ensure **<Num_Lock>** is off.

When all the stocks have been displayed, a summary of the bonds is displayed; this shows the high, low and average (for numeric data) over the previous 12 months. This appears in the currency you requested on the initial input screen.

Storing the layout, search criteria and search results

The final stage in using program 145X is to store or discard the details you have altered. You can store:

- The flexible format layout you designed
- The search criteria/limitations you set
- The search results as a restricted list (A restricted list is a list of bonds with access restricted to your logon id). This list can subsequently be amended in the 80B program

The screen runs through a sequence of questions which allow you to give a title to the layout, the search format and to assign your own list mnemonic to the list.

Sample output of program 145X

In this example, a search was carried out for high yield (>8.75%) bonds within the French government list; then the items for life (item 13), amount currently in issue (item 42), amount issued (item 44) and the Datastream code (item 61) were specified for display.

```
DATASTREAM:145X        LIST OF BONDS IN USER SPECIFIED FORMAT          13/ 5/93
                                EXPENSES IGNORED                        11:35
                             INCOME TAXED AT  0.00%
                        CAPITAL GAINS TAXED AT  0.00%

  STOCK NAME                            CURRENT   LIFE  COUPON AMOUNT      D/S
                                        PRICE                   IN        CODE
                                                             ISSUE(M)


BTAN FRANCE    1988 8%      1993         99.97   0.16  8.0000  12138.0  558035
BTAN FRANCE    1988 8%      1993        100.13   0.42  8.0000  25009.0  797594
BTAN FRANCE    1989 8%      1994        100.44   0.67  8.0000  37181.0  798359
BTAN FRANCE    1989 8%      1994        100.91   0.92  8.0000  42027.0  558036
BTAN FRANCE    1989 8%      1994        101.33   1.16  8.0000  32118.0  558152
BTAN FRANCE    1989 8%      1994        101.75   1.42  8.0000  25274.0  558334
BTAN FRANCE    1990 9%      1995        103.92   1.75  9.0000  32120.0  558557
BTAN FRANCE    1993 7.5%    1995        101.66   1.92  7.5000  33432.0  389219
BTAN FRANCE    1989 9%      1995        105.42   2.50  9.0000  30038.0  558937
BTAN FRANCE    1991 9%      1996        105.92   2.75  9.0000  39598.0  590195
BTAN FRANCE    1991 8.5%    1996        105.80   3.50  8.5000  28133.0  590538
BTAN FRANCE    1992 8.5%    1997        106.11   3.83  8.5000  40237.0  590774
BTAN FRANCE    1992 8.5%    1997        106.93   4.50  8.5000  22515.0  590616
```

Sample output of 145X

Displaying cashflow calculations - 145Y

This program provides cash flow calculations (estimated future income and capital repayments) for the bonds contained in any portfolio or list held on Datastream.

It is an effective method of determining the potential income from your holdings and analysing the benefits of buying or selling a specific configuration of bonds. Dummy lists can be constructed on program 80A or 300B for cash flow calculations which can be used to test the benefits of one set of holdings against another. If a stored portfolio is used, the cash flow will reflect the proportion of bond actually held in the portfolio.

Using the program

Type **145Y** at the Datastream prompt and press **<Enter>**. The following screen appears:

Yield options

Early redemption see page 95

STOCKS

PRICES see page 87

```
THIS PROGRAM CALCULATES ESTIMATED FUTURE INCOME AND CAPITAL REPAYMENTS FOR
THE FIXED INTEREST PART OF YOUR LIST OR PORTFOLIO. ENTER ? WHERE HELP REQUIRED.

ENTER UP TO 3 LISTS, 3 PORTFOLIOS, OR 10 STOCK CODES

REPORT OPTION                              1   1 = CASHFLOW+SUMMARY  2 = SUMMARY
REPORT CURRENCY CODE                       __
YIELD OPTION FOR SUMMARY                   _   1,2,3,4 OR BLANK
FREQUENCY OF YIELDS                        __  AN = ANNUAL  SA = SEMI-ANNUAL

DRAWING OPTION FOR STOCK WITH SINKING FUND          1   1,2 OR 3
COUPON RATE ABOVE WHICH EARLY REDEMPTION IS ASSUMED  20___

FLOATING RATE ISSUES ?                     Y   Y = YES      N = NO
IRREGULARLY PRICED ISSUES ?                Y   Y = YES      N = NO
CURRENCY CODES (MAX. 12 OR 'ALL')          ALL_____________________________
INDUSTRY GROUPS (1 - 14 OR 'ALL')          ALL_____________________________
GEOGRAPHICAL EQUATION OR 'ALL'             ALL_____________
PRICES TO BE USED                          M   M = MARKET   O = OFFICIAL LIST
PRICES TO BE AMENDED BEFORE USE ?          N   Y = YES      N = NO
EXCHANGE RATES TO BE AMENDED BEFORE USE    N   Y = YES      N = NO
SETTLEMENT DATE                            13/05/93         DEFAULT = TODAY
```

You must specify the lists or bonds required *and* the report currency code.

Yield options

These fields allow you to specify:

- Yield option for summary
- Frequency of yields
- Drawing options
- Coupon rate above which early redemption is assumed (see page 95).

See interactive help for further details.

Stock selection fields

These allow you to specify whether or not to include different types of stocks which may exist in your list/portfolio. See interactive help for further details.

Prices

See ‘Prices’ on page 87.

You also have the option to amend exchange rates.

When you have completed the input screen and amended prices, yield options, and exchange rates if required, press **<Enter>**.

All stocks which are excluded from the reports are displayed. Rejected stocks include stocks which are undated or irredeemable,

Sample output of program 145Y

This example shows how to display estimated future income and capital repayments for the bonds in the Datastream list of Gilts.

```
DATASTREAM:145Y                                                BASE DATE: 13/ 5/93

                        ESTIMATED     ESTIMATED CAP.          ESTIMATED
                         INCOME(£ )     REPAYMENTS(£ )      TOTAL RECEIPTS(£ )

13 MAY 1993                       0                0                       0
14 MAY 1993                       0                0                       0
17 MAY 1993               369277898                0               369277898
18 MAY 1993                       0                0                       0
19 MAY 1993                65730000                0                65730000

MAY 1993                  657297649                0               657297649
JUN 1993                  452411875                0               452411875
2ND QUARTER              1544717422                0              1544717422
JUL 1993                 1701382886       1100000000              2801382886
AUG 1993                 1450912742                0              1450912742
SEP 1993                 1358028494        600000000              1958028494
3RD QUARTER              4510324122       1700000000              6210324122
OCT 1993                  874467496                0               874467496
NOV 1993                 1223703047       1065000000              2288703047
DEC 1993                  452411875                0               452411875
4TH QUARTER              2550582418       1065000000              3615582418
```

Cashflow

The output shows the cashflow:

- Next 5 days daily
- Next 2 years quarterly
- Next 25 years annually

Press **<Enter>** to page through these screens.

These screens are then followed by a grand total of:

- Income
- Capital repayments
- Total receipts

	ESTIMATED INCOME(£)	ESTIMATED CAP. REPAYMENTS(£)	ESTIMATED TOTAL RECEIPTS(£)
2015	865530324	700000000	1565530324
2016	838405324	3508615852	4347021176
2017	750689944	5750000000	6500689944
TOTAL FOR 25 YEARS	134984190847	156027299620	291011490467
OVER 25 YEARS	837514564	8429791748	9267306312
GRAND TOTAL	135821705411	164457091368	300278796779

The summary

The summary shows the following information:

- Dated stocks still outstanding
- Undated stocks still outstanding
- Total capital repaid
- Average life of selected stocks
- Average redemption yield of selected stocks

```
DATASTREAM:145Y                                              BASE DATE: 13/ 5/93

                          ESTIMATED     ESTIMATED CAP.          ESTIMATED
                           INCOME(£ )     REPAYMENTS(£ )      TOTAL RECEIPTS(£ )



DATED STOCKS
STILL OUTSTANDING           837514564      5232541748           6070056312

UNDATED STOCKS
STILL OUTSTANDING                          3197250000

TOTAL CAPITAL REPAID

SETTLEMENT DATE: 13/ 5/93
AVERAGE LIFE OF SELECTED STOCKS              10.0
(EXCLUDING UNDATED STOCKS)

AVERAGE REDEMPTION YIELD OF SELECTED STOCKS          7.13
```

146Y - Maintenance program

This program displays stored option, layout or search criteria codes which have previously been stored on 144 or 145 series programs. You can:

- list the codes and titles, or you can review the data set up for a specific code.
- delete any redundant codes.
- print the details displayed to produce a paper reference of codes or individual criteria.

146Y only displays data set up by users with the same user id.

Note: *You cannot amend details for a format using 146Y. To amend data use a 144 or 145 program to call up the data for that search/options/layout code, and choose to "amend before use". Then store the amended data back under the same code after the output is displayed.*

Using the program

Type **146Y** at the Datastream prompt and press **<Enter>**. From the menu displayed select the option you require.

Option	Purpose
1	Displays stored option, layout or search codes
2	Deletes a stored code. You must know the code before you select this option.
3	Displays all criteria associated with a specific stored code.

You should always delete options that you no longer use, and always supply a clear title for codes so that you can readily identify it.

Bond research using other Datastream services

Bond research using other Datastream services

In addition to the dedicated Bond Research programs (the 144s and 145s), you can study and use bond data using many other Datastream services. For example:

- Producing graphs of bond data
- Producing statistical reports
- Downloading data into your spreadsheets
- Creating your own bonds and bond lists
- International Bonds package (at an extra cost) allows you to view eurobond data

This section briefly describes how these other services might be used.

Producing graphs of bond data

Datastream's Graphics service comprises 20 programs which present financial data as graphs. The following pages describe two of these programs which are aimed specifically at the bond researcher. These are:

- 401E displaying redemption yield differences. See the following pages.
- 401N displaying yield curves. See page 150

The other programs which you may find useful when working with bond data are:

- 401A plotting a line graph for up to 3 bonds or indices, using datatypes to specify the data you require
- 401D plotting a graph of A relative to B, for example a bond's performance relative to a benchmark. Again you can use datatypes to specify the data of interest
- 401X plotting multiple graphs on a page for graphical comparison

All Graphics programs are described in the *Graphics User Guide*, together with samples of the type of output you can obtain.

Redemption yield differences - 401E

401E produces a chart plotting the standard redemption yield differences between any two bonds, over a time period you specify. For example you can compare an issue with the yield on a benchmark for switching opportunities.

You can also enter details of income tax and capital gains tax to be used in yield calculations if required.

How to use program 401E

At the Datastream prompt type **401E** and press **<Enter>**. The following screen appears:

```
DATASTREAM 401E

THIS PROGRAM PLOTS REDEMPTION YIELD DIFFERENCE OF STOCK 'A' LESS STOCK 'B'.

ENTER VALUES REQUIRED IF OTHER THAN THE DEFAULT VALUES SHOWN.
ENTER ? WHERE HELP REQUIRED.
ENTER ! FOR SECURITIES CODES (FOR OTHER CODES CLEAR AND USE HELP CDS?)

                STOCK 'A'  590538_
                STOCK 'B'  956689_
               START DATE  -1Y_____
                 END DATE  ________
              INCOME TAX%  _0____
          CAP. GAINS TAX%  _0____
    Y AXIS SCALE(LIN/LOG)  LIN
```

401E input screen

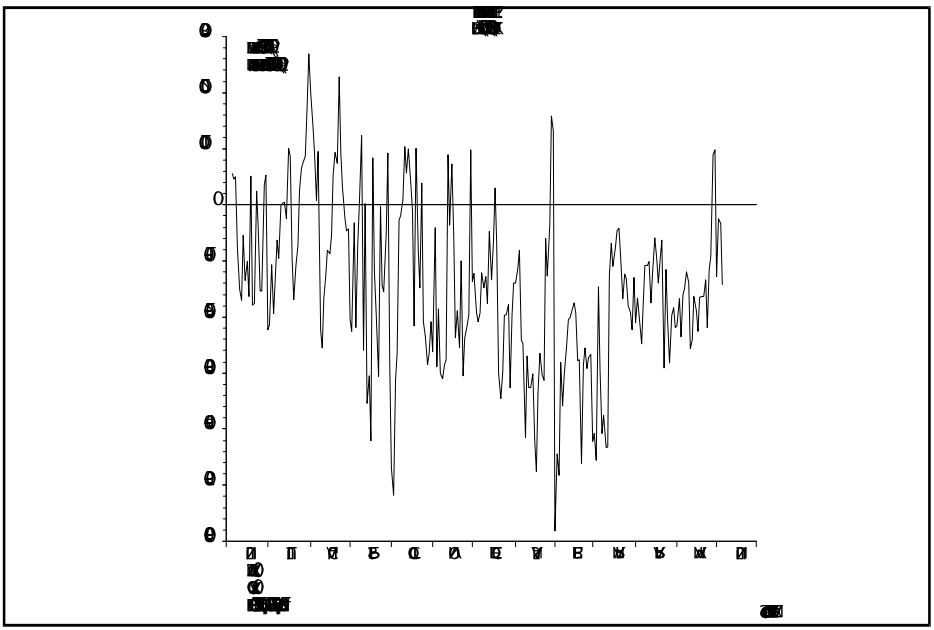
Use the **CODE** fields to specify the two bonds you want to compare.

You can either supply start and end dates, or just a start date (the end date will default to yesterday if left blank).

Use the remaining fields to supply further information if the defaults are not appropriate.

When the screen is complete, press **<Enter>**. The graph of redemption yield difference is displayed; to change the appearance of the graph, or to add annotation, see your *DSCOM* or *DSWindows User Guide*.

The sample output below plots the yield difference between two French government issues plotted over a one-year period.



Plotting yield curves - 401N

401N plots yield curves for lists of bonds, with or without scatter points of underlying data, plotted at any date you specify. You can plot the redemption yield or interest yield against the life or duration, with the line of best fit calculated using least squares regression techniques.

Underlying data can also be displayed for the issues within the list(s) you plot, and you can overlay scatter points for lists other than those plotted as yield curves.

Stored yield curves are available for major government and international/euro markets since September 1990. You can create your own yield curve equations if necessary using program 300A.

Type **HELP YC?** at the Datastream Prompt for details of yield curves.

See page 44 for an example of the program.

Stored yield curves available

These are available for all the major bond markets, both domestic and international. The lists used to create the curves are regularly reviewed to ensure that the most representative bonds for which data is available are included.

To access these stored curves add a suffix of ‘03’ or ‘05’ to the root mnemonic. For example, if you wish to display the Australian government curve to the power of 3 the mnemonic is GVAU03.

Stored yield curve mnemonics can be used in the 401N programand with data item 171 (spread against stored yield curve) in the 145 programs.

For each market two yield curves are calculated:

* one to the power of 3
* one to the power of 5

Mnemonic	Market	Maturity
GVAU	Australian Government	1 to 10
GVOE	Austrian Government	1 to 10
GVBG	Government	1 to 10
GVCN	Canadian Government	1 to 30
GVDK	Danish Government	1 to 10
GVFR	French Government	1 to 30
GVBD	German Government	1 to 10
PABD	German Public Authority	1 to 10
GVIR	Irish Goverrnment	1 to 25
GVIL	Italian Government	1 to 10
GVJP	Japanese Government	1 to 10
GVNL	Netherlands Government	1 to 10
GVNZ	New Zealand Government	1 to 10
GVES	Spanish Government & Matador	1 to 10
GVSW	Swiss Government	1 to 10
GVUK	UK Government	1 to 25
GVUS	US Government	1 to 30
INU$	Eurodollar	1 to 10
INCU	ECU	1 to 10
INY	Euro Yen	1 to 10
INDM	International Deutsche Mark	1 to 10
IN£	Euro Sterling	1 to 20
INFF	Euro French Franc	1 to 10
INSF	International Swiss Franc	1 to 10
INC$	Euro Canadian Dollar	1 to 10

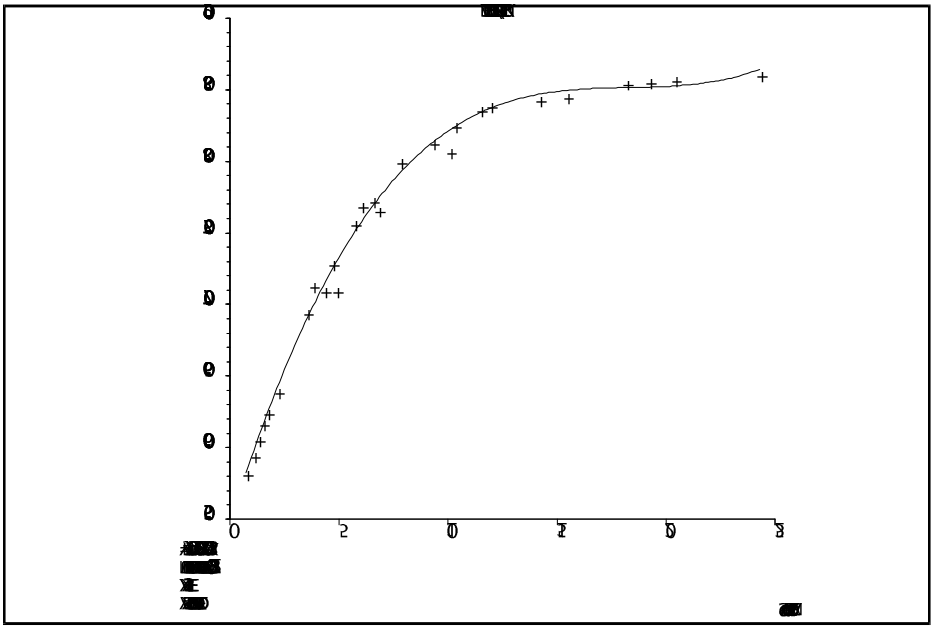
Note: *Values for spreads will not include bonds:*

- which are perpetuals

- where the life of the bond exceeds the maturity value range for the market. To do so would produce meaningless spread values through extrapolation

For UK Gilts where there is a price and special ex-dividend price the spread will only be calculated for the price.

Example of the stored yield curve - GVUK (UK government)



Creating your own yield curve expressions on 300A

You can use 300A to display the spread of a bond against a user created curve. To do this set up an expression of the following type, based on the formula given at the bottom of the 401N screen.

For details of 300A refer to the *Time Series Analysis User Guide*

A flexible format graph with bond indices

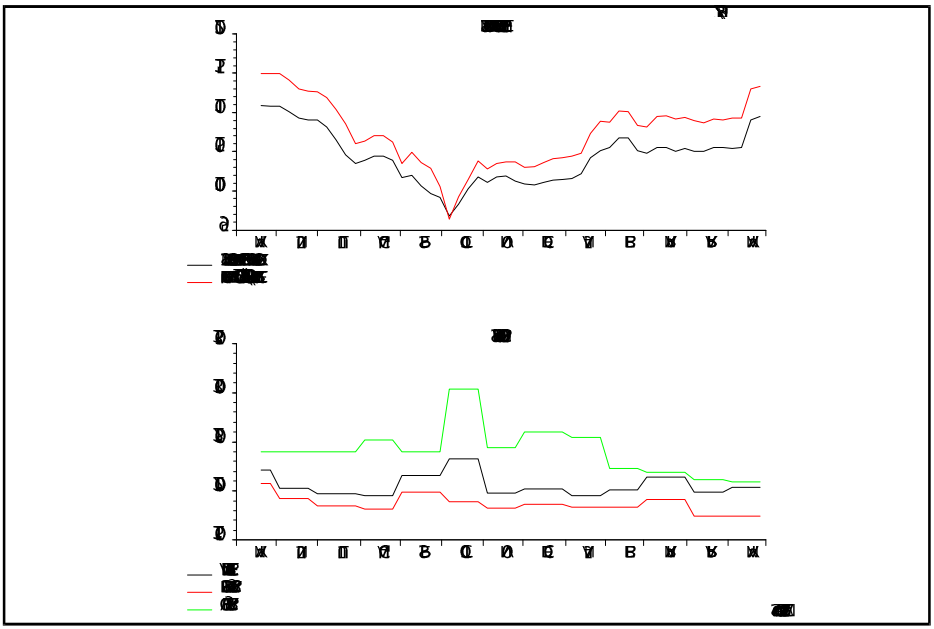
401X allows you to plot up to four graphs on a single screen. The following example shows the clean price of a Spanish bond plotted with the clean price index of the ISMA bond index

Complete your input screens as follows:

```
DATASTREAM 401X            FLEXIBLE GRAPH - FIRST CHART              27/05/93
PROGRAM : _____________________________   (TYPE 300A FOR EXPRESSION FACILITIES)
ENTER ? FOR HELP OR ! FOR SECURITY CODES          CHART  SCALE
     CODE OR EXPRESSION                            TYPE  L/R/B  LEGEND
1. ISMSPAL(CI)_____________________________________  ___   L
                                                           _____________________
2. 558628(CP)______________________________________  ___   L
                                                           _____________________
3. ________________________________________________  ___   L
                                                           _____________________
4. ________________________________________________  ___   L
                                                           _____________________
 PLOT FREQUENCY  W    START DATE  -1Y_____    END DATE  ________
 Y SCALE LOG/LIN  LIN   GRID REQUIRED  NO__     X AXIS  YES    Y AXIS  YES
      L.H. SCALE: Y AXIS RANGE        _______  TO  _______
      R.H. SCALE: Y AXIS RANGE        _______  TO  _______
 GRAPHICAL AREA - X COORDINATES  1,100__    Y COORDINATES  50,100_
 GRAPH TITLE   ISMA_BOND_INDEX_VS_SPANISH_ISSUE_____________________________
 DATA REBASED  _       DATA DISPLAYED  NO__     NO. OF DEC. PLACES  2
 NUMBER OF GRAPHS ON ONE SCREEN  2                                 DATE DISPLAY
 SCREEN TITLE IF MORE THAN ONE GRAPH                               N = SUPPRESS
_____________________________________________________________________       _
```

```
DATASTREAM 401X            FLEXIBLE GRAPH - SECOND CHART            27/05/93
PROGRAM : _____________________________ (TYPE 300A FOR EXPRESSION FACILITIES)
ENTER ? FOR HELP OR ! FOR SECURITIES CODES       CHART  SCALE
     CODE OR EXPRESSION                           TYPE  L/R/B  LEGEND
1. ISMSPAL(CO)_____________________________________  ___   L
                                                        ALL_MATURITIES__________
2. ISMSPL5(CO)_____________________________________  ___   L
                                                        LESS_THAN_5_YEARS_______
3. ISMSPG5(CO)_____________________________________  ___   L
                                                        OVER_5_YEARS____________
4. _____________________________________________  ___   L
                                                   _____________________________
 PLOT FREQUENCY  W    START DATE  -1Y_____   END DATE  ________
 Y SCALE LOG/LIN  LIN   GRID REQUIRED  NO__    X AXIS  YES   Y AXIS  YES
      L.H. SCALE: Y AXIS RANGE      _______  TO  _______
      R.H. SCALE: Y AXIS RANGE      _______  TO  _______
 GRAPHICAL AREA - X COORDINATES  1,100__    Y COORDINATES  100,50
 GRAPH TITLE   SPANISH_COUPONS_____________________________________________
 DATA REBASED  _
```

When you have completed the input screens press **<Enter>** to produce the graphs:



A line chart comparing a bond index and a bond - indexed on 100

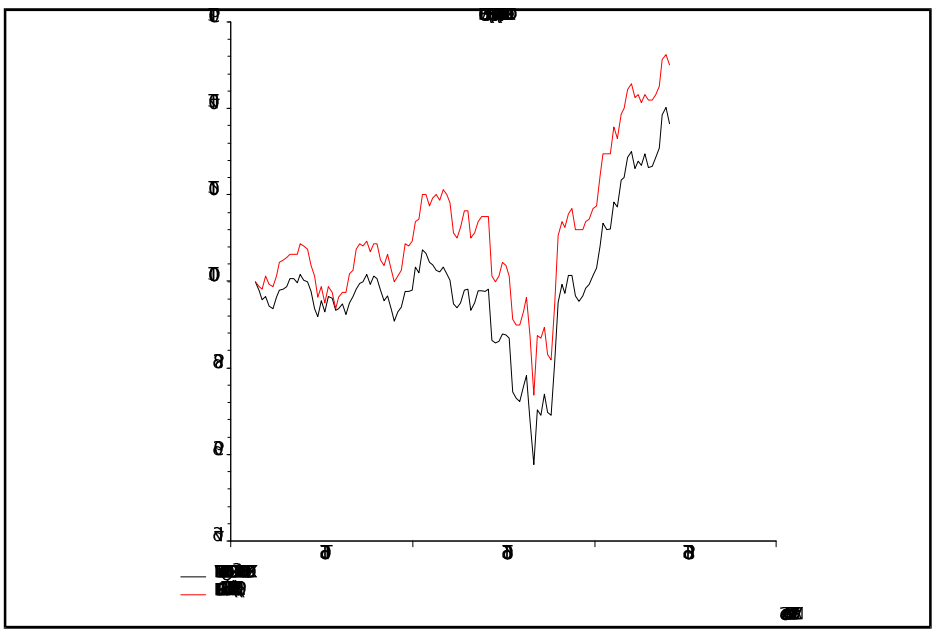
To produce this chart use program 401A.

At the first **CODE OR EXPRESSION** field type **`PECU3YR`** - the code for PARIBAS LIQUID ECU BOND 3 YR.

At the second **CODE OR EXPRESSION** field type **`595583`** - the code for Belgium 1991 9 1/8% 18/3/98.

Type **`1/1/91`** for the start date and select **2** to plot values in index form.

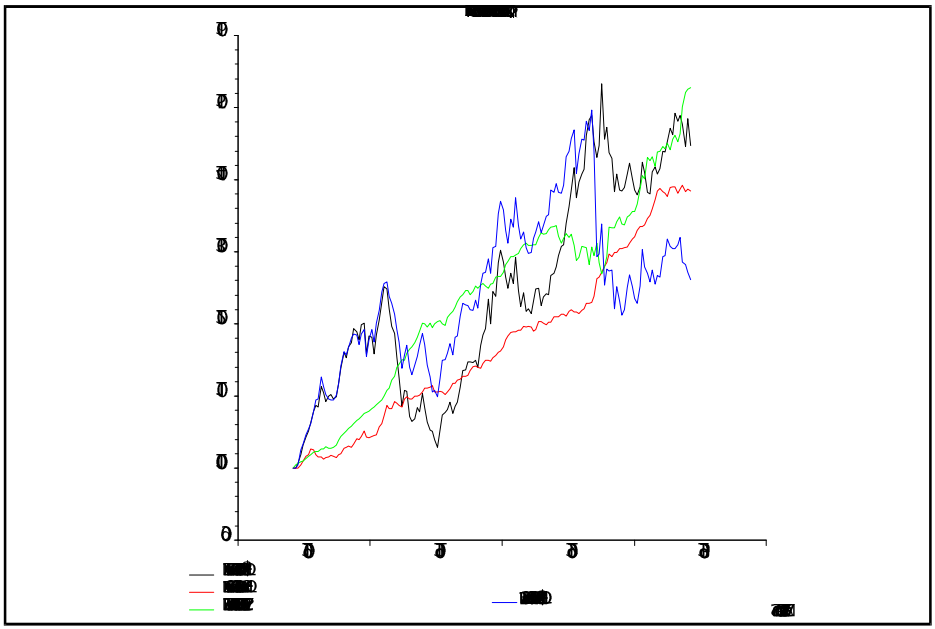
Press <**Enter**> to display the graph.



JP Morgan bond return indices

To produce this chart type 401X at the Datastream prompt and press **<Enter>**. Select **C** to create a new chart and fill in the input screen as follows:

```
DATASTREAM 401X            FLEXIBLE GRAPH - FIRST CHART              07/06/93
 PROGRAM : _____________________________   (TYPE 300A FOR EXPRESSION FACILITIES)
 ENTER ? FOR HELP OR ! FOR SECURITY CODES          CHART  SCALE
      CODE OR EXPRESSION                            TYPE  L/R/B  LEGEND
 1. JPMBDU$(RI)_____________________________________  ___   L
                                                           _____________________
 2. JPMBDDM(RI)_____________________________________  ___   L
                                                           _____________________
 3. JPMESSP(RI)_____________________________________  ___   L
                                                           _____________________
 4. JPMESU$(RI)_____________________________________  ___   L
                                                           _____________________
  PLOT FREQUENCY  D    START DATE  -3Y_____    END DATE  ________
  Y SCALE LOG/LIN  LIN   GRID REQUIRED  NO__     X AXIS  YES   Y AXIS  YES
       L.H. SCALE: Y AXIS RANGE        _______  TO  _______
       R.H. SCALE: Y AXIS RANGE        _______  TO  _______
  GRAPHICAL AREA - X COORDINATES  1,100__    Y COORDINATES  1,100__
  GRAPH TITLE   RETURN_ON_GERMAN_&_SPANISH_MARKETS_IN_LOCAL_CURRENCY_&_U$___
  DATA REBASED  I      DATA DISPLAYED  NO__     NO. OF DEC. PLACES  2
  NUMBER OF GRAPHS ON ONE SCREEN  1                                DATE DISPLAY
  SCREEN TITLE IF MORE THAN ONE GRAPH                              N = SUPPRESS
```



Producing statistical reports of bond data

Datastream's Time Series Analysis service comprises 8 programs which present data in tabular format. For example, you can display daily data for a bond over a period of time. These programs also allow you to use functions and expressions to manipulate and adjust the data that is displayed, display moving averages, and so on. The programs are effecively the statistical equivalent of the Graphics service, and (as with the 401 series) you use datatypes to specify the data of interest.

All the programs are fully described in the *Time Series Analysis User Guide*; The use of functions and expressions is also covered in that guide.

Displaying spread data for bonds in a list

Program 301D displays data values at two dates for a list (or individual bond), also displaying the percentage change and the high/low/average over the period.

Type **301D** at the Datastream prompt.

The input screen appears.

The 301D initial input screen allows you to supply the details of the data you want to display and the time period over which it is to be displayed. Use the first field to enter the bond codes or list mnemonics of interest. Use the second field to specify the data you want to display; you can request information using:

- a symbolic expression such as X(*datatype*). Each bond (or bond within the list you specify) is substituted for the X and the corresponding data displayed on the program output. So X(SP) displays US T-bond spread for all issues specified in the first field
- the code number for any previously-stored expression. For example if you have stored an expression using program 300A you will have a code number such as E012

```
THIS PROGRAM DISPLAYS VALUES AT TWO DATES FOR LIST OF SERIES/EXPRESSIONS
ENTER ? WHERE HELP REQUIRED.

LIST OF SERIES/EXPRESSIONS (C)  GILTS_____________________________________
(SEPARATED BY COMMAS)           _____________________________________________

EXPRESSION FOR STORED LIST (O)  X(SPYC#GVUK03)_____________________________

1ST DISPLAY DATE           (O)  -6M_____              DATE FORMATS
                                                      ____________
2ND DISPLAY DATE           (O)  ________              DD/MM/YY OR MM/YY OR
                                                      EG.  -5D,-3M,-4Q,-5Y

C=COMPULSORY,O=OPTIONAL
```

The example output of program 301D shown below displays data for all the issues in the UK GILTS bond list with the spread over the equivalent stored curve for UK Government to the power of 3, over a six-month period.

DATASTREAM 301D 26/ 5/93

	VALUE AT 25/11/92	VALUE AT 25/ 5/93	CHANGE	--RANGE OVER PERIOD-- HIGH	LOW	AVGE
934533(SPYC#GVUK03)	0.26	-0.48	-0.74	0.54 23/ 2/93	-0.67 23/ 4/93	0.09
901907(SPYC#GVUK03)	-0.05	0.27	0.32	0.56 10/ 2/93	-0.42 1/12/92	0.12
915214(SPYC#GVUK03)	-0.00	-0.24	-0.23	0.27 22/ 1/93	-0.37 27/ 4/93	-0.02
754490(SPYC#GVUK03)	0.02	-0.11	-0.13	0.17 20/ 1/93	-0.25 29/ 4/93	-0.04
915167(SPYC#GVUK03)	0.01	-0.13	-0.14	0.22 20/ 1/93	-0.26 22/ 4/93	-0.05
915615(SPYC#GVUK03)	0.07	-0.17	-0.24	0.17 21/ 1/93	-0.29 29/ 4/93	-0.03

Downloading bond data to a spreadsheet - Data Channel

Datastream's Data Channel (the 900 series programs) allows you to download data for bonds and bond lists from Datastream's mainframe to a file on your PC. You use datatypes to specify which type of data you require. This data can then be used in your spreadsheet or in any other package.

The Data Channel programs are fully described in the *Data Channel User Guide*. See page 10.

See the appendices of that manual for lists of the datatypes which you can use for downloading data.

Creating bonds and bond lists

In addition to the extensive range of public issues and bond lists available on Datastream, you can create your own issues and lists. This is particularly useful for "what-if" research where you may know there are no public issues meeting your criteria, or for comparison purposes where you may need a reference list containing a specific subset of bonds.

The Datastream programs you need to use are as follows:

- Program 300D enables you to create issues - bonds, warrants, equities, etc. Bonds and warrants can be analysed in the 144 and 145 programs. All can be used in portfolios.
- Program 80A enables you to create a restricted-access list - a list of equities and bonds that can only be used by your logon id. These lists can contain user-created bonds, and can be used in the 145 series, Data Channel, 301, 401N etc
- Program 80B enables you to edit 145 lists or your 80A created lists
- Program 300B enables you to create lists containing data from any of the Datastream databases. These lists can be used on the 145 series, the 301 series, the 401N yield curve program and Data Channel
- Programs 145S and 145X enable you to store the result of your search as a list for further research - see page 85

Program 300D is fully described in the Datastream manual *Creating securities on Datastream*. The 300 series are described in the *Time Series Analysis User Guide.*

Note also that if you subscribe to Datastream's Valuations service, you can create your own portfolios containing bonds and equities, using the 86 series and 87 series programs. These portfolios can be used in any of the 144 and 145 series bond research programs, as well as the Valuations service programs provided you have access to the bond services.

Appendices

Appendix A - Data availability table

The following table shows the type of data displayed by each of the bond research series, and by other relevant Datastream program series.

	144A	144B	144C	144D	144E	144F	144X	145A	145B	145C	145D	145E	145F	145G	145H	145K	145S	145X	145Y	146Y	301s (Time Series)	401s (Graphics)	28s (Stockmarket)	150s (Economics)	250s (Futures/Options)	302A (Minder)
Price data	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■				■
Yield data	■	■	■	■	■		■	■	■	■	■	■	■	■	■	■	■	■			■	■				
Issue Data	■	■	■			■	■						■	■	■	■	■	■			■	■				
Redemption data	■	■	■				■	■	■							■	■	■			■	■				
Convertible data			■				■						■			■	■	■			■	■				
Warrants data			■				■							■	■	■	■	■			■	■				
Floating Rate data			■				■									■	■	■			■	■				
Borrower data						■										■										
Cashflow/income projection																■			■							
Bond indices data																					■	■	■			■
Economics data																					■	■	■	■		

Appendix B - Data items by category

This section lists the valid data items and data item numbers for program 145K input fields.

Data item for analysis

Price related items	Item number		
Clean price	2	Market value	142
Current price	1	12 month price high	28
Gross price	3	12 month price low	29

Yield related items	Item number		
Accrued interest	12	Volatility	23
Grossed up yield	9	Volatility in yield to final date	24
Interest yield	11	Volatility to average life	26
Number of days accrued	38	Volatility to equivalent life	25
Optimum yield	10	Volatility to next call	27
Redemption yield	4	Yield to average life	7
Variation - to average life	21	Yield to average life	7
Variation - to equivalent life	20	Yield to equivalent life	6
Variation - to next call	22	Yield to final date	5
Variation	18		
Variation In yield to final date	19	Yield to next call	8

Redemption related items	Item number		
Average life	16	Life to next call	17
Duration	102	Next call value	35
Equivalent life	15	Next drawing value	33
Life	13	Yield on equivalent US T-bond	140
Life to final date	14	Yield spread over US T-bond	141

Issue details	Item number		Item number
Amount in issue	44	Industry group	55
Amount issued	42	Issue price	73
Amount issued in $	70	Lead manager	56
Area of delivery	52	Market	71
Area of quotation	51	Market sector	99
Country of guarantor	53	Moody's rating	103
Coupon	43	S&P Rating	101
Currency	54	Type of bond	46
		Type of guarantee	50

Convertible data	Item number		Item number
Equivalent conversion price	83	Premium/discount %	74
Income difference %	80	Premium/discount per share	77
Income difference per share	81	12 month p/d per share low	79

Floating rate data	Item number
Current F/R coupon	84
Minimum F/R coupon	85

Warrants data	Item number
Exercise price	136

Bond warrants	
Exercise yield current	134
Gearing	132
Parity	133
Prem./discount (warrants)	130

Layout code/report data items

Price related items	Item number		
Clean price	2	Gross price	3
Current price	1		

Yield related Items	item number		
Accrued interest	12	Volatility	23
Grossed up yield	9	Volatility in yield to final date	24
Interest yield	11	Volatility to average life	26
Number of days accrued	38	Volatility to equivalent life	25
Optimum yield	10	Volatility to next call	27
Redemption yield	4	Yield to average life	7
Variation - to average life	21	Yield to equivalent life	6
Variation - to equivalent life	20	Yield to final date	5
Variation - to next call	22	Yield to next call	8
Variation	18		
Variation in yield to final date	19		

Redemption related items	item number		
Average life	16	Life to next call	17
Duration	102	Redemption value	94
Equivalent life	15	Yield on equivalent US T-bond	140
Life	13	Yield spread over US T-bond	141
Life to final date	14		

Issue details	
Amount in issue	44
Amount issued	42
Amount issued in $	70
Coupon	43
Issue price	73
Next part payment amount	96

Convertible data

Equivalent conversion price	83
Income difference %	80
Income difference per share	81
Premium/discount %	74

Floating rate data

Current F/R coupon	84

Warrants Data

Exercise price	136
Exercise yield current	134
Gearing	132
Parity	133
Premium/discount current	130

Weighting item/ expression

Price related items	item number		item number
Clean price	2	Gross price	3
Current price	1	Market value	142

Yield related items	item number		item number
Accrued interest	12	Volatility	23
Grossed up yield	9	Volatility in yield to final date	24
Interest yield	11	Volatility to average life	26
Number of days accrued	38	Volatility to equivalent life	25
Optimum yield	10	Volatility to next call	27
Redemption yield	4	Yield to average life	7
Variation - to average life	21	Yield to equivalent life	6
Variation - to equivalent life	20	Yield to final date	5
Variation - to next call	22	Yield to next call	8
Variation	18		
Variation in yield to final date	19		

Redemption related items	item number		item number
Average life	16	Next purchase fund amount	92
Duration	102	Next sinking fund amount	143
Equivalent life	15	Nr. of capital repayments/year	72
Life	13	Redemption value	94
Life to final date	14	Yield on equival. US T-bond	140
Life to next call	17	Yield spread over US T-bond	141

Issue details	item number		item number
Amount in issue	44	Issue price	73
Amount issued	42	Next part payment amount	96
Amount issued in $	70	Nominal value	93
Coupon	43	Number of coupons/year	45

Convertible data	item number		item number
Conversion exchange rate	97	Income difference %	80
Conversion price	82	Income difference per share	81
Conversion rate	105	Premium/discount %	74
Equity price for convertible	144	Premium/discount per share	77
Equivalent conversion price	83		

Floating rate	item number
Current F/R coupon	84
Minimum F/R coupon	85

Warrants data	item number		item number
Exercise price	136	No. of stocks	128
Fixed exchange rate	129		

Equity warrants data	item number
Bond price for warrants	146

Bond warrants data

Equity price	145
Exercise yield current	134
Gearing	132
Parity	133
Premium/discount current	130

Report currency

Argentine Peso	**AP**	Luxembourg Franc	LF
Australian Dollar	A$	Malawi Kwacha	MK
Austrian Shilling	AS	Malaysian Dollar	M$
Bahamian Dollar	B$	Maltese Pound	M£
Bahrain Dinar	BH	Mauritanian Rupee	MR
Belgian Franc (fin)	BF	Mexican Peso	MP
Bermudan Dollar	BD	N.Z. Dollar	Z$
Bolivian Peso	BP	Norwegian Krone	NK
Brazilian Cruzeiro	C	Pakistani Rupee	PR
Canadian Dollar	C$	Peruvian Sol	PS
Cayman Is. Dollar	CD	Philippine Peso	PP
Chilean Peso	CE	Portuguese Escudo	PE
Colombian Peso	CP	Pounds Sterling	£
Danish Krone	DK	Saudi Riyal	SR
Dutch Florin	FL	Securities Rand	BR
E. Caribbean Dollar	E$	Singapore Dollar	S$
Eur. Composite Unit	EC	South African Rand (fin)	R
European Currency Unit	CU	Spanish Peseta	P
Euro. Unit of Account	EU	Special Drawing Right	SD
Finnish Markka	M	Sri Lankan Rupee	CR
French Franc	FF	Swedish Krone	SK
Greek Drachma	DR	Swiss Franc	SF
Hong Kong Dollar	K$	Tanzanian Shilling	TS
Icelandic Krone	IK	Thai Bhat	TB
Indian Rupee	IR	Trinidad & Tobago $	T$
Indonesian Rupee	RI	Turkish Lire	TL
Iranian Riyal	RR	U.A.E. Dirham	ED
Irish Punt	£L	U.S. Dollar	U$
Israeli Shekel	I$	Uruguayan Peso	UP
Italian Lire	L	Venezuelan Bolivar	VB
Jamaican Dollar	J$	West German Mark	DM
Japanese Yen	Y	West Indian Dollar	W$
Kenyan Shilling	KS	Yugoslav Dinar	YD
Kuwaiti Dinar	KD	Zambian Kwacha	K
Lebanese Pound	L£	Zimbabwe Dollar	R$

Geographical codes

The following country groups may be used:

AFR	Africa	EEC	European Economic Community
ASA	Asia	EUR	Europe
AUS	Australia	INT	International
BNL	Benelux	MEA	Middle East
CAM	Central America	NAM	North America
CAR	Caribbean	SAM	South America
COM	Comecon	SCN	Scandinavia

Currency sensitive items

The following data items will have their values converted to the specified report currency using the latest available exchange rates.

Accrued interest	28	Market value	143
Amount in issue	73	Next call value	42
Amount issued	44	Next drawing value	35
Bond price for warrant	146	Next part payment value	133
Clean price	3	Next purchase fund amount	93
Conversion price	83	Next sinking fund amount	144
Current price	2	Nominal value	94
Equity price for convertible	145	P/d per share	81
Equity price for warrant	146	Parity	136
Equivalent conversion price	92	Redemption value	96
Exercise price	142	12 month price high	29
Gross price	12	12 month price low	33
Income diff. per share	82		
Issue price	77		

Appendix C - Datatypes and data items

Bond index data

Item	Data item	144 progs	144X	Search	145 progs	Datatype	900	301	401
Average coupon						CO	Yes	Yes	Yes
Average duration						DU	Yes	Yes	Yes
Average life						L	Yes	Yes	Yes
Clean price index						CI	Yes	Yes	Yes
Market value						MV	Yes	Yes	Yes
Number of bargains						BG	Yes	Yes	Yes
Number of falls						FS	Yes	Yes	Yes
Number of rises						RS	Yes	Yes	Yes
Number unchanged						UC	Yes	Yes	Yes
Price index						PI	Yes	Yes	Yes
Total return index						RI	Yes	Yes	Yes
Turnover by value						VA	Yes	Yes	Yes
Turnover by volume						VO	Yes	Yes	Yes
XD adjustment						XD	Yes	Yes	Yes

Code

Item	Data item	144 progs	144X	Search	145 progs	Datatype	900	301	401
Mnemonic	59		Yes		Yes	MNEM	Yes		
Common code	179		Yes		Yes				
Interbond code	64		Yes		Yes				
Datastream code	61		Yes		Yes	DSCD	Yes		
ISIN Code	180		Yes		Yes	ISIN	Yes		
Local official code	60		Yes		Yes	LOC	Yes		

Floating rate notes

Item	Data item	144 progs	144X	Search	145 progs	Datatype	900	301	401
Floating rate data	68	Yes							
Discounted margin to maturity	166			Yes	Yes	MAFL	Yes	Yes	Yes
Discounted margin to next call	168			Yes	Yes	MACA	Yes	Yes	Yes
Discounted margin to next put	167			Yes	Yes	MAPU	Yes	Yes	Yes
Estimated coupon	169			Yes	Yes	ECP	Yes		
Floating rate base	86	Yes		Yes	Yes	FRBS	Yes		
Floating rate coupon	84	Yes		Yes	Yes	FRC	Yes		
Funded price	162			Yes	Yes	FP	Yes	Yes	Yes
Maximum floating rate coupon						MXFC	Yes		
Minimum floating rate coupon	85	Yes		Yes	Yes	MNFC	Yes		
Neutral price	161			Yes	Yes	NP	Yes	Yes	Yes
Simple adjusted margin to maturity	163			Yes	Yes	SMFL	Yes	Yes	Yes
Simple adjusted margin to next call	165			Yes	Yes	SMCA	Yes	Yes	Yes
Simple adjusted margin to next put	164			Yes	Yes	SMPU	Yes	Yes	Yes

Issue details

Item	Data item	144 progs	144X	Search	145 progs	Datatype	900	301	401
Amount in issue	44	Yes		Yes	Yes	AOS	Yes		
Amount issued	42			Yes	Yes	AIS	Yes		
Amount issued in US dollars	70	Yes		Yes	Yes	AISD	Yes		
Area of delivery	52	Yes		Yes	Yes				
Area of quotation	51	Yes		Yes	Yes				
Country of guarantor	53	Yes		Yes	Yes				
Coupon	43	Yes		Yes	Yes	C	Yes		
Coupon dates	37	Yes		Yes	Yes	CD	Yes		
Currency	54	Yes		Yes	Yes				
Derivative features	176			Yes	Yes	DRF	Yes		
First interest accrual date	157	Yes		Yes	Yes	FIAD	Yes		
First interest date	30	Yes		Yes	Yes				
First interest payment	31	Yes		Yes	Yes				
Industry group	55	Yes		Yes	Yes	INDC	Yes		
Interest payment type	173			Yes	Yes	INPT	Yes		
Issue date	41	Yes		Yes	Yes	ID	Yes		
Issue price	73	Yes		Yes	Yes				
Last ex-dividend date	40	Yes			Yes				
Lead manager	56	Yes		Yes	Yes	MNGR	Yes		
Market	71	Yes		Yes	Yes	MKT	Yes		
Market sector	99	Yes		Yes	Yes				
Moody’s rating	103	Yes		Yes	Yes	MRT	Yes		
Name of borrower	100			Yes					
Next ex-dividend date	39	Yes		Yes	Yes				
Next part payment amount	96	Yes		Yes	Yes				
Next part payment date	95	Yes			Yes				
Nr of capital repayments per yr	72		Yes	Yes	Yes				
Number of coupons per year	45	Yes		Yes	Yes				
Part payment data	69	Yes							
Standard and Poor’s rating	101	Yes		Yes	Yes	SPRT	Yes		
Stock exchange mnemonic	59	Yes			Yes	LOC	Yes		
Type of guarantee	50	Yes		Yes	Yes				

Price data

Item	Data item	144 progs	144X	Search	145 progs	Datatype	900	301	401
12 month price high	28	Yes		Yes	Yes				
12 month price low	29	Yes		Yes	Yes				
Clean price	2	Yes		Yes	Yes	CP	Yes	Yes	Yes
Convexity to maturity	154	Yes		Yes	Yes	CX	Yes		
Convexity to next call	155	Yes		Yes	Yes	CXNC	Yes		
Gross price	3	Yes		Yes	Yes	GP	Yes		
Market price	1	Yes		Yes	Yes	MP	Yes	Yes	Yes
Market value	142				Yes	MV	Yes		
Nominal value	93	Yes			Yes	NOMV	Yes		

Redemption data

Item	Data item	144 progs	144X	Search	145 progs	Datatype	900	301	401
Amortisation	174			Yes	Yes	AMOR	Yes		
Average life	16	Yes		Yes	Yes	LFAV	Yes	Yes	Yes
Call notice	36	Yes		Yes	Yes				
Call schedule	65	Yes				CALS	Yes		
Duration	102	Yes		Yes	Yes	DU	Yes	Yes	Yes
Duration to final life						DUFL	Yes	Yes	Yes
Duration to next call	147	Yes		Yes	Yes	DUCA	Yes	Yes	Yes
Equivalent life	15	Yes		Yes	Yes	LFEQ	Yes	Yes	Yes
First purchase fund amount	90	Yes		Yes	Yes				
First purchase fund date	89	Yes		Yes	Yes				
First sinking fund amount	88	Yes		Yes	Yes				
First sinking fund date	87	Yes		Yes	Yes				
Life	13	Yes		Yes	Yes	LF	Yes	Yes	Yes
Life at issue	181	Yes		Yes	Yes	LFIS	Yes		
Life to final date	14	Yes		Yes	Yes	LFFL	Yes	Yes	Yes
Life to next call	17	Yes		Yes	Yes	LFCA	Yes	Yes	Yes
Modified duration						DM	Yes	Yes	Yes
Modified duration to maturity	152	Yes		Yes	Yes	DMFL	Yes	Yes	Yes
Modified duration to next call	153	Yes		Yes	Yes	DMCA	Yes	Yes	Yes
Next call date	34			Yes	Yes	NCD	Yes		
Next call value	35			Yes	Yes				
Next purchase fund amount	92				Yes				
Next purchase fund date	91			Yes	Yes	NPD	Yes		
Next put date	177			Yes	Yes	NXPD	Yes		
Next put value	178			Yes	Yes	NXPV	Yes		
Next sinking fund amount	143				Yes				
Optional redemption features	175			Yes	Yes	OPRF	Yes		
Redemption dates	58	Yes		Yes	Yes	RD	Yes		
Redemption schedule	66	Yes				REDS	Yes		
Redemption value	94	Yes		Yes	Yes	RV	Yes		
Redemption yield	4	Yes		Yes	Yes	RY	Yes	Yes	Yes

Convertible data

Item	Data item	144 progs	144X	Search	145 progs	Datatype	900	301	401
Convertible data	67	Yes							
12 month premium/discount % high	75	Yes		Yes	Yes				
12 month premium/discount % low	76	Yes		Yes	Yes				
12 mon. prem./discount per share high	78	Yes			Yes				
12 mon. prem./discount per share low	79	Yes			Yes				
Amount in issue & market value		118				Yes			
Assumed conversion & income difference per share	114				Yes				
Assumed conversion date	107				Yes				
Cheap/dear % current	108				Yes				
Cheap/dear % current & 12 mon.range	115				Yes				
Conversion exchange rate	97				Yes				
Conversion period	104				Yes	DRPE	Yes		
Conversion price	82			Yes	Yes	DRPR	Yes		
Conversion rate	105				Yes	DRPR	Yes		
Convertible parity price	160			Yes	Yes	PAR			
Current exchange rate	98				Yes				
Equity price for convertible	144				Yes	CNIP	Yes		
Equivalent conversion price	83			Yes	Yes	EQCP	Yes		
Income difference %	80			Yes	Yes				
Income difference per share	81			Yes	Yes				
Interest and dividend yield	113				Yes				
Market value of underlying equity	119				.Yes				
Next conversion date	111			Yes	Yes				
Premium/ Discount	74			Yes	Yes	PD	Yes		
Premium/discount % 12 month range	106				Yes				
Premium/discount per share	77				Yes				
Redemption yield and PER	116				Yes				

Warrant data

Item	Data item	144 progs	144X	Search	145 progs	Datatype	900	301	401
Warrant data	120								
Amount in issue, & div. yield	122				Yes				
Amount in issue and exercise yield	125				Yes				
Bond price for bond warrant	146				Yes	CNIP	Yes		
Equity price for equity warrant	145				Yes	CNIP	Yes		
Exercise period	137				Yes	DRPE	Yes		
Exercise period & interest yield	126				Yes				
Exercise period & number of stocks	139				Yes				
Exercise period and PER	123				Yes				
Exercise period start & end dates		121				Yes	DRPE	Yes	
Exercise price	136				Yes	DRPR	Yes		
Exercise price & fixed exchange rate	138				Yes				
Exercise yield	134			Yes	Yes	XY	Yes	Yes	Yes
Exercise yield 12 month range	135				Yes				
Exercise yield and 12 month range	127				Yes				
Fixed exchange rate	129				Yes				
Gearing	132				Yes	GR	Yes		
Number of stocks	128				Yes	NOS	Yes		
Parity	133				Yes	PAR	Yes		
Premium/discount	130			Yes	Yes	PD	Yes	Yes	Yes
Premium/discount 12 month ange	131								
Prem/discount current & 12 mon.range	124								

Yield data

Item	Data item	144 progs	144X	Search	145 progs	Datatype	900	301	401
Accrued interest	12			Yes	Yes	AC	Yes		
Convexity	154			Yes	Yes	CX	Yes		
Convexity to next call	155	Yes		Yes	Yes	CXNC	Yes		
Estimated coupon	169			Yes	Yes	ECP	Yes		
Grossed up yield	9	Yes			Yes				
Interest yield	11	Yes		Yes	Yes	IY	Yes	Yes	
Japanese simple yield	156	Yes		Yes	Yes	JS	Yes	Yes	
Next drawing date	32	Yes		Yes	Yes	NDD	Yes		
Next drawing value	33	Yes			Yes				
Number of days accrued	38	Yes		Yes	Yes	NDAC	Yes		
Optimum yield	10	Yes			Yes		Yes		
Redemption yield	4	Yes		Yes	Yes	RY	Yes	Yes	
Spread over 300A expression	172				Yes	SPEX	Yes		
Spread over constant maturity	170				Yes	SPCM	Yes		
Spread over equivalent US T-bond	140			Yes	Yes				
Spread over stored yield curve	171				Yes	SPYC	Yes		Yes
Spread over US T-bonds	141			Yes	Yes	SP	Yes		Yes
Variation	18	Yes		Yes	Yes				
Variation in yield to final date	19	Yes		Yes	Yes				
Variation to average life	21	Yes		Yes	Yes				
Variation to equivalent life	20	Yes		Yes	Yes				
Variation to next call	22	Yes		Yes	Yes				
Variation to next put	159	Yes		Yes	Yes				
Volatility	23	Yes		Yes	Yes				
Volatility to average life	26	Yes		Yes	Yes				
Volatility to equivalent life	25	Yes		Yes	Yes				
Volatility to final date	24	Yes		Yes	Yes				
Volatility to next call	27	Yes		Yes	Yes				
Yield to duration to maturity	148	Yes		Yes	Yes	RYDU	Yes	Yes	Yes
Yield to duration to next call	149	Yes		Yes	Yes	RYDUCA	Yes	Yes	Yes
Yield to equivalent life	6	Yes		Yes	Yes	RYEQ	Yes	Yes	Yes
Yield to modified duration to next call	151	Yes		Yes	Yes	RYDMCA	Yes	Yes	Yes
Yield to modified duration to maturity	150	Yes		Yes	Yes	RYDMFL	Yes	Yes	Yes
Yield to next put	158	Yes		Yes	Yes	RYPU	Yes	Yes	Yes

Appendix D - Bond lists

The following bond lists have been created by Datastream and are available for use on the 145 programs, 401 programs and 301 programs where lists can be used.

These lists are available on Code Lookup. They can also be accessed at the Datastream prompt when you type **HELP FILI?**.

Domestic Government Lists

Germany	
BUNDAN	Anleihen (Bunds)
BUNDBO	Bundesobligationen
BUNDSW	Schatzanweisungen (Kassen)
BUNDUQ	Unquoted (BSB, FS)
BAHN	Railways
POST	Post Office

Others	
AUGVT	Australia
OEGVT	Austria
BGGVT	Belgium
CNGVT	Canada
DKGVT	Denmark
IRGVT	Eire
FRGVT	France
FRBTAN	France BTAN's
FRGVTS	France strips

United Kingdom	
GILTS	All gilts
GILTSS	Gilts - short dated
GILTSM	Gilts - medium dated
GILTSL	Gilts - long dated
GILTSU	Gilts - undated
UKGVT	Gilts - excl. index linked
UKIXL	Gilts - index linked

ITLSEC	Italy top traded securities
ITGVT	Italy other government
JPGVT	Japan
LXGVT	Luxembourgs
NLGVT	Netherlands
NLGVTS	Netherlands strips
NZGVT	New Zealand
ESGVT	Spain
ESSGVT	Spain (zero coupon)
SDGVT	Sweden
SWGVT	Switzerland
USGVT	United States
USTBIL	United States Treasury Bills

Domestic Lists

Australia

AUGVT	Government	AUSEMI	Semi-government

Austria

OEGVT	Government	OEIND	Industrial and Financial
OEHYP1	Hypobanks 'Land'	OEPUB	Public authority
OEHYP2	Hypobanks other	OEFRN	Floating Rate Bonds

Belgium

BGGVT	Government	BGIND	Industrial
BGGG	Government guaranteed	BGCV	Convertibles
BGSUPR	Supranationals	BGWTS	Warrants
BGOTH	Other		

Canada

CNALL	All domestic bonds	**CNCORP**	Corporate
CNGVT	Government	CNPROV	Provincial

Denmark

DKGVT	Government	DKOTHR	Other (incl. public agencies)
DKMGE1	Mortgage credit assoc.(A-J)	DKSPEC	Special loans(incl. corp)
DKMGE2	Mortgage credit assoc.(K-Z)		

Finland

FNALL	All domestic bonds

France

FRBTAN	France BTAN's	FRFRN	Floating Rate Bonds
FRGVT	Government	FRIND	Private sector - industrial
FRGVTS	Strips	**FRCV**	Convertibles
FRPUB	Public (incl. semi-public)	FRSUPR	Supranationals
FRFIN	Private sector - financial	FRWTS	Warrants

Germany

German government

BAHN	Bundesbahn	BUNDSW	Schatzanweisungen
BUNDAN	Anleihen	BUNDUQ	Unquoted
BUNDBO	Bundesobligationen	POST	Bundespost

German states

L&KOM	All German states

Special loans institutions

SONDI1	Special loans A to H	SONDI2	Special loans I to Z

Mortgage banks

HYPB1	Other mortgage banks A to B	HYPB9	Dt. Centralboden.
HYPB2	Other mortgage banks C to H	HYPB10	Dt. Gnsh. Hypbk.
HYPB3	Other mortgage banks I to N	HYPB11	Dt. Hypbk. Ff.
HYPB4	Other mortgage banks O to S	HYPB12	Depfa Bank
HYPB5	Other mortgage banks T to Z	HYPB13	Ffur. Hypbk.
HYPB6	Bayer. Handbk.	HYPB14	Rhein Hypbk.
HYPB7	Bayer. Hyptk. Wbk.	HYPB15	Suddt. Bokrbk
HYPB8	Bayer. Vereinsbk.	HYPB16	Westfl. Hypbk.

Miscellaneous

INDOB	All Industrial issues	KRST1	Krstsp and Stkrsp
BDFRN	All floaters and hybrids	RAIF1	Raifbk, Raifvb and Vbraif

Landesbanks

LBANK1	Bayerische to Bremer. Lb.	LBANK4	Nord Lb. to Oldenbg. Lb.
LBANK2	Hamburgische to Hohenzoll. Lb.	LBANK5	Suedwest. Lb.
LBANK3	Lb. Bl. to Lb. Schlesw. Hst.	LBANK6	Westdeutsche Lb.

Volksbanks

VOLKS1	A to Z Volksbank	VOLKS3	Volksbank N to Z
VOLKS2	Volksbank A to M		

Sparkasse

SPARK1	Sparkasse A to H	SPARK4	Stadtsparkasse K to Z
SPARK2	Sparkasse I to Z	SPARK5	A to Z Sparkasse
SPARK3	Stadtsparkasse A to J		

Kreissparkasse

KRSPK1	Kreissparkasse A to H	KRSPK	Kreissparkasse I to Z

Other banks/financial

GBANK1	Other banks A to B	GBANK3	Other banks G to Z
GBANK2	Other banks C to F		

Hong Kong

HKBND	All - All bonds

Ireland

IRPUB	Public Authorities	IRGVT	Government

Italy

ITGVT	Government	ITLSEC	Top traded securities (govt.)

Japan

JPALL	All	JPGVT	Government (JGBs)
JPCVI	Convertible - industrial	JPCVF	Convertible - financial
JPSAM	Samurai (foreign domestics)	JPWTS	Warrants
JPOTHR	Other issues		

Luxembourg

LXALL	All	LXGG	Government guaranteed
LXGVT	Government	LXOTH	Others

Netherlands

NLALL	All	NLBNG	Bank Ned. Gem
NLBNK	Banks, financial	NLIND	Industrial and Transport
NLHOSP	Hospitals	NLGVT	Government
NLHYP	Hypobanks	NLGVTS	Government strips
NLCV	Convertibles	NLPROV	Provinces
NLNFL	Non Florin	NLINT	International borrowers
NLWTS	Warrants		

New Zealand

NZGVT	Government

Spain

ESGVT	Government	ESMAT	Matador
ESSGVT	Government (zero coupon)		

Switzerland

SWALL	All	SWLOCL	Local authority
SWHYP	Hypobanks	SWIND	Industrials & others
SWGVT	Government	SWKNTL	Kantonalbanks
SWENGY	Energy	SWKANT	Kantone
SWEMZ	Central issuers	SWOPTW/W, X/W, Warrants	
SWFIN	Other financial	SWTRAN	Transport
SWGESC	Merchant banks	SWCV	Convertibles

United Kingdom

GILTS	All government	GILTSS	Gilts - short dated
UKGVT	Government excl. index linked	GILTSM	Gilts - medium dated
UKIXL	Government index linked	GILTSL	Gilts - long dated
UKOSB	Overseas borrowers	GILTSU	Gilts - undated
UKCRP	Corporation and county	UKPUB	Public boards
UKOTH	Other	UKPREF	Preference shares
UKDEBS	Debentures	UKULS	Unsecured loans
UKCONV	Convertibles	UKCVUL	Convertible loans
UKCVPF	Convertible prefs	UKWTS	Warrants
UKZERO	Zero Coupon bonds	UKPIBS	Permanent Interest Bearing securities

United States

USGVT	Government	USAGYUS	Agency bonds
USFIN	Corporate financial	YANKEE	Foreign domestic
USIND	Corporate industrial	USCV	US Convertibles
USFRN	Domestic floating and variable rate notes		

International lists

Currency : U$

U$ - Australia	$AU	U$ - New Zealand	$NZ
U$ - Austria	$OE	U$ - Norway	$NW
U$ - Belgium	$BG	U$ - Other	$OTHR
U$ - Canada	$CN	U$ - Other European	$OTHE
U$ - Denmark	$DK	U$ - Singapore	$SG
U$ - Finland	$FN	U$ - South Africa	$SA
U$ - France	$FR	U$ - Spain	$ES
U$ - Germany	$D	U$ - Supranational	$INT
U$ - Iceland	$IC	U$ - Sweden	$SD
U$ - Ireland	$IR	U$ - Switzerland	$SW
U$ - Italy	$IT	U$ - United Kingdom	$UK
U$ - Japan straights	$JP	U$ - United States	$US
U$ - Japan w/ warrants	$JPWW	U$ - Yugoslavia	$YG
U$ - Japan ex warrants	$JPXW	U$ - Zero Coupons	$ZERO
U$ - Mexico	$MX	U$ - Floating Rates	$FLOAT
U$ - Netherlands	$NL		

Currency : DM

DM - All DM internatls	DMALL	DM - Netherlands	DMNL
DM - Australia	DMAU	DM - New Zealand	DMNZ
DM - Austria	DMOE	DM - Norway	DMNW
DM - Belgium	DMBG	DM - Other	DMOTHR
DM - Canada	DMCN	DM - Other European	DMOTHE
DM - Convertibles	DMCV	DM - Singapore	DMSG
DM - Denmark	DMDK	DM - South Africa	DMSA
DM - Finland	DMFN	DM - Spain	DMES
DM - Floating Rates	DMFLOT	DM - Supranational	DMINT
DM - France	DMFR	DM - Sweden	DMSD
DM - Germany	DMD	DM - Switzerland	DMSW
DM - Iceland	DMIC	DM - United Kingdom	DMUK
DM - Ireland	DMIR	DM - United States	DMUS
DM - Italy	DMIT	DM - Yugoslavia	DMYG
DM - Japan	DMJP	DM - Zero Coupons	DMZERO
DM - Mexico	DMMX		

Currency : SF

SF - Australia	SFAU	SF - Netherlands	SFNL
SF - Austria	SFOE	SF - New Zealand	SFNZ
SF - Belgium	SFBG	SF - Norway	SFNW
SF - Canada	SFCN	SF - Other	SFOTHR
SF - Denmark	SFDK	SF - Other European	SFOTHE
SF - Finland	SFFN	SF - Singapore	SFSG
SF - Floating Rates	SFFLOT	SF - South Africa	SFSA
SF - France	SFFR	SF - Spain	SFES
SF - Germany	SFD	SF - Supranational	SFINT
SF - Iceland	SFIC	SF - Sweden	SFSD
SF - Intern. Convs	SFCV	SF - Switzerland	SFSW
SF - Ireland	SFIR	SF - United Kingdom	SFGB
SF - Italy	SFIT	SF - United States	SFUS
SF - Japan	SFJP	SF - Yugoslavia	SFYG
SF - Mexico	SFMX	SF - Zero Coupons	SFZERO

Miscellaneous

BINTL	Belgian franc international	YANKEE	Yankee issues
BDOG	Bulldog issues	ESMAT	Matador bonds
BTNLD	Dutch florin international	YEN	Euro-yen international
ECU	Euro-Currency Units	FF	French franc international
FL	Euro-Guilders international	LF	Luxembourg franc
£	Euro-sterling international	OTHR	Other internationals
C$	Canadian Dollar international	JPSAM	Samurai bonds
A$	Australian Dollar International	FRNS	All Floating Rate Notes
LIRE	Italian Lire Internationals	HYBRID	Hybrid bonds

International Convertibles

CVALL	All international convertibles	CVOTHR	Other convertibles
CVNL	Dutch convertibles	CVSW	Swiss convertibles
CVFR	French convertibles	CVUK	UK convertibles
CVJP	Japanese convertibles	CVUS	US convertibles

Warrant lists by type

EQWTS	All warrants to purchase equity (excluding covered warrants)
CVDWTS	Covered warrants
BKTWTS	Basket warrants
IDXWTS	Index warrants
COMWTS	Commodity warrants
CURWTS	Currency warrants
OTHWTS	Other warrants (new types and currencies)
BDWTS	Bond warrants
OEWTS	Austrian Schilling warrants
AUWTS	Australian Dollar warrants
BGWTS	Belgian Franc warrants
CNWTS	Canadian Dollar warrants
DMWTS	Deutschemark warrants
NLWTS	Dutch Florin warrants
ECUWTS	ECU warrants
FNWTS	Finnish Markka warrants

FRWTS	French Franc warrants
HKWTS	Hong Kong Dollar warrants
ITWTS	Italian Lire warrants
JPWTS	Japanese Yen Domestic Warrants
MYWTS	Malaysian warrants
SGWTS	Singapore Dollar warrants
ESWTS	Spanish Peseta warrants
SDWTS	Swedish Krona warrants
SWWTS	Swiss Franc Domestic warrants
SFWTS	Swiss Franc International warrants (non Japanese)
SFJPWT	Swiss Franc Japanese International warrants
UKWTS	UK Sterling Domestic & Investment Trust warrants
UK£WTS	UK Sterling International warrants
$JPW	U$ warrants to buy Japanese Equity
USWTS	Other United States Dollar warrants

Domestic Benchmark Bonds

BNCHMK	Various current domestic benchmarks
EXBNCH	Former domestic benchmarks

Private Placement list

Note this list contains all bonds/warrants created on program 300D

PPLIST	List of private placements on this terminal

Recent additions of Bonds and Warrants (added to daily)

Bonds loaded in recent months

Month	Mnemonic	Month	Mnemonic	Month	Mnemonic
January	JANBD	May	MAYBD	Sept.	SEPBD
February	FEBBD	June	JUNBD	October	OCTBD
March	MARBD	July	JULBD	Nov.	NOVBD
April	APRBD	August	AUGBD	Dec.	DECBD

Warrants loaded in recent months

Month	Mnemonic	Month	Mnemonic	Month	Mnemonic
January	JANWT	May	MAYWT	Sept.	SEPWT
February	FEBWT	June	JUNWT	October	OCTWT
March	MARWT	July	JULWT	Nov.	NOVWT
April	APRWT	August	AUGWT	Dec.	DECWT

International Convertibles

CVALL	All international convertibles

International convertibles from:

CVUK	UK borrowers
CVUS	US borrowers
CVFR	French borrowers
CVSW	Swiss borrowers
CVNL	Dutch borrowers
CVJP	Japanese borrowers
CVOTHR	Other international convertibles

Domestic Convertibles

BGCV	Belgian domestic convertibles
FRCV	French domestic convertibles
JPCVI	Japanese domestic convertibles from industrial companies
JPCVF	Japanese domestic convertibles from financial companies
NLCV	Dutch domestic convertibles
SWCV	Swiss domestic convertibles
UKCONV	UK domestic convertibles (prefs and stocks)
UKCVPF	UK domestic convertible preference shares
UKCVUL	UK domestic convertible loan stocks
USCV	US domestic convertibles

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