PNC3 Vision
User Manual

Book 2

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Tunstall Group PLC, Whitley Lodge, Whitley Bridge, Yorkshire, DN14 0HR.
Telephone: +44 (0) 1977-66 1234
Internet: http://www.tunstallgroup.com/

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1 An introduction to Management Reports

This chapter firstly deals with the question of why you should use management reports, as well as the related issue of 'what are management reports?' Following this there is a brief explanation of the word 'statistics', before the different types of management report are introduced. The steps necessary to prepare Vision for using Management Reports are then explained, in particular setting the date and shift patterns for the reports.

Why use Management Reports?

As the name suggests, the Management Reports facility within Vision provides the type of information that someone who manages a control centre needs. The sorts of questions a control centre manager might be asked are answered, such as:

- How many calls came into the centre last week, last month and last year, and which operator handled which call?
- How quickly are operators responding to calls?
- What were the main reasons for calls?
- What were the most common actions taken in response to a call?
- How were calls triggered (integral button, radio trigger, smoke alarm, etc.)?
- Which residents have not contacted the control centre in the last two months, and which residents have not tested their radio trigger recently?
- Which dispersed and scheme identification numbers remain unused?
- What is the number of schemes connected to the control centre, and to which authorities do they belong?
- Can you show the number of residents who use the control centre, and break the figures down by the type of heating their house or flat possesses?
- How many residents have the keywords 'heart problems' and 'diabetes', and can you group them by the town in which they live?
- What percentage of residents have characteristics that show they have day-time access to a warden?
- What is the trend over time: in the number of dispersed dwellings using the control centre; in the number of calls the control centre is receiving; in the time it takes operators to answer a call; in the length of time each calls takes?

Accurate Management Information. Management Reports help a control centre manager or administrator to predict trends, to provide accurate information on how their centre is running, and to

identify possible problems before they arise. For example, the line utilization report shows how many lines were in use at the same time. If you can see that for a proportion of the time all lines are busy, and that the volume of calls to the centre is continuing to grow, you know that extra telephone lines need to be installed.

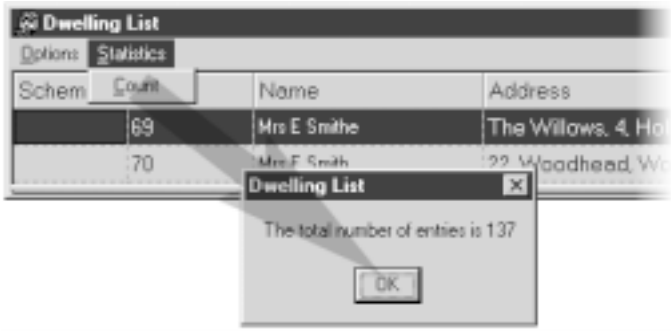


Figure 1.1. Simple statistics can be obtained from ordinary searches within Vision.

Easy to use. While the Management Reports software is powerful and sophisticated, the interface controls you see are straightforward. In addition, the facilities within Management Reports have been honed over a series of releases to match the needs of a busy manager.

Powerful. Although straightforward to use, the Management Reports that are part of Vision have been refined to allow analyses to be grouped. For example, an analysis of call reasons can be grouped by Authority. In other words, you will be shown an analysis for each and every Authority you select - you do not have to repeat the analysis for each and every Authority as you do within some competitor systems.

Convenient. Once you have decided upon the reports you wish to receive you can save their criteria. In other words, next time you wish to receive the report you do not need to enter all of the criteria again, you can just select the entries you made last time.

More like an assistant than a piece of software. Reports can be set up to run automatically, either daily, weekly or monthly. This means that the weekly report you need can be waiting for you, run and printed to your specification, every week without any effort on your part. Moreover, the computer will undertake this hard work at a time you specify, such as 1am. In this way your computer is free for other tasks during the day.

What are Management Reports?

The first section suggested why you should use Management Reports. This section provides a brief overview of the facilities Management Reports provide.

Various statistics can be obtained from Vision without using the Management Reports. For example, searching for all dispersed dwellings (see Chapter 8 from Volume A) will produce a list of all dispersed dwellings. By selecting Count from the Statistics menu (see figure 1.1) the total number of dispersed dwellings will be displayed. Indeed, these simple row counts are the means by which some systems provide their management information. The Management Reports facility within Vision, however, can do a great deal more.

What happens when? Almost all of the Management reports begin with a search window of some sort. This is where the various criteria for the report are entered, such as ‘all calls between the beginning of March and the end of March’. The report is then either displayed in a window, or sent to a printer, or even presented in a print preview window (see figure 1.2).

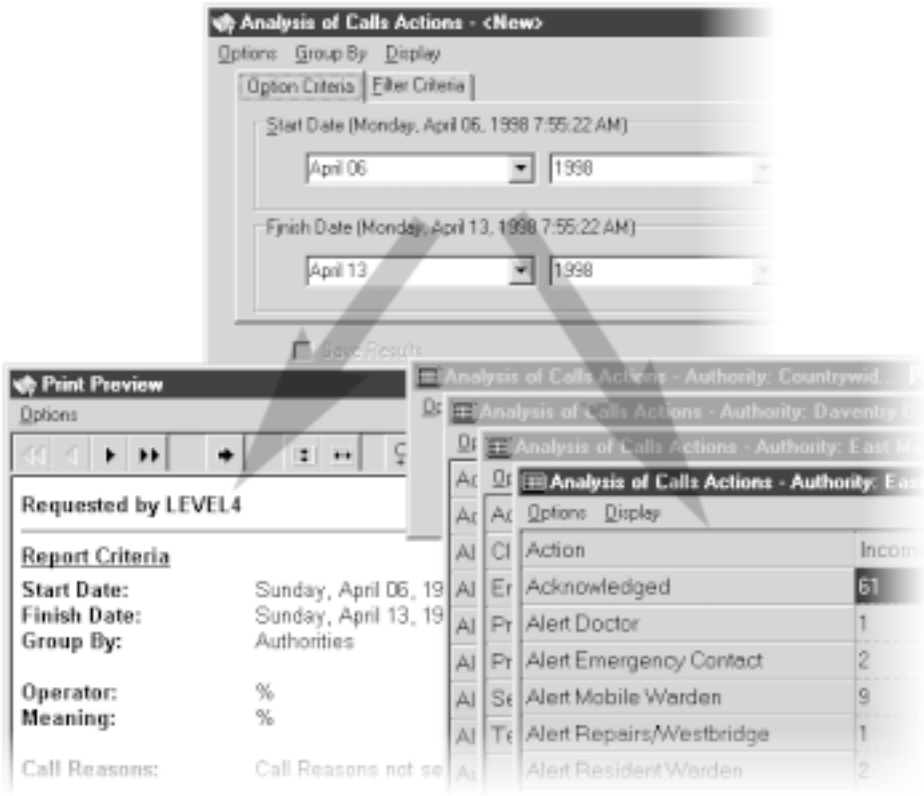


Figure 1.2. Report results can be displayed or printed.

Saving report criteria that can be run automatically. Once search criteria for a report have been entered they can be saved, just as search criteria for a normal search can be saved. A set of criteria can then be used to easily run a report at any time again in the future. In addition, however, a saved set of criteria can also be used to run the report automatically every so often (i.e. every day, week or month, etc.)

Relative dates. One difference between normal searches and the searches used for Management reports is the way in which dates can be set. For example, in a normal search you can specify a date of 1 March 1999. However, if you want to run a report every week this date is of little use. Every week your report will run, but on each occasion the date used will be the 1 March 1999. In other words, every week you will get exactly the same report - the report on calls for the 1 March 1999.

To address this problem the Management Reports search windows allow you to set relative dates, such as Yesterday, Last Week and Last Month. In this way your weekly report will report findings from last week, not the same week in March every time it is run.

Trends. Reports that are set to run automatically can be used to provide information on trends. For example, you might wish to create a report to show the response times for answering calls over a seven day period. You might also wish to set the report to run automatically every week. As a consequence, you will end up with results on response times for every week, and this information can be used in the trend analysis component of Management Reports to show how response times have increased or decreased over the time period you choose to look at (see figure 1.3).

Statistics

The term statistics immediately creates an impression of confusing and even misleading mathematics. After all, it was a politician who said that there were lies, dam lies and then (even worse) statistics. Of course, statistics can be used to mislead and deceive. However, a well-run control centre needs accurate information, and simple statistical analyses can be used to provide this information. The information provided by the Vision Management Reports is simple, reliable and accurate. However, before we progress any further it might be useful to consider some of the facts and myths surrounding statistics.

What are statistics?

The Concise Oxford Dictionary defines statistics as, '...any systematic collection or presentation of such fact.' For example, imagine that your control centre was called 27 times on Tuesday and 34 times on Wednesday. These numbers are statistics - there is nothing special or mystical about a statistic - statistics are just numbers, nothing more. The statistics provided by the Vision Management Reports are of just this sort - they are straightforward numbers, such as how many residents called and how many dispersed dwellings are recorded in the database.

But statistics are used to deceive people, so how can I rely upon them?

It is often said that clever mathematicians can use statistics to show anything they want. In truth, almost all deceptions using statistics are crude and relatively easy to identify. For example, imagine that two companies, one called Honest Properties and another called Crooked Creations, both build the same number of office blocks. Honest Properties made 100,000 pounds profit last year, and 110,000 pounds profit this year. In other words profits have increased by 10,000 pounds. Crooked Properties made just 3,000 pounds profit last year after its many difficulties with bad building, but increased its profit to 12,000 pounds this year. Crooked Properties has increased its profits by 9,000 pounds, while Honest Properties has increased its profits by 10,000 pounds. As an investor you would obviously prefer the more profitable Honest Properties to the struggling Crooked Properties.

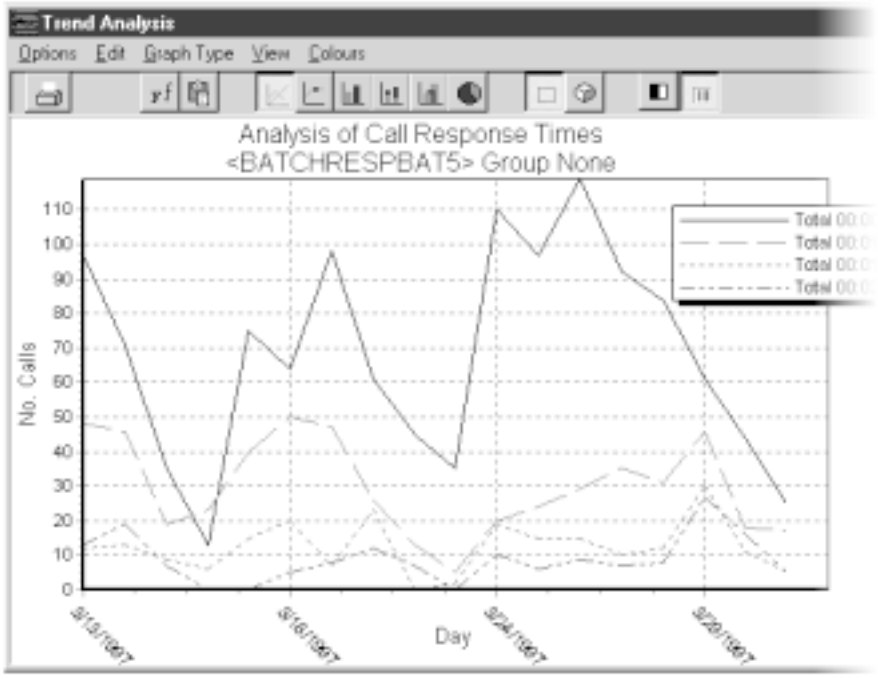


Figure 1.3. A trend analysis showing the changes in response times over a period of weeks.

Yet, the advertisement to investors for Crooked Properties said that its profits had gone up 300 percent, while Honest Properties only increased its profits by 10 percent. This is clearly misleading as it neglects to mention that Crooked Properties made such an appallingly low profit last year. Statistics are misleading when incomplete information is used - when the starting point for the measurement is not the same. This is a bit like saying that you beat the Olympic 100m running champion, but neglecting to mention that you started 20 seconds before he or she started running.

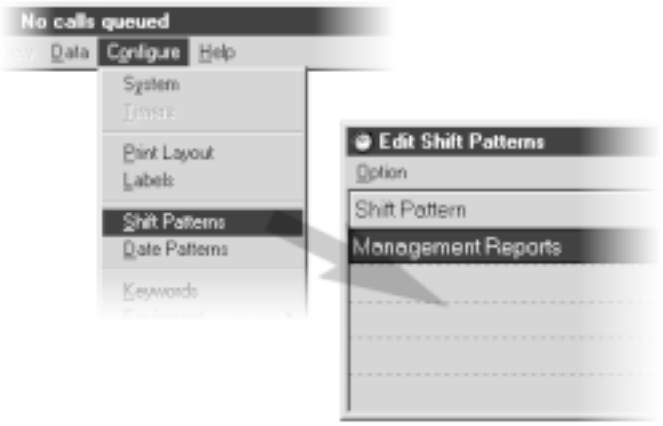


Figure 1.4. A number of the management reports rely upon the shift and date patterns called Management Reports.

As mentioned above, the statistics provided by PNC3 Vision are presented as straightforward numbers in a practical format that supports everyday management functions, and so you do not need to worry about the problem of misleading statistics. If you compare call response times from one week to the next you will be comparing the same numbers, and you do not need to be concerned that the figures could be misleading or inaccurate.

Types of Management Reports

There are three types of management report:

- system usage and analysis;
- calls analysis;
- data analysis.

The system usage and analysis reports deal with a variety of issues, such as the state of the database, the use of the telephone lines, unused identification numbers, etc. The calls analysis reports deal with information in calls history, and can answer questions such as, ‘how many calls are answered in under 10 seconds, under 20 seconds...etc?’ The data analysis reports deal with analysing residents, dwellings and schemes amongst other things. They can be used to answer questions such as, ‘how many residents have high blood pressure?’

Each of these types of report will be dealt with in the following chapters. However, before you can use Management Reports you will first need to configure Vision with the correct date and shift information.

Setting the date and shift periods

Before you run some reports, particularly reports involving calls and call handling, you need to set the date pattern and the shift pattern for the operators in your control centre. Specifically, you should set the patterns named Management Reports (see figure 1.4). This is dealt with in more detail in Chapter 2 of Volume C of this manual. If you do not set the shift and date patterns to match those used within your control centre then the information in a number of different reports will be inaccurate.

2 Creating a Management Report

The outline process of creating a report is explained. Next, the process of creating just one report is followed through to illustrate the few steps involved. The four reports that deal with call timings are then distinguished, as their apparent similarity can sometimes cause confusion. Finally, the steps involved in grouping an analysis and saving report criteria are dealt with.

First steps

To create a management report select Management Reports from the Data menu and the window shown in figure 2.1 will appear. This window shows all of the available management reports. You can open a report by double-clicking on its name in this window. Alternatively, you can select the report name and choose Report from the Options menu (see figure 2.2). If you forget which report performs which function then you can click on the name of a report and select Details from the Options menu for more information.

An example report: Line Utilization Analysis

We will deal with Line Utilization Analysis report in a little more detail in the next chapter. For the moment, we step through the process of creating this report as an illustration of what is required.

Once the list of management reports is displayed (see figure 2.1), you can double-click on Line Utilization Analysis, which is the last report on the list. You will be presented with the window shown in figure 2.3. Here you can enter the start and

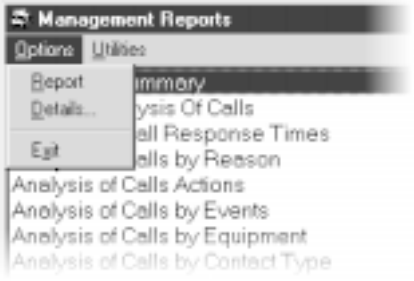


Figure 2.2. Information for each report can be found by clicking on the report name and selecting Details from the Options menu.

Figure 2.1. All of the available management reports are to be found in this window.

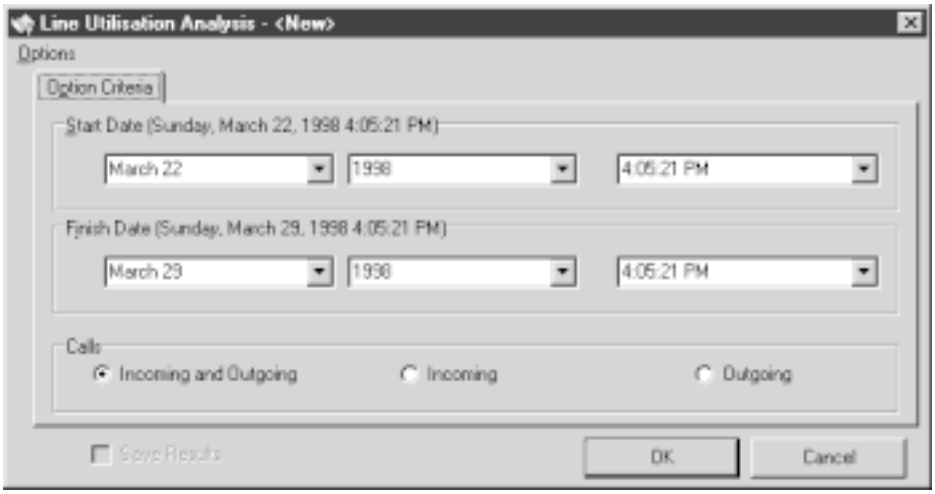
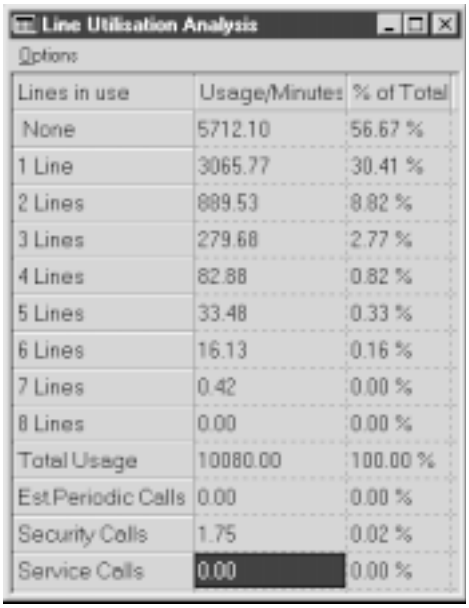


Figure 2.3. With just one exception, all reports start with a window where you enter the criteria for the report, such as a start and end date for analysis.

end date for the analysis, as well as the start and end times. You can see in figure 2.3 that the start date and time is five minutes past four in the afternoon on 22 March 1998, while the end date is five minutes past four on 29 March 1998. In other words, line utilization is being examined for a period of one week.

Figure 2.4. Before producing a report Vision will check to see if you want to save the criteria you have just entered.

Once you press the OK button in the Line Utilization Analysis window (see figure 2.3) your computer will first ask whether you want to save the criteria you have just entered (see figure 2.4), and will then ask the database for the relevant information, before a window appears showing the results (see figure 2.5). As you will see, the analysis shows that for 56% of the time no lines were in use. Just one line was in use for 30% of the time, while two lines were in use for 8% of the time. As mentioned earlier, the Line Utilization Analysis will be dealt with in more detail in the next chapter. For the moment you can see that running a report is a relatively simple process. You select your report, enter the start and end dates for the analysis and then press the OK button.



Lines in use	Usage/Minutes	% of Total
None	5712.10	56.67 %
1 Line	3065.77	30.41 %
2 Lines	889.53	8.82 %
3 Lines	279.68	2.77 %
4 Lines	82.88	0.82 %
5 Lines	33.48	0.33 %
6 Lines	16.13	0.16 %
7 Lines	0.42	0.00 %
8 Lines	0.00	0.00 %
Total Usage	10080.00	100.00 %
Est.Periodic Calls	0.00	0.00 %
Security Calls	1.75	0.02 %
Service Calls	0.00	0.00 %

Figure 2.5. The results of an analysis can be either printed or displayed in a window, as they are above.

Calls, timings and confusions

The Line Utilization report is different from the General Analysis of Calls, Analysis of Call Response Times, and the Call Duration Analysis reports. Each answers a different question, as you can see from figure 2.6.

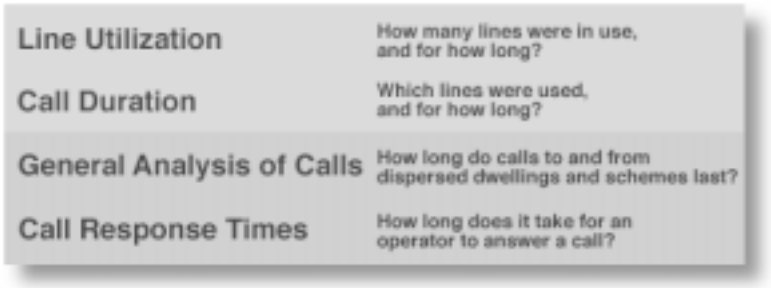


Figure 2.6. The different types of call reports address different questions. The first two are aimed at providing information on how the Vision system you have is coping with the calls that are received or being made. The second two pr;style

Line Utilization Analysis. This shows you how many lines were in use at different times. It is used to see whether the number of telephones lines you have is sufficient for the numbers of calls you are receiving.

Call Duration Analysis. This report shows you how long calls are taking, broken down telephone line by telephone line. It tells you how the Vision system is being used, but does not tell you which operators took or made which calls.

General Analysis of Calls. This tells you how long each call lasted. It can show an analysis grouped by operator, so you can see whether some operators are on the telephone to residents longer than others.

Analysis of Call Response Times. This shows you how long it takes the operator to pick up the telephone and answer a call. In other words, it tells you how long each call is waiting before it is dealt with.

As you can see, the first two reports analyse system performance rather than operator performance. The second two reports deal with operator performance rather than the PNC3 Vision system itself. These latter reports are dealt with in the chapter on Calls Analysis.

Grouping, saving report criteria and display

Grouping

Imagine that you are about to use the General Analysis of Calls report to see how longs calls take (this report will be dealt with in more detail in a later chapter - for the moment all you need to know is that it can show you how long calls take). Maybe you deal with several authorities and you believe that the problems residents from some authorities present take much longer to resolve than the issues raised by residents from other authorities. Consequently, you do not need an analysis that looks at how long all calls take, you need an analysis broken down authority by authority. This is where the Group facility can help.

By selecting Authority from the Group menu (see figure 2.8) you will ensure that the analysis is broken down authority by authority. Once you press the OK button shown in figure 2.7 you will be presented with a list of authorities to select from (see figure 2.9). You can select a maximum of

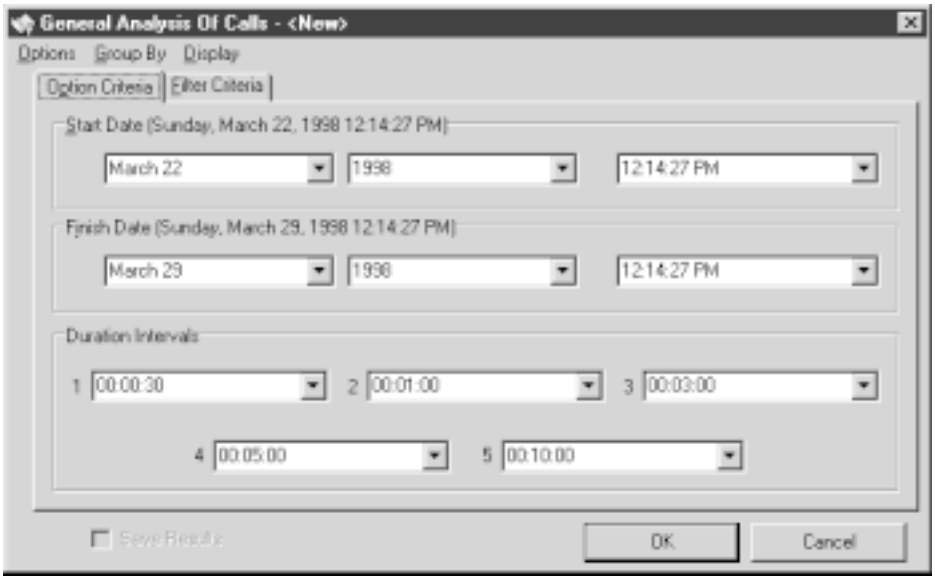


Figure 2.7. The General Analysis of Calls Reports shows you how long calls take to deal with.

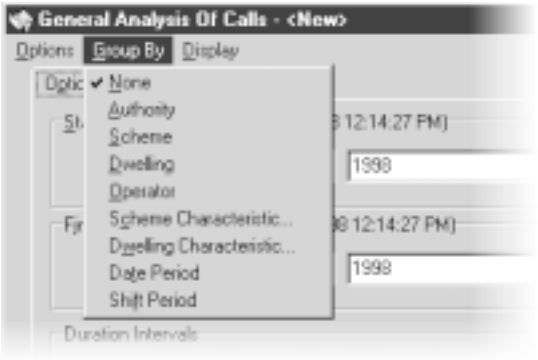


Figure 2.8. The Group menu allows you to select the way in which the data will be broken down.

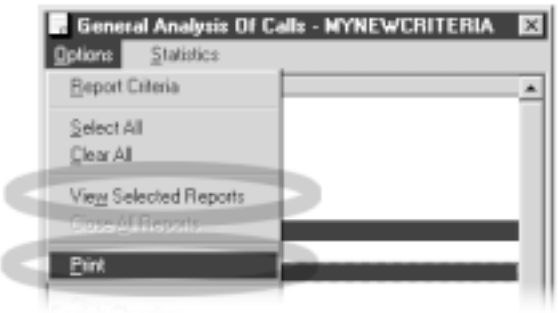
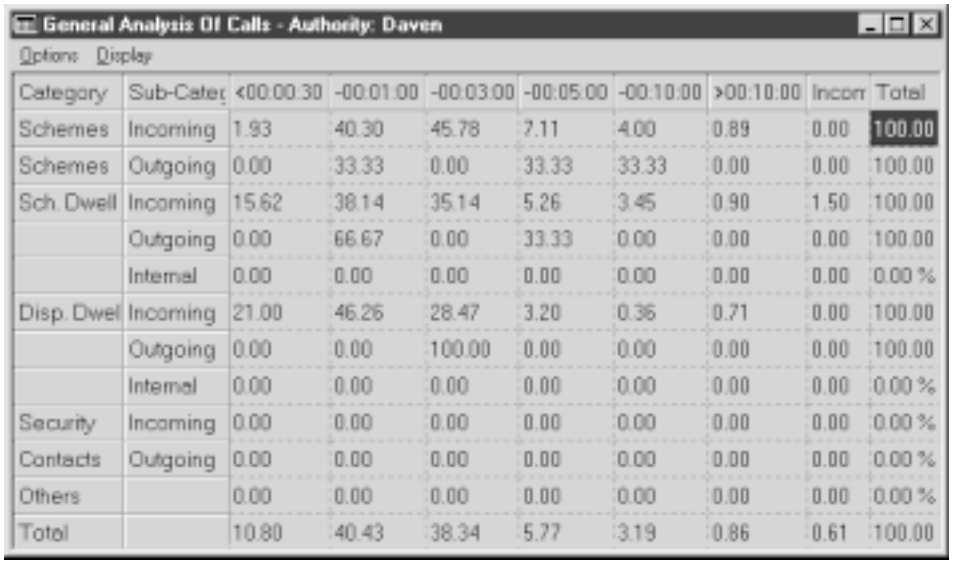


Figure 2.9. This list allows you to select the authorities for which analyses should be performed, and then either display or print the analysis.



Category	Sub-Categ	<00:00:30	-00:01:00	-00:03:00	-00:05:00	-00:10:00	>00:10:00	Incom	Total
Schemes	Incoming	1.93	40.30	45.78	7.11	4.00	0.89	0.00	100.00
Schemes	Outgoing	0.00	33.33	0.00	33.33	33.33	0.00	0.00	100.00
Sch. Dwell	Incoming	15.62	38.14	35.14	5.26	3.45	0.90	1.50	100.00
	Outgoing	0.00	66.67	0.00	33.33	0.00	0.00	0.00	100.00
	Internal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 %
Disp. Dwel	Incoming	21.00	46.26	28.47	3.20	0.36	0.71	0.00	100.00
	Outgoing	0.00	0.00	100.00	0.00	0.00	0.00	0.00	100.00
	Internal	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 %
Security	Incoming	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 %
Contacts	Outgoing	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 %
Others		0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00 %
Total		10.80	40.43	38.34	5.77	3.19	0.86	0.61	100.00

Figure 2.10. The results for each authority will be displayed in their own window.

five groups (a maximum of five authorities in this instance), and the results for each will be displayed in their own window (see figure 2.10). Alternatively, if you choose to print the report rather than display it on screen then there is no maximum number of groups - you can select as many as you wish.

To display the results select View Selected Groups from the Options menu (see figure 2.9). Alternatively, you can select Print. This will not cause the list of groups to print - it will cause the analyses to be performed and the results to be printed.

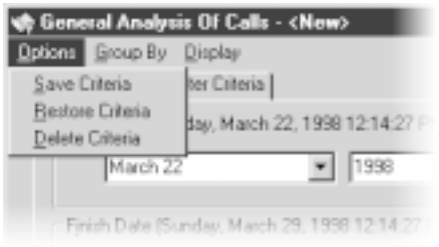


Figure 2.11. The Options menu allows you to save, restore and delete report criteria.

Saving report criteria

As you may appreciate, in asking Vision to compile a management report you set various search criteria. Just as with normal searches, it is possible to use the Options menu (see figure 2.11) to save the criteria for your report for later use. In this way you can restore (retrieve) your criteria next time you want to run the report without having to enter all of the details again.

You may recall from a little earlier that when you group an analysis you press the OK button to start the report, but before it starts you are presented with a list of the groups to select from. If you save your report criteria, and you have also selected a type of information by which to group the analysis, then Vision needs to know your choices of group before it saves the criteria. For this reason there is a Group button in the Save Criteria window (see figure 2.12). If you have not selected anything from the Group menu (see figure 2.8) then the Group button will be dimmed and unavailable, and you can just press OK to save your criteria. However, if you have selected something from the Group menu, such as Authority or Operator, then the Group button will be active, while the OK button will be dimmed and unavailable. The OK button will not be available until you have pressed the Group button and made your selections.

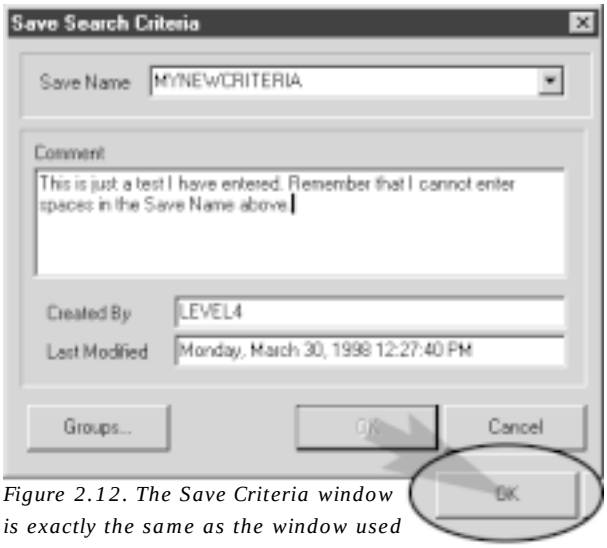


Figure 2.12. The Save Criteria window is exactly the same as the window used for saving search criteria, except that it also has a button called Groups.

Display

Some analysis windows have a menu called Display (see figure 2.13). This menu determines whether the results are displayed as actual figures or whether they are displayed as a percentage. This is, in effect, a feature that is present for convenience only, as it is easy to switch between these two options once the results are presented. This feature becomes more relevant if you save the report criteria for later use. Your display preference will also be saved.

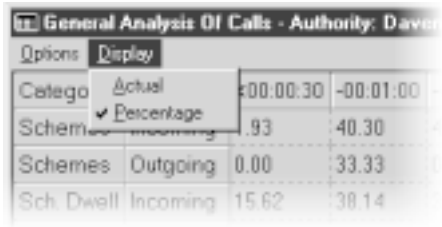


Figure 2.13. The display menu determines whether the results are displayed as a percentage or as the actual figures, and many windows including the Call Duration Analysis and the General Analysis of Calls windows possess this menu.

3 System usage and analysis

This chapter explains the four reports that examine the use and performance of your control centre. The Line Utilization report shows how busy your centre is, in terms of the number of telephone lines in use at any one time. The Call Duration report shows the number of calls per line, as well as the amount of time calls took. The database summary provides an overview of the state of the database, and can be a useful first step when diagnosing problems. The Unused Identity Numbers report shows you which identity numbers remain unused for schemes, dwellings and security diallers.

Line Utilization Analysis

The general process of creating a management report was dealt with inthe last chapter, and the Line Utilization Reports was used to illustrate this process. Here, we will consider the Line Utilization report in a little more detail.

When setting the start and end times and dates for the analysis (see figure 3.1), it is also possible to specify whether the analysis includes all calls, or just incoming calls, or even just outgoing calls. Selecting Incoming and Outgoing calls will provide the best picture of the total load on your system. Selecting just incoming or just outgoing calls will provide some idea of resources devoted to each.

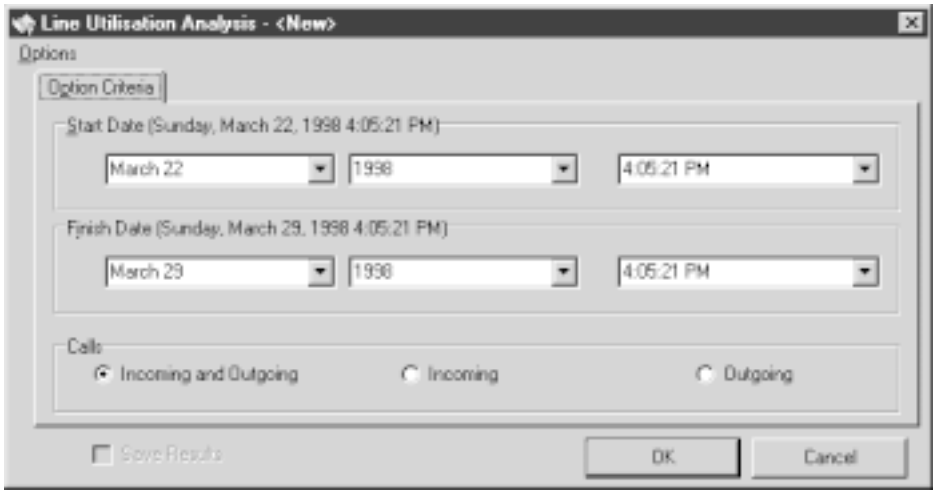
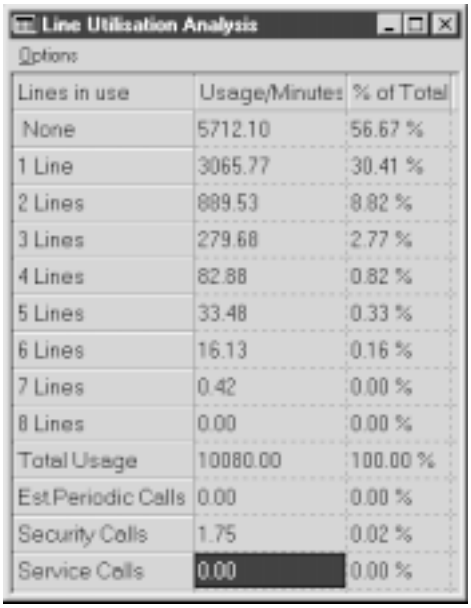


Figure 3.1. It is possible to analyse use according to just incoming or just outgoing calls.

It is important to realize that the results window for the Line Utilization report does not show how long line 1 was in use and how long line 2 was in use, etc. Instead, it shows the amount of time when one line was in use (regardless of which line it was), and the amount of time two lines were in use (again regardless of which two lines were in use), etc.



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6 Lines	16.13	0.16 %
7 Lines	0.42	0.00 %
8 Lines	0.00	0.00 %
Total Usage	10080.00	100.00 %
Est.Periodic Calls	0.00	0.00 %
Security Calls	1.75	0.02 %
Service Calls	0.00	0.00 %

Figure 3.2. The line utilization results show the amount of time that 1, 2, 3, etc. lines were in use, regardless of which lines they were.

Why use Line Utilization Analysis?

As you can see from the analysis shown in figure 3.2, there were two lines in use for 8.8% of the time. Seven lines were in use for less than a minute - such a small amount of time that it does not even show as more than 0.01%. At no time were all eight lines in use, which suggests that there is no need to increase the number of lines coming into this particular control centre.

Security, service and periodic calls

The bottom three rows shown in figure 3.2 show the time the PNC3 Vision spent dealing with calls involving some degree of automation. As periodic calls and service calls are dealt with automatically by Vision you can expect these times to be low. As you may recall, periodic calls are calls made automatically by equipment to the control centre which confirms that the equipment is still working. Service calls are made by service providers, such as meals on wheels, often by pressing a series of keys on a dispersed home communication unit, such as a Lifeline 3000. Security calls are calls from security diallers. These diallers automatically call the control centre when a smoke alarm or movement detector is triggered. However, they end the call (i.e. drop the line) immediately after they have communicated their information. An alarm call from a security dialler might take some time to deal with, but the initial alarm call will not take up much telephone time.

Estimated Periodic Calls

You may notice that the periodic calls row shown in figure 3.2 actually says ‘Est. Periodic Calls’. This stands for estimated periodic calls. You can decide whether periodic calls are stored in calls history, in the database. See Chapter 2 from Volume C for details of how to turn this feature on and off. If periodic calls are stored in the database then the actual time spent handling periodic calls will be calculated. If periodic calls are not stored in the database then the Line Utilization Analysis calculates an estimated time depending upon the number of dispersed units the database expects to call in during the period of the analysis.

A warning about times

All of the reports that calculate time work out the times based upon the time the database became aware that there was a call through to the time when the database was told that the call has ended. There is a small amount of time at the beginning of a call when the LIMs (the Line Input Modules) are communicating with the telephone to find out its details. Once the LIM has done this it tells the database that a call has arrived. Although this delay is small, it is worth bearing it in

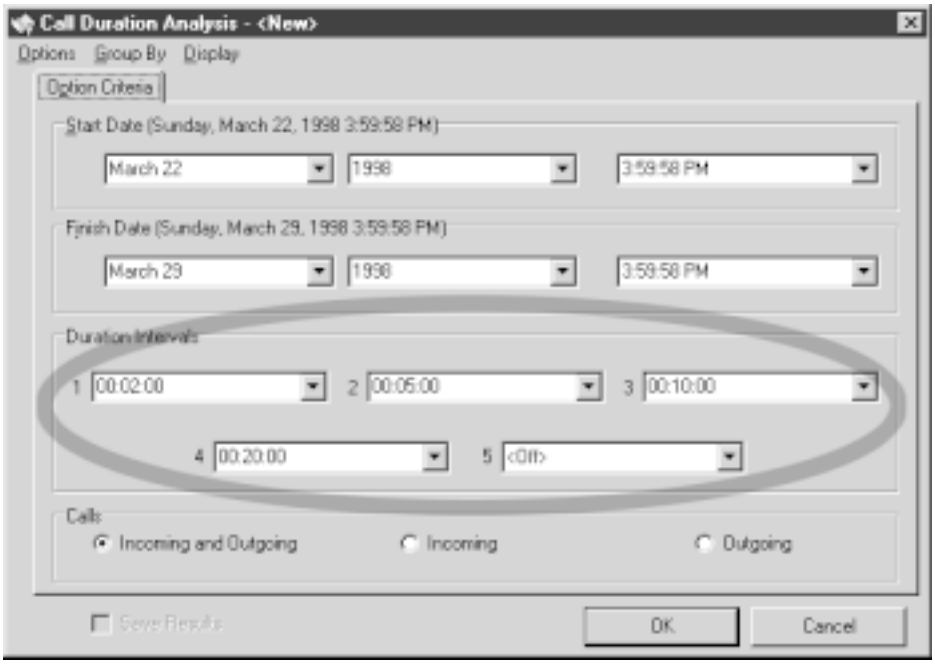


Figure 3.3. The duration intervals here are the same as asking 'how many calls took less than two minutes, how many calls took less than five minutes, etc.'

mind when considering time calculations and averages. In effect, all of the calculated averages are likely to be slightly under the true figure.

Call Duration Analysis

While the Line Utilization Analysis deals only with the number of lines that were occupied, Call Duration Analysis looks at which lines were busy. Specifically, it asks 'how many calls took less than 2 minutes, how many lasted between 2 minutes and 5 minutes, etc.' As you can see from the Call Duration Analysis window (see figure 3.4) it is possible to set the duration intervals for analysis to whatever you wish. The only restriction is that interval 2 must be longer than interval 1, and interval 3 must be longer than interval 2, etc. If you feel unsure as to the differences between

Call Duration Analysis

Options Display

Line	<00:02:00	-00:05:00	-00:10:00	-00:20:00	>00:20:00	Inc	Total	% of Total
Line 1	1433	201	42	11	8	0	1695	49.94 %
Line 2	747	126	32	4	0	0	909	26.78 %
Line 3	320	68	19	3	0	1	411	12.11 %
Line 4	1	0	1	0	0	0	2	0.06 %
Line 5	123	52	4	1	0	0	180	5.30 %
Line 6	32	20	7	1	0	0	60	1.77 %
Line 7	16	16	8	1	0	0	41	1.21 %
Line 8	69	16	4	0	0	0	89	2.62 %
Total	2741	499	117	21	8	1	3387	99.79 %
Est Periodic Calls							0	0.00 %
Security Calls							7	0.21 %
Service Calls							0	0.00 %
Total Calls							3394	100.00 %

Figure 3.4. These results show the number of calls for each line that took less than two minutes to deal with, less than five minutes to deal with, etc.

the different call timings reports then see the section in the last chapter on Calls, timings and confusions.

As before, with Line Utilization Analysis, you set the start time and date together with the end time and date. This determines the time period for which the analysis is performed. It is also possible to perform the analysis for just incoming or just outgoing calls (see figure 3.3).

As you can see from the results displayed in figure 3.4, the number of calls for each line are broken down line by line. As mentioned in the previous section, it is worth remembering that the timings for calls are always a slight underestimate.

Why use Call Duration Analysis?

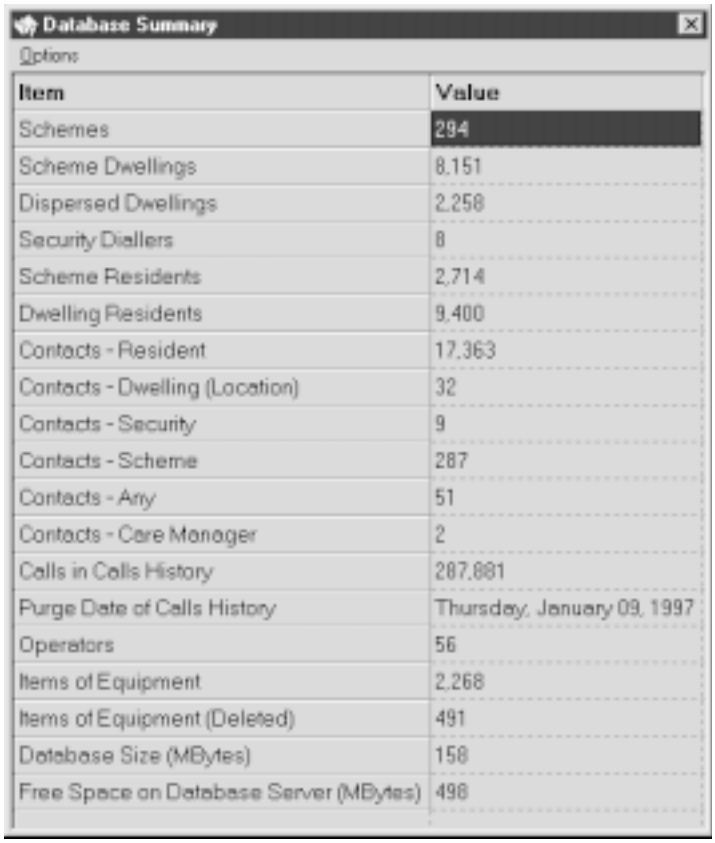
You might wonder why you need an analysis broken down line by line. The answer to this question will depend upon your control centre and its needs. However, one use is for examining load when different lines into the control centre deal with different protocols.

Some control centres have some equipment, such as dispersed home communication units or scheme controllers, that require an unusual protocol. The solution to this problem is to have just one or two LIMs set up to deal with the unusual protocol. The particular units that utilize this protocol will call the telephone number that connects to the LIMs that handle their protocol. The problem you might have is then knowing whether these lines are over-used or under-used. The Line Utilization Analysis will show you how many lines are used at any one point, but will not show which lines are used. It is possible that both lines dealing with an unusual protocol are in near constant use, while other lines are unused. The Line Utilization Analysis would not help you identify this problem, but the Call Duration Analysis will provide some indication of a problem because its analysis is broken down line by line. It can also show you whether calls from some units using a certain protocol are taking longer than others.

Database Summary

The Database Summary report is the only report that does not provide a window to enter criteria. If you select this report it simply runs automatically, producing the results displayed in figure 3.5.

Database summary provides an overview of the state of the database. As you can see from figure 3.5, it shows the numbers of schemes, residents, dwellings and contacts entered in the database. It also shows you the last purge date for calls history.



Item	Value
Schemes	294
Scheme Dwellings	8,151
Dispersed Dwellings	2,258
Security Diallers	8
Scheme Residents	2,714
Dwelling Residents	9,400
Contacts - Resident	17,363
Contacts - Dwelling (Location)	32
Contacts - Security	9
Contacts - Scheme	287
Contacts - Any	51
Contacts - Care Manager	2
Calls in Calls History	287,881
Purge Date of Calls History	Thursday, January 09, 1997
Operators	56
Items of Equipment	2,268
Items of Equipment (Deleted)	491
Database Size (MBytes)	158
Free Space on Database Server (MBytes)	498

Figure 3.5. The Database Summary report provides a summary or overview of the database.

Why use Database Summary?

If your database begins to perform poorly, and is slow in responding to requests, this can be one of the first places to look. Maybe you have not purged the database recently. Maybe there is very little space left on the server and it is struggling because it is juggling files around. Database Summary can be a useful port of call when diagnosing a problem.

Unused Identity Numbers

Many control centres number dwellings and schemes according to a particular approach. For example, all dwellings belonging to Cromwellshire Housing Trust might be given numbers between 14,000 and 15,000. It is relatively easy to keep a record of these number ranges, but how do you check which numbers are really free? How do you know that your written records are correct? After all, you cannot be sure that an operator has not entered a few numbers incorrectly.

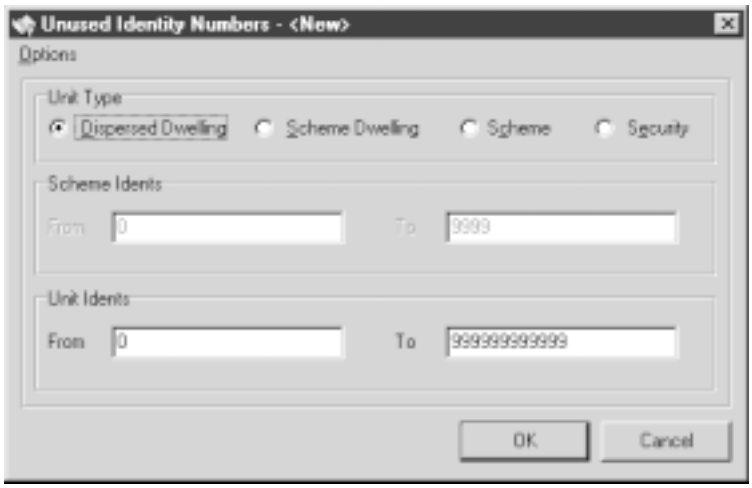


Figure 3.6. You can search for unused scheme, dwelling or security dialler identification numbers.

Why use the Unused Identity Numbers report?

The Unused Identity Numbers report shows you exactly which identity numbers are free and which are not free. It provides an important check so you can be sure that your procedure for numbering dwellings and schemes is or is not consistent with the entries in the database.

The report criteria window for Unused Identity Numbers is shown in figure 3.6. The radio buttons at the top allow you to search for:

- unused ID numbers for dispersed dwellings;
- unused ID numbers for speech units (scheme dwellings) at a particular scheme;
- unused ID numbers for schemes;
- and unused ID numbers for security diallers.

The fields towards the bottom of the window displayed in figure 3.6 allow you to restrict the range of numbers which are searched. For example, it would be possible to search for unused numbers between 14,000 and 15,000. In this way you could check that all of these numbers are free if you wish to use this range for a new housing association.

Figure 3.7 shows the results of a report that lists unused identification numbers for dispersed dwellings between 0 and 2000. Notice that the free numbers are displayed as ranges, such as 151...698. This means that all numbers between 151 and 698 are unused and hence available. In addition, these ranges are inclusive. In other words, the range 151...698 includes the numbers 151 and 698.

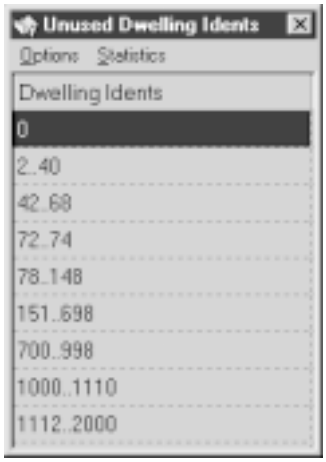


Figure 3.7. Unused identification numbers are displayed in a results window as ranges.

4 Calls Analysis

In this chapter we will consider analyses of calls. All of the reports that can be produced analyse calls, except for No Contact from Dwelling, which can show which dwellings have not called recently. We will deal with the first report, General Analysis of Calls, in some detail. The following reports work in a very similar manner, and so only their differences and exceptions will be explained.

There are four analyses that deal with call timings. These analyses are different, but are sometimes confused. Please see chapter 2 from this volume for information on the different types of call report that deal with timings.

General Analysis of Calls

As mentioned in Chapter 2 of this volume, the General Analysis of Calls shows you how long calls last. Unlike the Line Utilization and Call Duration reports, however, General Analysis of Calls displays call length according to the category of caller, such as schemes, dispersed dwellings, security diallers, etc.

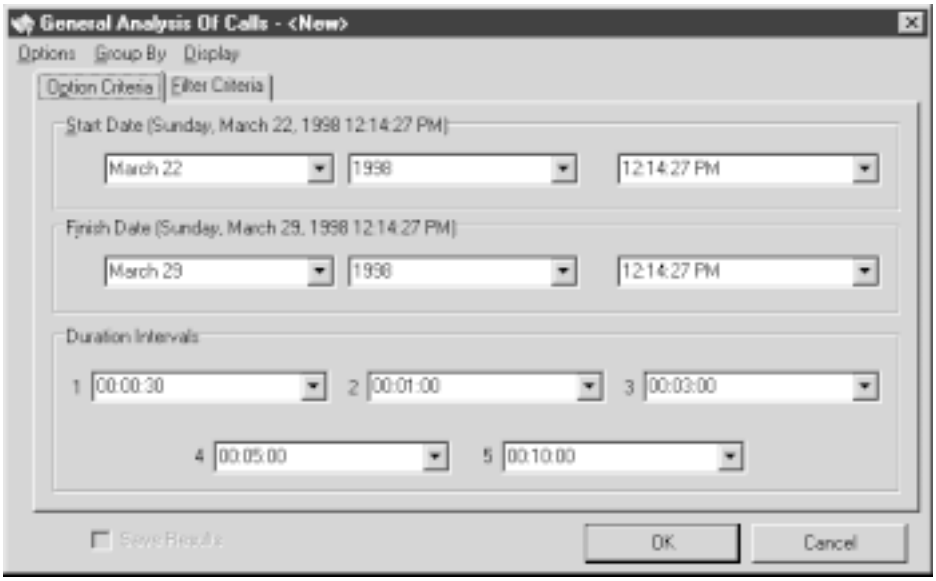
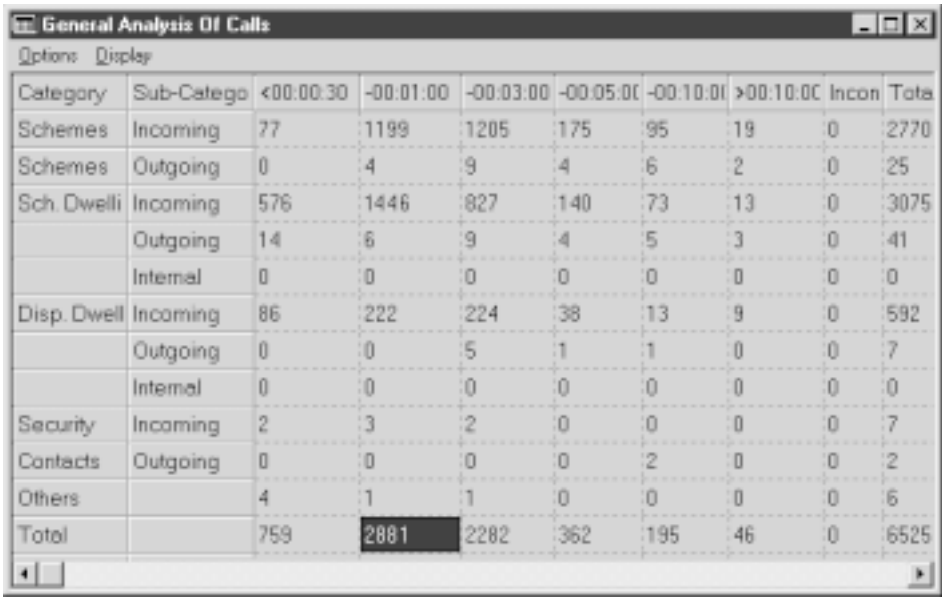


Figure 4.1. The fields displayed in the Option Criteria tab can be used to select the start and end times and dates for the analysis, as well as the call duration intervals.



Category	Sub-Catego	<00:00:30	-00:01:00	-00:03:00	-00:05:0(	-00:10:0(	>00:10:0(	Incon	Tota
Schemes	Incoming	77	1199	1205	175	95	19	0	2770
Schemes	Outgoing	0	4	9	4	6	2	0	25
Sch. Dwelli	Incoming	576	1446	827	140	73	13	0	3075
	Outgoing	14	6	9	4	5	3	0	41
	Internal	0	0	0	0	0	0	0	0
Disp. Dwell	Incoming	86	222	224	38	13	9	0	592
	Outgoing	0	0	5	1	1	0	0	7
	Internal	0	0	0	0	0	0	0	0
Security	Incoming	2	3	2	0	0	0	0	7
Contacts	Outgoing	0	0	0	0	2	0	0	2
Others		4	1	1	0	0	0	0	6
Total		759	2881	2282	362	195	46	0	6525

Figure 4.2. The General Analysis of Calls report shows calls to and from contacts and locations, such as schemes, dwellings and security diallers.

When you select the General Analysis of Calls report the first window you see allows you to enter the start and end times, as well as the start and end dates, for the analysis you are about to perform (see figure 4.1). You can also set the call duration intervals, just as you might for the Call Duration report (see the previous chapter).

If you were to simply select a date period for an analysis and click OK you would be presented with the results shown in figure 4.2 (after you had been asked if you wanted to save your search criteria). As you can see, the General Analysis of Calls report breaks down the numbers of calls by interval (i.e. how many calls took less than 30 seconds, how many took more than 30 seconds but less than one minute, etc). This is just what the Call Duration Analysis did. However, Call Duration Analysis then breaks these figures down telephone line by telephone line. The General Analysis of Calls report breaks the figures down according to the type of calls that were made or received. Specifically, it shows you how many calls were received from schemes, from scheme dwellings, dispersed dwellings, etc. it also shows you how many calls were made to schemes and scheme dwellings and dispersed dwellings.

Internal calls. You may also notice (see figure 4.2) that for scheme dwellings and dispersed dwellings there is also a category called Internal. Internal calls are alerts - they are calls made only within the PNC3 Vision system, from the database to the operators. In particular, they report overdue service calls and overdue periodic calls. For more information on internal calls see Chapter 10 from Volume A of this manual.

Using Filters

As you can see from figure 4.3 General Analysis of Calls also has a tab called Filter Criteria. You can use this filter to just examine calls from certain operators, or calls with certain events.

Events are numbers. An event is stored in the calls history part of the database as both a number and a piece of text. The event number is the number sent by the home communication unit, the scheme controller or the security dialler. For example, a home communication unit might send a number 01 to indicate that the integral button has been pressed. Consequently, although

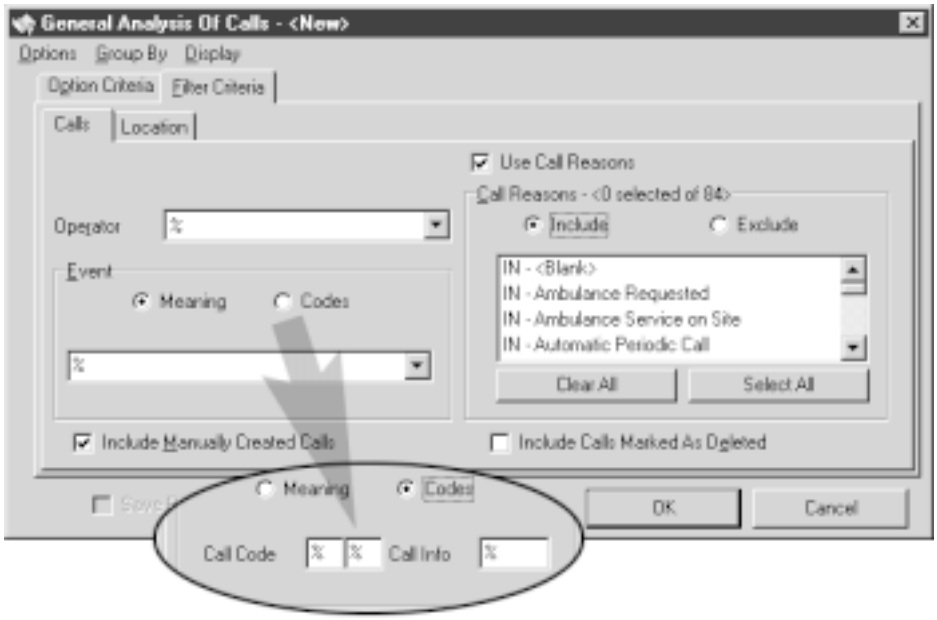


Figure 4.3. The filter criteria allow you to narrow the focus of the analysis, just concentrating on certain types of call.

the original message from the scheme controller or home communication unit was just a number, both the number '01' and the text 'Integral button' will be stored in Calls History.

Meanings and events. You can filter using either meanings (i.e. the text stored in Calls History, such as 'Integral Button'), or events (i.e. the numbered codes set by the scheme controller or home communication unit).

Call reasons. It is also possible to include or exclude any number of call reasons just by selecting the include or exclude radio button shown in figure 4.3. For example, if you performed an analysis and selected the Use Call Reasons tick box, and then clicked on the Include radio button and selected Ambulance Requested, you would get an analysis that displayed only those calls where an ambulance was requested.

Manually Created Calls and Calls Marked as Deleted. If you select the Include Manually Created Calls tick box then this will cause the analysis to include any calls that were not automatically logged by Vision, but were added to the calls history later by an operator. You can also include calls that have been marked as deleted.

The location filter

The Location Type set of radio buttons allow you to choose between an analysis that reports results for all of the locations (which it the default), or just one of the location types, such as dispersed dwellings, scheme dwellings, schemes, etc (see figure 4.4). It is also possible to analyse calls to and from just one scheme or one dispersed dwelling by entering their identification numbers. You can also use the range buttons to enter a range of scheme or dwelling identification numbers (see Chapter 7 from Volume A for details of how to use ranges of numbers).

It is also possible to look at calls from and to certain equipment types. For example, it would be possible to analyse only calls to and from Lifeline 3000 home communication units. It is also possible to analyse calls according to resident keyword, enabling you focus on residents who possess just that particular keyword, such as Heart or Confusion.

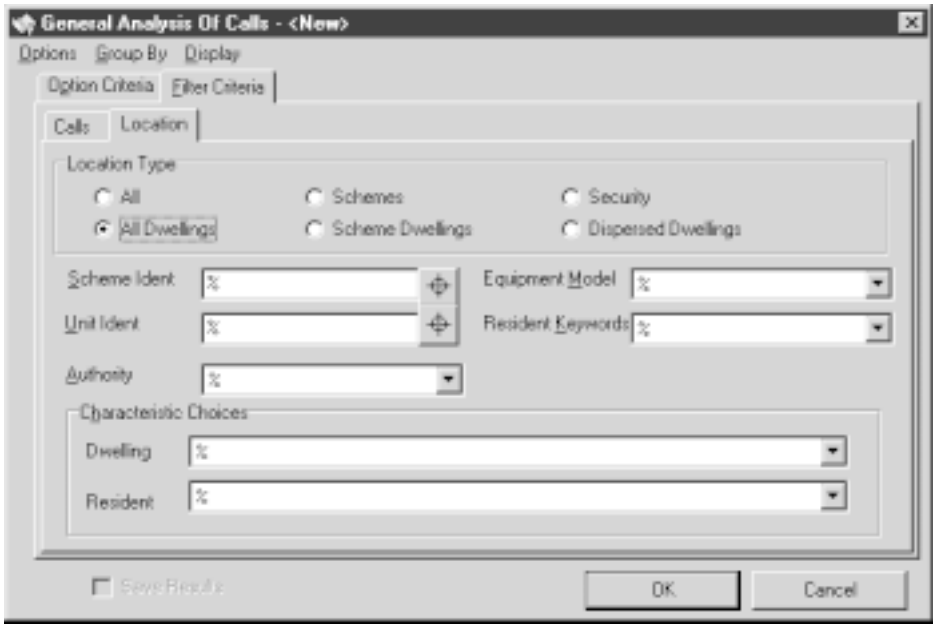


Figure 4.4. The location tab allows you to narrow the focus of the analysis to just one type of location.

You can narrow your analysis to just one authority if you wish by using the Authority field. Alternatively, you can analyse calls from and to dwellings or schemes with just a particular characteristic.

Group By

Grouping was dealt with in Chapter 2 of this volume. If you select an item, such as Operator, from the Group By menu (see figure 4.5) you will be presented with a list of operators. An analysis will then be performed for each operator you select. For more information see Chapter 2 of this Volume.

Listing calls: one of Management Reports' most impressive features

Calls results windows do not just show you how many calls fall into one category or another, they also have another very useful function. You can select any statistic in a call report, double click on it, and all of the calls that go to make up that statistic will be listed for you in calls history. This is one of Management Reports most powerful features.

For example, if you were to double-click on the Schemes Outgoing calls row shown in figure 4.2 you would be shown all 25 outgoing calls to schemes. More usefully, if there was an incomplete call you can double click on the number in question and have that incomplete call displayed, thus enabling you to follow-up the call.

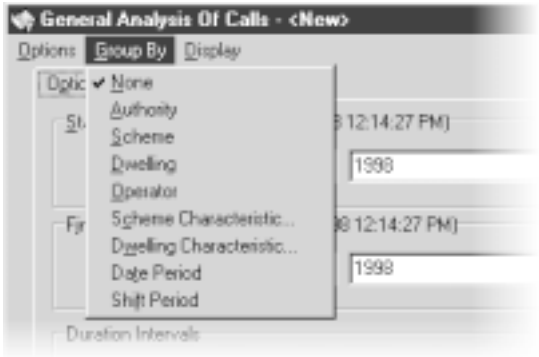


Figure 4.5. Analyses can be broken down by authority by authority, operator by operator or even scheme by scheme.

Why use General Analysis of Calls?

This form of analysis shows you how long calls take to deal with. If you had a complaint that residents from one authority's schemes were being dealt with more slowly than residents from another authority's schemes you could use this type of analysis to see whether the accusation had any merit. Alternatively, if you believed that some old equipment was faulty, and did not release the telephone line for some minutes, you could look at calls from just this type of equipment to see whether the calls were taking much longer on average.

Analysis of Call Response Times

This report deals with the potentially sensitive issue of how long it takes for calls to be answered. As you will see from figure 4.6, it is possible to set the start time and date, as well as the end time and date for the analysis. You can also group the analysis if you wish. The criteria that can be set are exactly the same as the criteria that can be adjusted for General Analysis of Calls. In fact, nearly all of the call reports have the same range of criteria that can be set.

The results shown in figure 4.7 show the number of calls that were answered in under 30 seconds, the number that were answered after 30 seconds but before one minute, etc. As you can see from figure 4.6, you can set these intervals to whatever times you wish. As before, the response times are broken down for schemes, scheme dwellings, dispersed dwellings and security diallers.

Under-reporting

As mentioned in the last chapter, the amount of time a call waits is measured from the time the call became known to the database through to the time an operator selected the call. However, there is a very small amount of time when the LIM is communicating with the telephone to discover its details when the database is not aware of the call. Consequently, each and every response time is slightly shorter than the true response time. Response time is an accurate reflection of the time it took operators to answer the call. This is because operators cannot select calls until the database becomes aware that they exist. However, each call has actually taken a little longer to answer from the caller point of view because of the time the LIMs need for communication with the telephone.

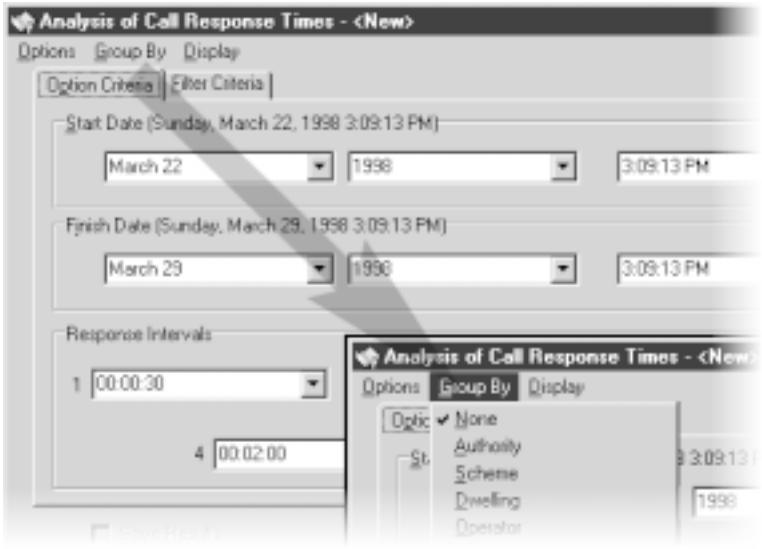
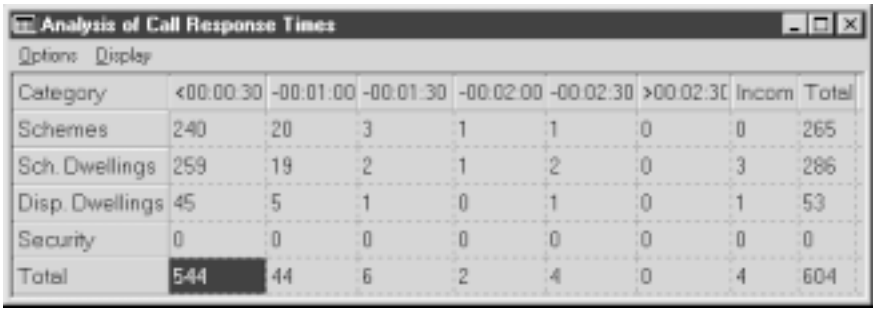


Figure 4.6. The criteria you can select are almost exactly the same as the criteria for General Analysis of Calls, except that the intervals are for response times rather than call duration.



Category	<00:00:30	-00:01:00	-00:01:30	-00:02:00	-00:02:30	>00:02:3(	Incom	Total
Schemes	240	20	3	1	1	0	0	265
Sch. Dwellings	259	19	2	1	2	0	3	286
Disp. Dwellings	45	5	1	0	1	0	1	53
Security	0	0	0	0	0	0	0	0
Total	544	44	6	2	4	0	4	604

Figure 4.7. This analysis shows the numbers of calls that were answered within 30 seconds, the number that were answered within 1 minute, etc.

Why use Call Response Times?

The most obvious answer to the question 'why use Call Response Times analysis', is that it allows you to see whether calls continue to be answered with the speed required. However, crude overall analyses might not always be the most useful. Using meanings or call event codes to distinguish between calls might tell you more. For example, you would expect calls from smoke alarms and residents who have pressed their radio trigger to be answered quickly, while other types of call were left in the queue.

It is important to deal with call response time data sensitively, as it is possible to compare operators. One operator might take longer than others to answer calls. However, this might be because he or she is scheduled for a busy shift and there are often calls in the queue waiting to be answered. Alternatively, an operator might take longer with each call, offering more reassurance to residents, and this might slow them down when accepting the next call.

Interpreting sensitive data

Some reports produce sensitive information, and Call Response Times is one of these reports. Clearly, an operator who is not answering the telephone quickly is letting down the residents and the control centre. However, before attempting to identify problems you need to know a little more about how the information is collected.

Let us imagine that there is a shift with two call operators, Derek and Angela. Derek selects very few calls, leaving Angela overloaded. Sometimes Angela is trying to deal with one call while another is waiting, and yet Derek does nothing. By the time Angela deals with her call and selects the next one this next call has been waiting four minutes.

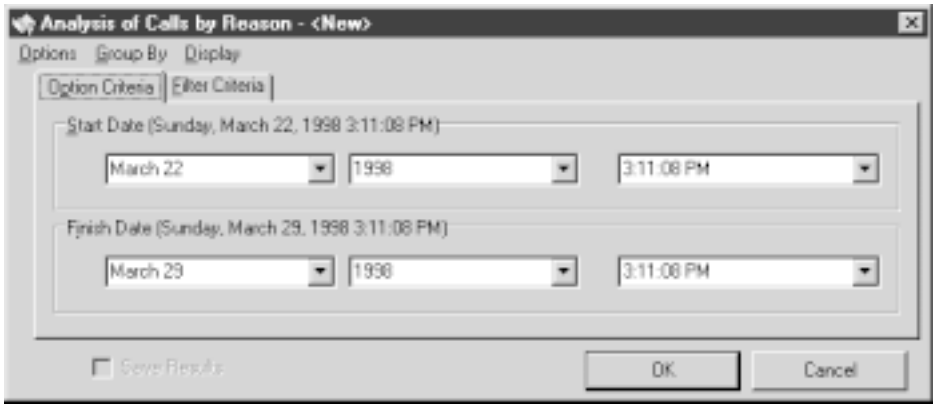


Figure 4.8. The criteria you can set for a Calls by Reason analysis are the same as the criteria for General Analysis of Calls and Call Response Times, except that there are no time intervals to set.

In an attempt to get to the bottom of these problems an analysis of call response times is performed and the analysis grouped by the operator who handled each call. Not surprisingly, Derek has answered many calls that have been waiting two minutes or more. However, Angela looks terrible because some of the calls she answered had been waiting more than four minutes. The fact that Angela took this long because she was dealing with other calls is not included in the information.

If you group an analysis of call response times by operator each call is allocated to the operator who answered the call, not necessarily the operator who ignored it and found something else to do. If you do have a problem with call response times then grouping by shift rather than by operator can provide more useful information.

Analysis of Calls by Reason

The analysis of Calls by Reason shows you why calls were made. As you can see in figure 4.8, you can set the start time and date as well as the end time and date for the analysis. However, unlike the previous two reports described here, there is no facility to select response time or duration time intervals. This is because such intervals are irrelevant to an analysis such as this.

The list of call reasons that operators choose from is determined by you (see Chapter 4 from Volume C for details of how to add, delete and amend the different call reasons operators can select). As you can see in figure 4.9 each call reason is listed together with the number of calls that were received that have that reason for the time period of the analysis.

Figure 4.9. The Calls by Reason analysis produces a list of the different reasons together with the number of calls with that particular reason for the time period of the analysis.

Why use Analysis of Calls by Reason?

The most obvious reason for using this analysis is that you can see why different calls were made. If you are asked how many callers requested an ambulance during the last month then this is the report that will provide the answer. It also allows you to see which call reasons are not being used and hence might not be needed.

Can you trust the data?

An analysis can only be as good as the data that it uses. The information on call response times and call duration is collected automatically by Vision and so can be replied upon. As mentioned earlier, and again in the last section on Analysis by Call Response Times, Vision slightly under-calculates the time a call has waited. This is known as a consistent error, and therefore you can still rely upon the informa-

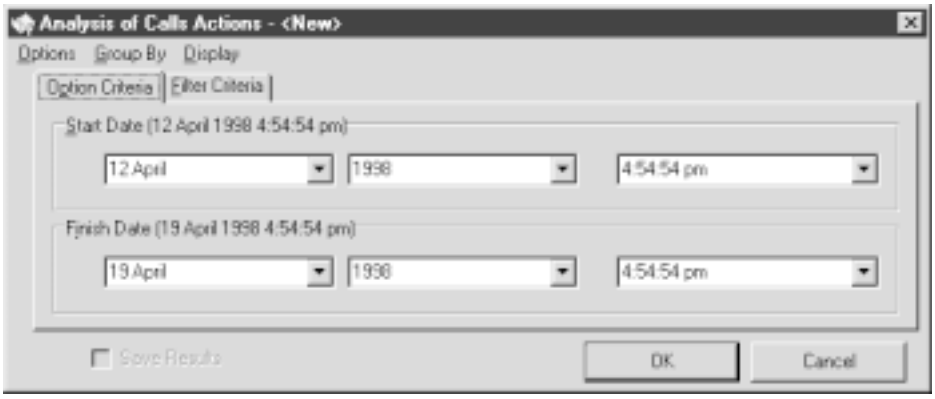


Figure 4.10. The call actions criteria you can set are almost identical to those for call reasons.

tion when performing an analysis. However, your operators might not be so consistent when entering information.

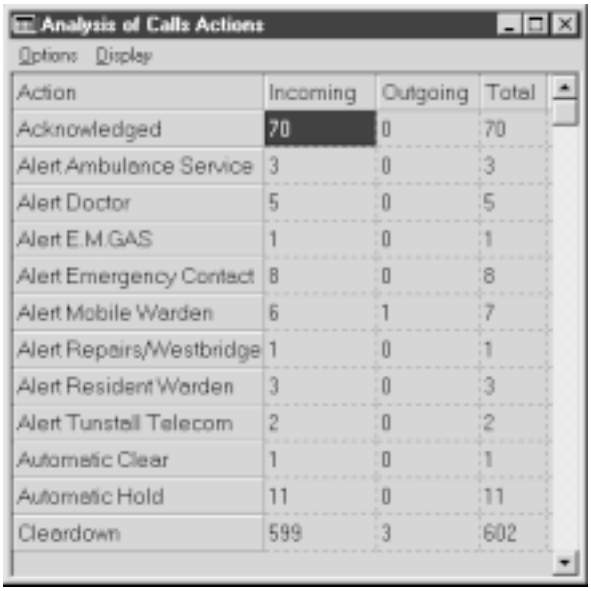
You may note from figure 4.9 that 265 calls were blank - they had no call reason. This means that the operators are not entering the call reasons for every call. This might be because they do not appreciate the importance of such record-keeping. It might also be because the choices they want are not present. Alternatively, there may be too many call reasons to select from which is leading the operators to give up and enter nothing.

If your operators are not entering information diligently then performing an analysis using this information is of little use. The last chapter in this volume deals with trend analysis, which you can plot changes in results over time. If your operators are not entering information accurately then your trend will not show true changes over time in the number of requests for ambulances, for example. Rather, it will show changes that have occurred simply by chance as operators sometimes have and sometimes have not entered the information.

Analysis of Call Actions

The Analysis of Call Actions is identical to the Analysis of Call Reasons, except that Actions are selected instead of Reasons. As you can see from figure 4.10, the criteria that can be selected for Analysis of Calls by Reason.

The results for an Analysis of Call Actions include a display of all of the possible call actions listed against the numbers of calls that have that action (see figure 4.11). One difference between call actions and call reasons is that a call can only have one reason, but it can have a number of call actions. Consequently, it is possible to have just ten calls in total, but fifteen or sixteen



Action	Incoming	Outgoing	Total
Acknowledged	70	0	70
Alert Ambulance Service	3	0	3
Alert Doctor	5	0	5
Alert E.M.GAS	1	0	1
Alert Emergency Contact	8	0	8
Alert Mobile Warden	6	1	7
Alert Repairs/Westbridge	1	0	1
Alert Resident Warden	3	0	3
Alert Tunstall Telecom	2	0	2
Automatic Clear	1	0	1
Automatic Hold	11	0	11
Cleardown	599	3	602

Figure 4.11. The possible actions are listed against the numbers of calls which that action.

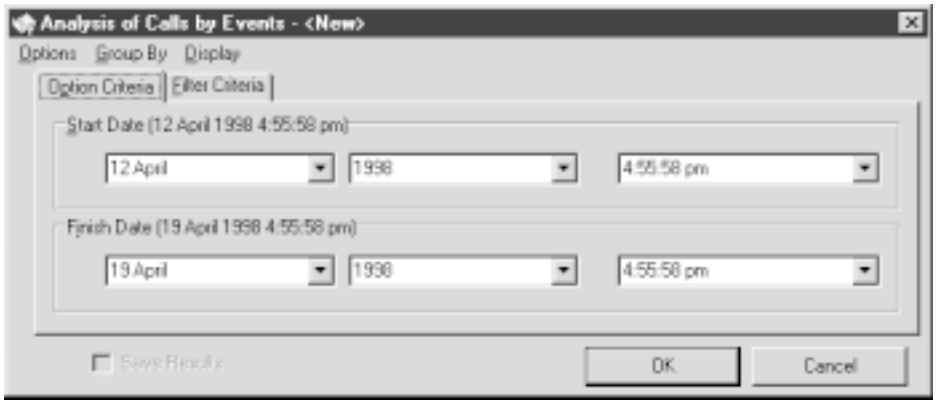


Figure 4.12. The Analysis of Calls by Events criteria window allows you to set the start and end times and dates for the analysis.

call actions across these ten calls. In other words, it is possible for a call to appear in more than one statistic - in more than one row - if it has more than one call action.

Why use Analysis of Call Actions?

Not all residents who ring to request an ambulance or the fire service need these services. A confused resident who claims that her cat has fallen and needs an ambulance is more likely to be directed towards a vet. Consequently, an Analysis of Call Actions can sometimes give you a better picture of the real needs of those who called a control centre.

Analysis of Calls by Events

As mentioned before, events are the numbered codes that outfield equipment (i.e. home communication units such as Lifeline 300 and scheme controllers such as Communicall) send to Vision to indicate what has triggered the alarm call. For example, the code 01 from a dispersed unit (a home communication unit) means that the integral button in the telephone has been pressed. These events are stored as both a number and a text description, such as 'Integral Button'.

As you can see from the window displayed in figure 4.12 you can set the criteria for the analysis in the same way as the criteria are set for other call reports. You can see a results window in figure 4.13. The different events are listed together with the numbers of calls that have arrived with a code indicating the event in question, such as integral button pressed or mains failure. The results only list events where there is at least one call.

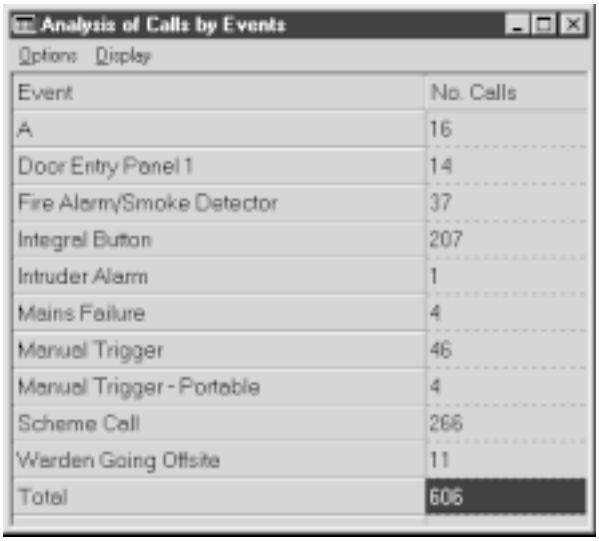


Figure 4.13. The results are listed event by event, with the numbers of calls with those events next to the event name.

Why use Analysis of Calls by Events?

This type of analysis relies upon the codes sent by outfield equipment. Therefore, the data is probably more reliable than other

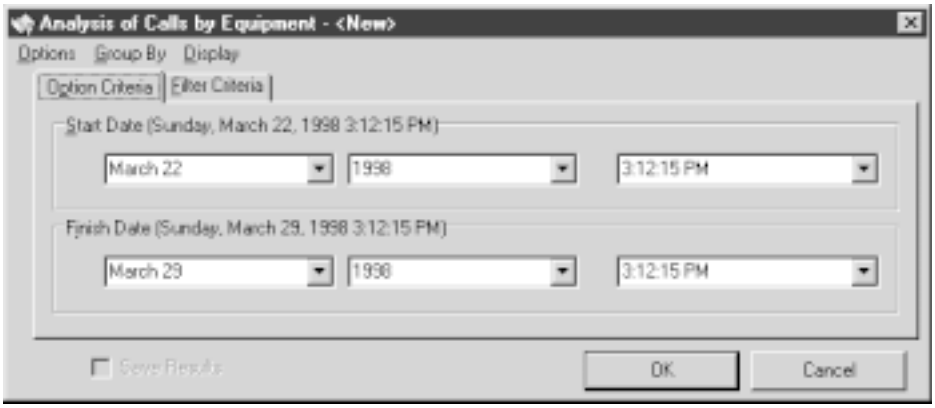


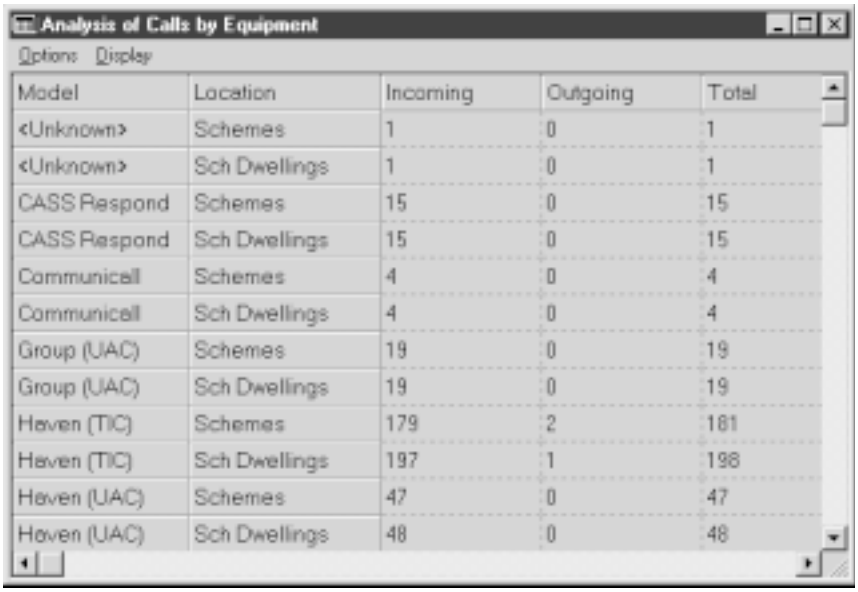
Figure 4.14. The Analysis of Calls by Equipment criteria window is just the same as the window for other types of call analysis.

sorts of operator-entered data. This report can tell you how many calls were initiated by smoke alarms or intruder detectors. It can show you how many residents pressed their radio trigger to make a call.

Analysis of Calls by Equipment

An Analysis of Calls by Equipment will show you how many calls were received from different types of equipment. For example, it will show you how many were received from Communicall scheme controllers and how many calls were made to and from Lifeline 3000 home communication units. As you can see the criteria for the analysis are entered in the same way as the criteria for other analyses (see figure 4.14).

The results window (see figure 4.15) also shows calls from scheme controllers and scheme dwellings. As you can see, there were four calls from a Communicall scheme controller, and four calls from dwellings connected to a Communicall scheme controller. In fact, these will have been the same calls. You might think that this is just a way of listing calls for scheme controllers twice and is therefore pointless. However, it is also possible for a scheme controller to make a call to the control centre without a speech unit connected to the scheme controller having raised an alarm.



Model	Location	Incoming	Outgoing	Total
<Unknown>	Schemes	1	0	1
<Unknown>	Sch Dwellings	1	0	1
CASS Respond	Schemes	15	0	15
CASS Respond	Sch Dwellings	15	0	15
Communicall	Schemes	4	0	4
Communicall	Sch Dwellings	4	0	4
Group (UAC)	Schemes	19	0	19
Group (UAC)	Sch Dwellings	19	0	19
Heven (TIC)	Schemes	179	2	181
Heven (TIC)	Sch Dwellings	197	1	198
Heven (UAC)	Schemes	47	0	47
Heven (UAC)	Sch Dwellings	48	0	48

Figure 4.15. Calls are broken down into incoming and outgoing calls.

For example, if there is a mains failure the scheme controller will make a call to the control centre. However, there will not necessarily be a call from any of the scheme dwellings attached to that controller.

Why use Analysis of Calls by Equipment?

Breaking down the analysis by equipment can show you which equipment is being effectively used. In particular, if you have many false calls it can help to highlight a problem with a certain model of scheme controller or home communication unit.

Calls by Equipment and historical anomalies

Details of the equipment that made calls to a Vision control centre is not held in the Calls History part of the database. To perform an analysis of calls by equipment Vision looks up the calls for the period in question, and then gets the dwelling information for that call and looks up the equipment model.

There are two possible sources of error here. The first concerns the accuracy of the data your operators have entered and the second relates to changes over time. If one hundred calls have come in from Lifeline 1000 home communication units, but your operators have incorrectly listed these dwellings as having Lifeline 3000 units then Analysis of Calls by Equipment will show one hundred calls from Lifeline 3000 units.

The second source of error comes from changes in equipment. Imagine that you received two hundred calls from Lifeline 1000 units in the first week of 1998. Two months ago you performed an analysis which accurately listed the calls as being from Lifeline 1000 units. Now, you repeat the analysis for the first week of 1998. This time the analysis shows that the calls were all from Lifeline 3000 units. This is because all of these residents have had their Lifeline 1000 units exchanged for Lifeline 3000 units, and the database has been changed to reflect this. The Analysis of Calls by Equipment uses the calls for the time period you specify, but has to use the information that is presently stored in the database on equipment used at any particular dwelling.

Analysis of Calls by Contact Type

This analysis shows the numbers of calls made to contacts. It does not show calls from residents who happen to have this sort of contact. This analysis only deals with outgoing calls.

As you can see from figure 4.16, the criteria for this sort of analysis are set in much the same way as criteria for other sorts of call analyses, except that you cannot filter using location criteria as there is no location information on contacts held within the database. In addition, this analysis deals only with outgoing calls - calls made to contacts. This data is collected automatically by Vision and so can be viewed as highly reliable.

As you can see in figure 4.17, the numbers of calls made to different contact types are listed. These are the calls made for the period of the analysis, which you will have determined by selecting the start and end times and dates from the criteria window displayed in figure 4.16. As mentioned above, the report lists only outgoing calls made to contacts, it cannot include any incoming calls from contacts.

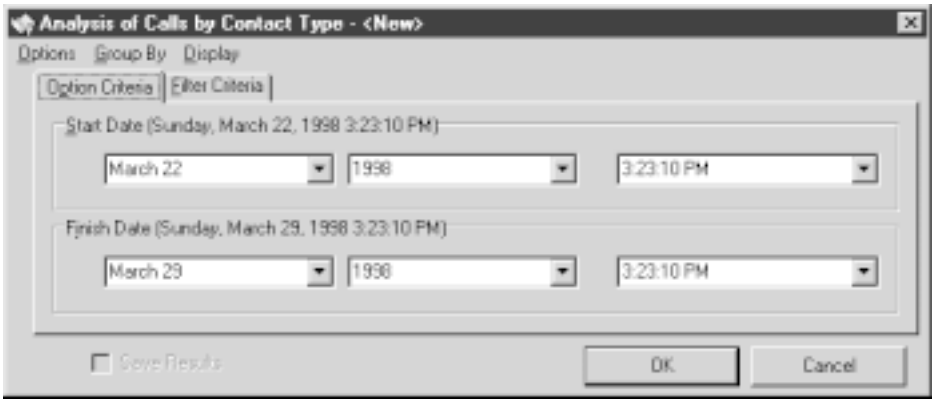
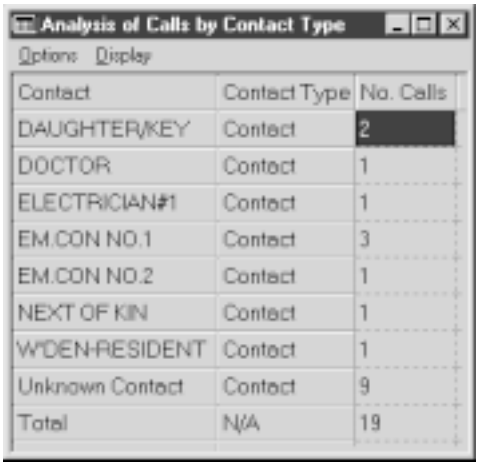


Figure 4.16. The criteria window for this sort of analysis is the same as the windows for other calls analyses.

Missing contact types. Only those types of contacts that have received at least one call are listed. For example, one common contact type is Brother. Calls for the contact type Brother will only be listed if at least one contact who is assigned the type Brother is called. In this way the results window is not filled with lots of contact types with zero to show the number of calls made. Consequently, contact types that are not listed are not missing.



Contact	Contact Type	No. Calls
DAUGHTER/KEY	Contact	2
DOCTOR	Contact	1
ELECTRICIAN#1	Contact	1
EM.CON NO.1	Contact	3
EM.CON NO.2	Contact	1
NEXT OF KIN	Contact	1
WDEN-RESIDENT	Contact	1
Unknown Contact	Contact	9
Total	N/A	19

Figure 4.17. The calls to contacts are broken down contact type by contact type.

Why use Analysis of Calls by Contact Type?

This analysis shows you the range of contacts that are most commonly used. When new dwellings and residents are entered into your database you can use this report to analyses which are the most commonly used contacts and thus allow this to determine the information that you request from residents. For example, if the contact type Neighbour is commonly used then you know that this is a genuinely useful contact type and you might press new residents to include a near neighbour as a contact.

No Contact from Dwelling

Residents should regularly test their equipment to ensure that it is in working order. However, some residents forget. This report will show you how many residents have not contacted the control centre over a particular period of time. It can also list these residents so that action can be taken.

Previous versions of PNC3 allowed you to list the dwellings that had not made contact. However, the No Contact from Dwelling analysis did not distinguish between residents who had pressed their integral button to test their equipment and those who had pressed their radio trigger. As you can see from figure 4.18, it is now

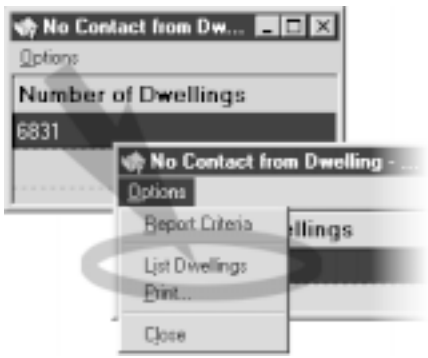


Figure 4.19. The results window simply shows the number of residents that have not made contact, although you can also list these residents by using the Options menu.

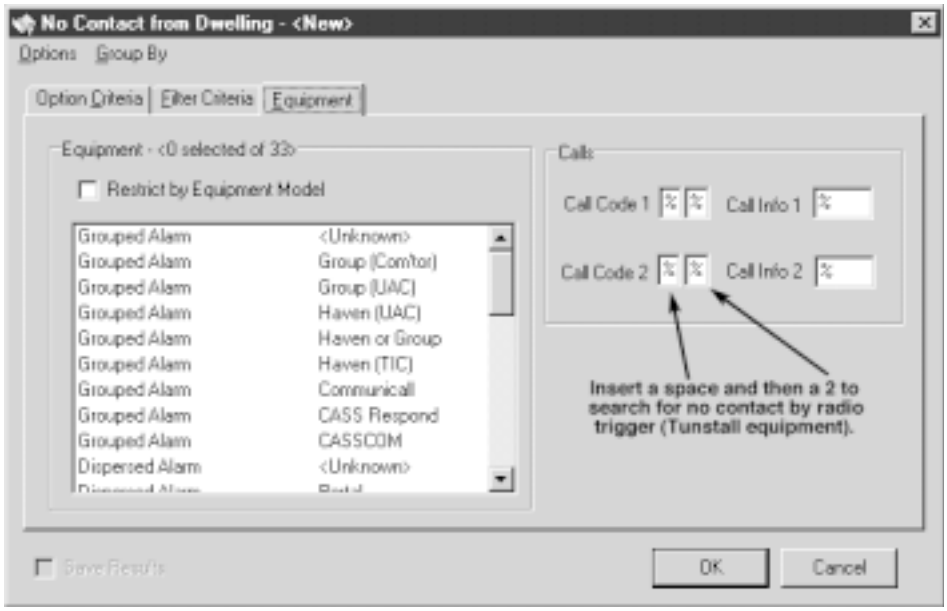


Figure 4.18. It is now possible to search for dwellings where there has been no contact using a particular event code.

possible to search for residents who have not made contact using their radio trigger. However, as mentioned earlier in this chapter, it assumes that all outfield equipment has been set up to use the same event codes for the same events.

The window displayed in figure 4.18 shows two possible call codes, Call Code 1 and Call Code 2. This allows you to search for no contacts using up to two different codes. Normally, however, you will only want to use one of these. You should insert your parameters, such as a space and a '2' into Call Code 1, and leave Call Code 2 as it is, with percentage signs in place.

If you know that the event code for an alarm that was raised using a radio trigger, then you can search for all dwellings that have not made contact using their radio trigger. The number of dwellings will be shown in the results window (see figure 4.19). As you can see, this number is useful, but does not help you to resolve the problem. However, by selecting List Calls from the Options menu you can get a list of all of the dwellings. This list can then be used by an operator who can contact the dwellings and ask for a test using the radio trigger to be performed.

Why use the No Contact from Dwelling analysis?

The most common reason for not contacting the control centre will be that residents forgot to test their equipment. Occasionally, the reasons might be more serious. This analysis allows you to find out how many residents have not contacted you. You can also find out how many residents have not used their radio trigger to contact you over a period of time, as some residents remember to test the integral button on their telephone, but forget to test their radio trigger.

5 Data Analysis

This chapter will consider the various reports that analyse data within the database, such as residents, dwellings and schemes. One analysis, Analysis of Residents by Keyword, will be considered in more detail. Many of the reports that are then described work in a similar fashion.

Analysis of Residents by Keyword

This reports shows how many residents have any particular keyword attached to their record in the database. If you select this report from the list of management reports and then press the OK button (see figure 5.1) you will see a breakdown for all residents. However, it is also possible to narrow the analysis.

Identification numbers. It is possible to enter either a single number or a range of numbers in either the scheme identification number field (called Scheme Ident) or the dispersed dwelling

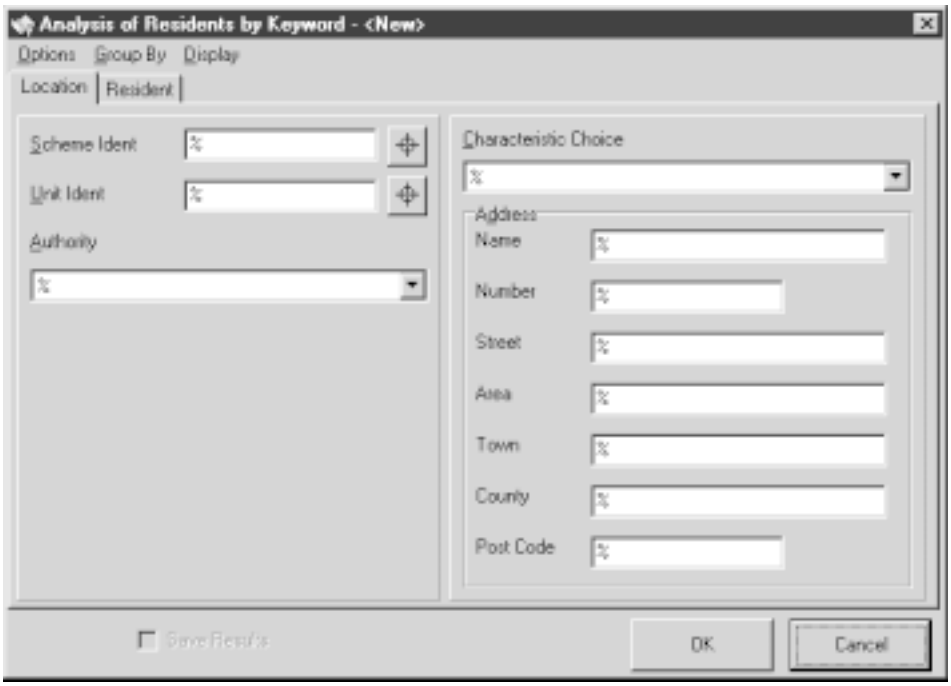


Figure 5.1. The Location tab in the criteria field allows you to narrow the analysis by entering a range of identification numbers, an authority, a characteristic or elements of an address.

identification number field (called Unit Ident). This will restrict the analysis to just these locations, rather than all of the dwellings or all of the schemes in the database.

Authority, characteristics or address. It is also possible to restrict the analysis to just one authority. The Characteristic Choice field can be used to restrict the analysis to locations with just one particular type of characteristic. You can also enter details in the address fields in order to restrict the analysis. By using the percentage signs and underscore characters, as described in the search chapters in Volume A of this manual, it is possible to specify particular towns, villages or areas for analysis.

Group by. As explained in chapter 2 of this volume, an analysis can be grouped. If you wanted an analysis for just the Cromwellshire Authority then you could select Cromwellshire from the Authority field. However, if you wanted an analysis for several authorities then you could select Authority from the Group By menu and a separate analysis would then be performed for each of the authorities.

The Residents tab allows you to narrow the analysis by selecting residents according to names, titles or residents' characteristics. It can be useful to remember that locations have a different set of characteristics to residents.

Keyword filters

It is also possible to focus the analysis using keywords. The right-hand side of the screen shown in figure 5.2 will be dimmed and unavailable until the Use Keywords tick box towards the bottom left-hand side of the screen has been selected. Initially, these options can look confusing, and so it might be useful to carefully step through each one.

Imagine that we select the keywords Angina and Brain. The two radio buttons at the top of the keywords section are called Include and Exclude. If Include is selected then only residents with the keywords Angina and Brain will be included in the analysis. Correspondingly, if the Exclude

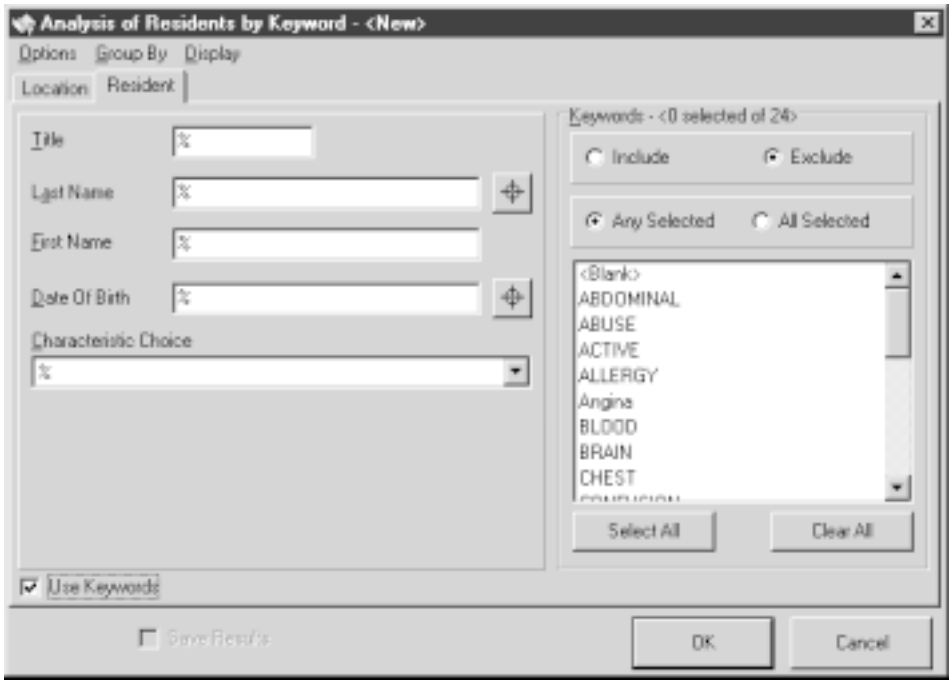


Figure 5.2. The Resident tab allows you to enter elements of the resident's name, a resident characteristic, or some or all of the available keywords.

radio button is selected residents with the keywords Angina and Brain will be excluded from the analysis. In other words, the analysis will include all residents, except residents with the Angina or Brain keyword.

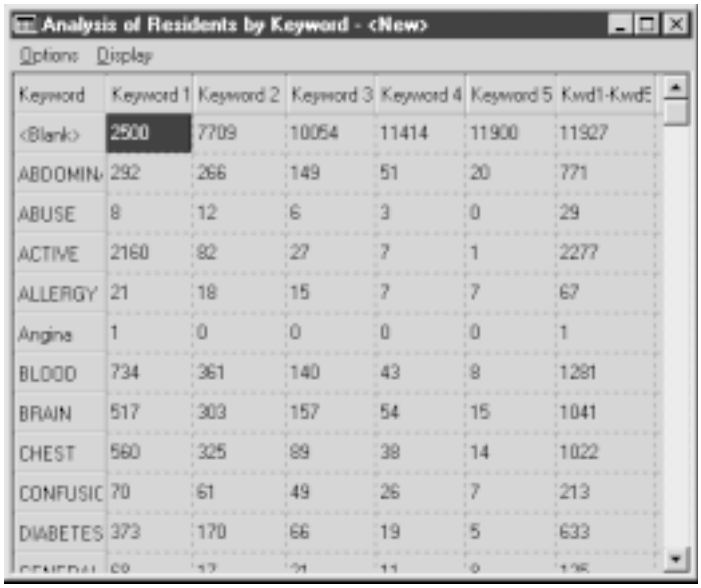


Figure 5.3. The results display the numbers of residents who possess each keyword.

The Any Selected and All Selected radio buttons work in conjunction with the Include and exclude radio buttons. For example, if Exclude was selected together with Any Selected, then any residents with either the Angina or Brain keyword would be excluded from the analysis. If Exclude was selected and All Selected was also chosen then only residents who had both the Angina and the Brain keyword would be excluded.

It might be useful to run through this again using the Include radio button as an example. If Include was selected and the Any Selected radio button was chosen then any resident with any of the keywords you had selected would be included in the analysis. In other words, any resident with the keyword Angina or the keyword Brain would be included. Alternatively, if All Selected was chosen, then only residents with both the Angina and the Brain keyword would be included in the analysis.

Results

The results for the Analysis of Residents by Keyword can be seen in figure 5.3. You can see from this figure that 1,041 residents possess the keyword Brain. Notice that the figure 1,041 is in the column labelled ‘keyword1-keyword5’, or ‘kwd1-kwd5’. This column shows the total number of residents who possess the keyword, regardless of whether the keyword is in positions 1, 2, 3, 4 or 5.

The other columns show how often the particular keyword is in a particular keyword position. This can sometimes be useful because some control centres tend to enter the most important keyword for a resident in the first keyword position. If a keyword only appears in the columns for keywords 3, 4 or 5 then it is possible that it is less important than keywords appearing in the columns for positions 1 and 2.

Why use Analysis of Residents by Keyword?

Keywords provide the headers under which specific information is held about residents. In particular, information about medical conditions is held under keywords. A particular snapshot of how many residents have angina and how many have a blood disorder might not tell you a great deal. However, this sort of analysis, performed every month, can show you how your population of residents is changing. If you find that the number of residents connected to your control centre doubles in two years, but the number of calls does not double, then this sort of analysis might

provide the answer. Maybe you have acquired more residents who do not have medical problems, maybe not - maybe the answer lies elsewhere. If performed regularly, using a batch run and then plotted using trend analysis (see the next chapter), you will be able to see the changes and this might help in accounting for changes in control centre use.

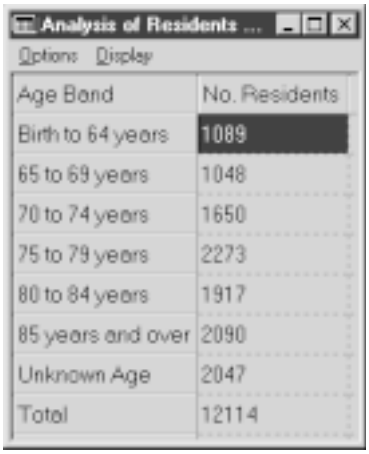
Analysis of Residents by Age Band

This report will show how the residents connected to your control centre are distributed amongst age bands you set. As you can see from figure 5.4, you can set up to five age bands. In figure 5.4 age band 1 include all residents aged up to and including 64 years. Age band 2 includes all residents aged 65 and up to and including 69 years of age. You can set these bands to any ages you wish, except that band 2 always must be greater (older) than band 1, and band 3 must be greater than band 2, etc.

Figure 5.4. You can use the criteria window to set the age bands you wish to consider.

The filter criteria you can set using the Filter tab are exactly the same as those described in the previous report under the Resident tab. In other words, you can narrow the analysis by selecting residents according to names, titles or residents' characteristics, as well as keywords. As with previous reports, you can group the analysis. For example, if you wished to discover if one authority tended to have older residents than another you could group the analysis and select the authority in question, together with one or more other authorities against which a comparison could be made.

As you can see from the results displayed in figure 5.5, the numbers of residents within each age band are displayed. Notice that there are 2,047 residents for whom there is no record of their date of birth and hence age. With such a large number unknown it is likely that this number would play a large part in affecting any trend analysis. In other words, if you looked at the changes in resident age distribution over time you might find that the results were affected more by the random nature of the residents whose age is unknown than genuine changes in age. If the numbers of unknown ages within your database are much smaller then the figures can be considered more reliable.



Age Band	No. Residents
Birth to 64 years	1089
65 to 69 years	1048
70 to 74 years	1650
75 to 79 years	2273
80 to 84 years	1917
85 years and over	2090
Unknown Age	2047
Total	12114

Figure 5.5. The numbers of residents within each age bands are shown, and these can also be shown as percentages by using the Display menu.

How is age calculated? It is important to remember that age is not stored within Vision, only a resident's date of birth. During this analysis resident age is calculated. This means that if you perform an analysis on one day, and then repeat the analysis the next, even if not one record in the database has been altered, the results will be slightly different. This is because some of the residents will have had birthdays, and Vision will automatically update their age.

Why use Analysis of Residents by Age Band?

This report can show you how your residents are distributed amongst the age bands. Performed regularly, this analysis can be used as part of a trend analysis to see how the age profile of your residents evolves over time.

Analysis of Residents by Characteristic

This analysis allows you to analyse residents according to the various classifications in which they have been placed. Characteristics are really forms of classification. For example, you might have a characteristic called First Language, and this would indicate what the resident's first and/or preferred spoken language was. Residents are then classified according to their spoken language, such as English, Welsh, Hindi, etc.

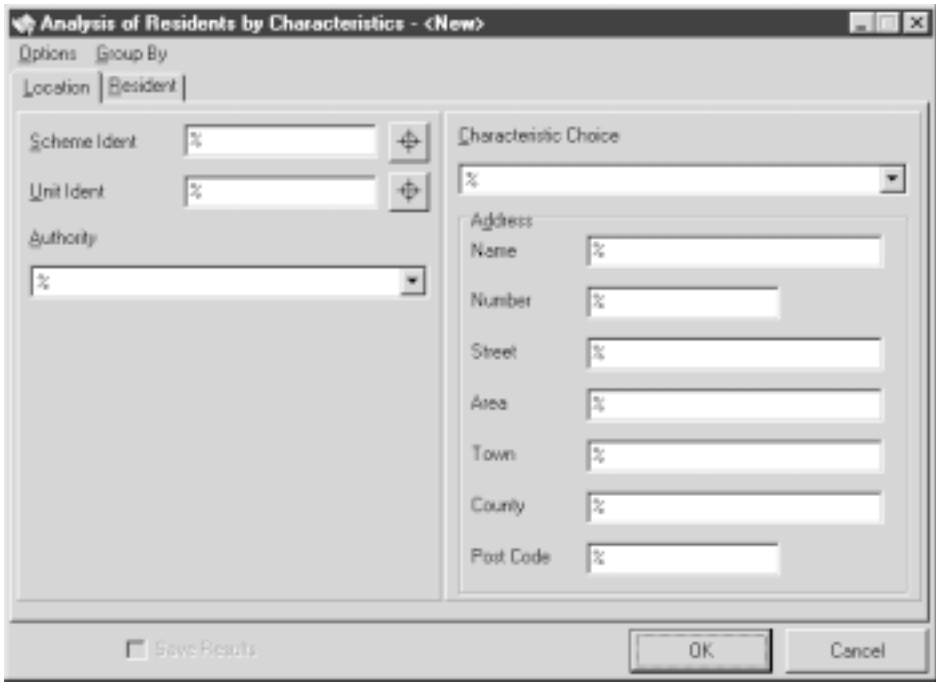


Figure 5.6. The range of criteria you can vary for this analysis is exactly the same as the criteria you can set for the Analysis of Residents by Keyword.

The criteria you can set for this analysis in order to narrow its scope is exactly the same as the criteria for the Analysis of Residents by Keyword, described earlier in this chapter. You can narrow the analysis by selecting residents according to names, titles or residents' characteristics, as well as keywords (see figure 5.6). You can also select parts of an address, an authority or ranges of scheme or dispersed dwelling identification numbers to narrow the focus of the analysis.

The results for an Analysis of Residents by Characteristic can be seen in figure 5.7. As you will see, the numbers of residents who possess each characteristic choice is displayed. It is important to recognize that this sort of analysis relies upon the accuracy of the data. Some analyses, such as Line Utilization, rely upon data collected automatically by Vision. This analysis, however, relies upon the

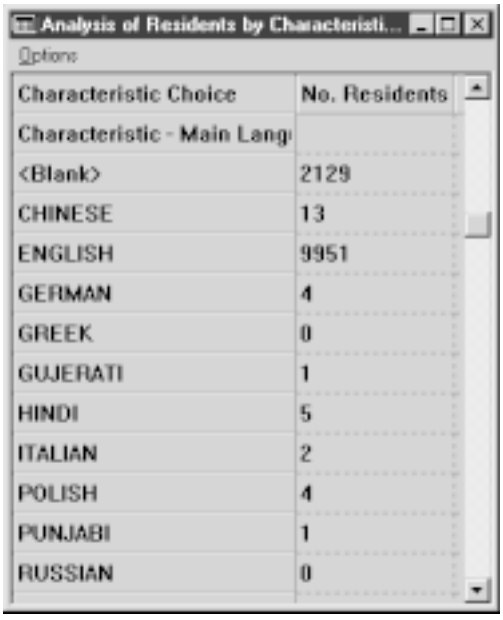


Figure 5.7. Each characteristic choice is displayed together with the number of residents who possess that choice.

accuracy of the data entered by your operators, and hence the analysis is as good as the accuracy of the classification of residents using characteristic choices.

Why use Analysis of Residents by Characteristic?

The reasons you might employ this analysis will vary according to the types of characteristic information you store within your database. However, to take the example used here, an analysis of first language might usefully show whether there is a need for call operators who can speak languages other than English. You might expect a control centre in Wales to require some Welsh speakers, but some language needs might be surprising. Although many Hindi speakers can also speak English, as they become older and some become confused they are more likely to lose their ability to speak any second languages, such as English.

Analysis of Dwellings by Characteristic

This analysis is similar to the last analysis, described above, except that the analysis is of dwelling characteristics rather than resident characteristics. Although the results are for dwelling characteristics rather than resident characteristics, it is still possible to narrow the analysis by selecting various resident criteria from the Residents tab (see figure 5.8).

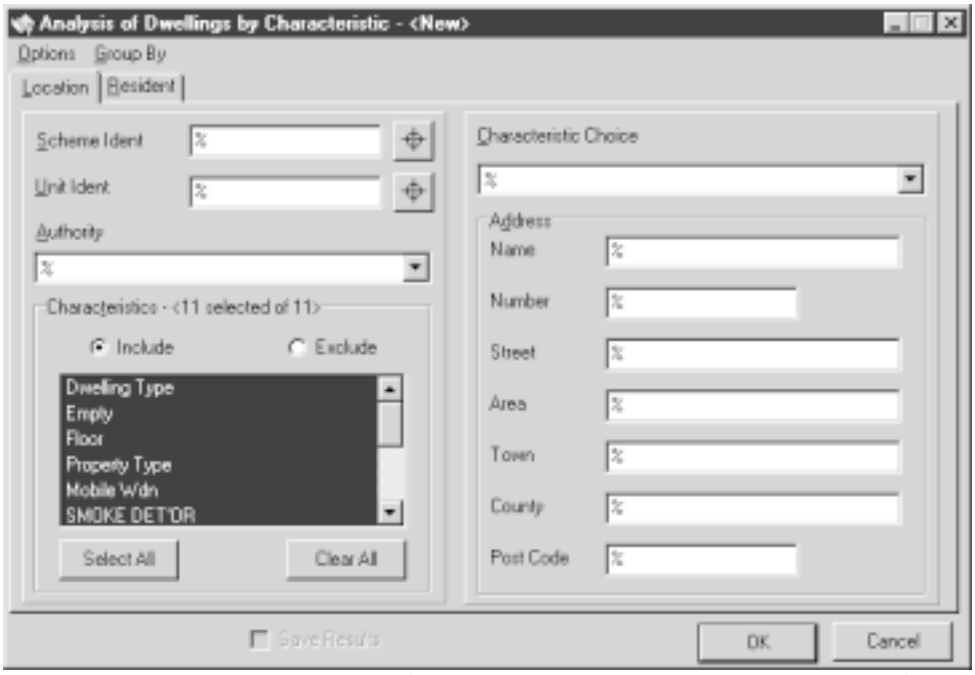
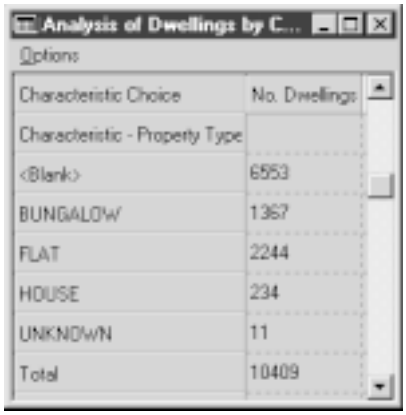


Figure 5.8. The criteria that can be set for this report are much the same as the criteria for other reports, except that specific dwelling characteristics can be included or excluded from the analysis.

Example results for this analysis can be see in figure 5.9. Each of the dwelling characteristics selected is listed, together with all of their choices. Besides each choice is the number of dwellings that have been assigned that characteristic choice. Again, it is important to remember that the accuracy of this analysis spends upon the accuracy with which dwellings have been assigned to categories (characteristic choices).



Characteristic Choice	No. Dwellings
Characteristic - Property Type	
<Blank>	6553
BUNGALOW	1367
FLAT	2244
HOUSE	234
UNKNOWN	11
Total	10409

Figure 5.9. Each characteristic is listed, together with the available choices and the numbers of dwellings with those choices.

Why use Analysis of Dwellings by Characteristic?

The use to which you might put this analysis depends upon the characteristics you have set up within your database. However, to consider the example used here, the Property-type characteristic might be of particular use when planning changes in the services offered. Clearly, cleaning the windows in multi-story flats is a quite different proposition to cleaning the windows of bungalows. On the other hand, delivering meals on wheels to a set of flats might be easier than delivering meals to a set of houses distributed over a number of different streets.

Analysis of Schemes by Characteristic

Schemes can also be analysed by characteristic, although you will notice from figure 5.10 that the Residents tab is not present. This is because schemes do not have residents. Schemes have scheme dwellings and these scheme dwellings have residents, but the schemes themselves have no residents. As before, it is possible to select any number of characteristics to include or exclude from the analysis. In the example shown in figure 5.10 the analysis has been restricted to just the schemes managed by Cavalier Housing, using the Authority field.

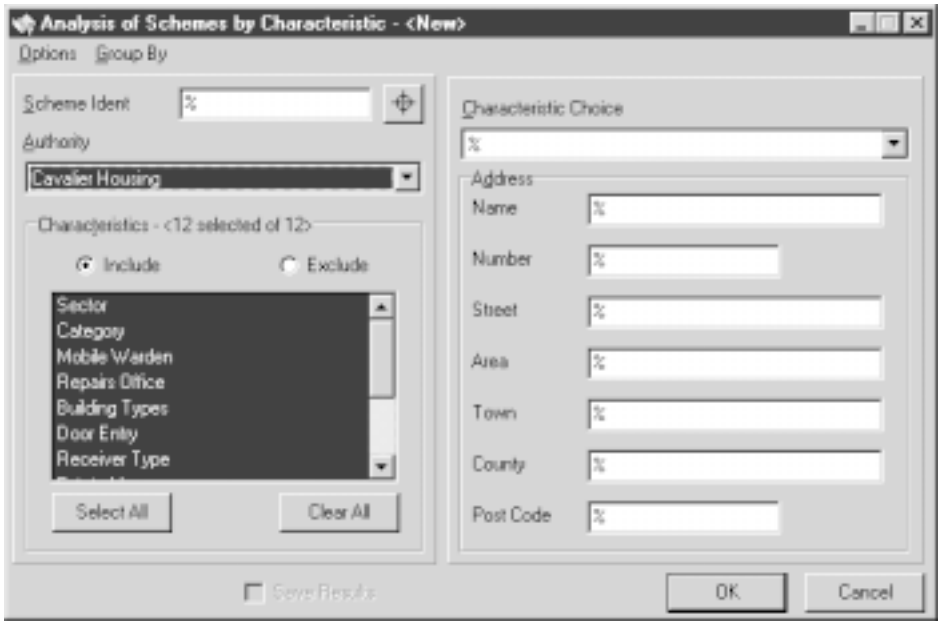


Figure 5.10. You can use the criteria window to include or exclude a number of different scheme characteristics from the analysis.

The results for an Analysis of Schemes by Characteristic can be seen in figure 5.11. As you will see, the numbers of schemes that possess each characteristic choice is displayed. Once again, it is important to recognize that this sort of analysis relies upon the accuracy of the data. If operators do not accurately and consistently assign schemes to their appropriate characteristics then any analysis is going to be unreliable.

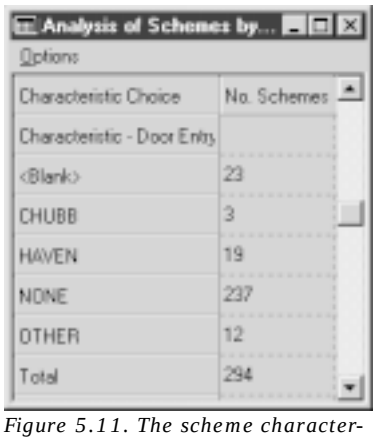


Figure 5.11. The scheme characteristic choices are listed, together with the number of schemes that possess the scheme choices in question.

Why use Analysis of Schemes by Characteristic?

Again, the use to which you might put this analysis depends upon the characteristics you have set up within your database. The example used here involves the type of door entry system used at each scheme. This can be useful when planning new investment, as supporting old and one-off technology for just one scheme can be expensive.

Analysis of Dwellings by Number of Residents

As you can see from figure 5.12 the criteria you can use to narrow the analysis are the same as the criteria you can use in most reports described in this chapter. You can narrow the analysis by selecting residents according to names, titles or residents' characteristics, as well as keywords.

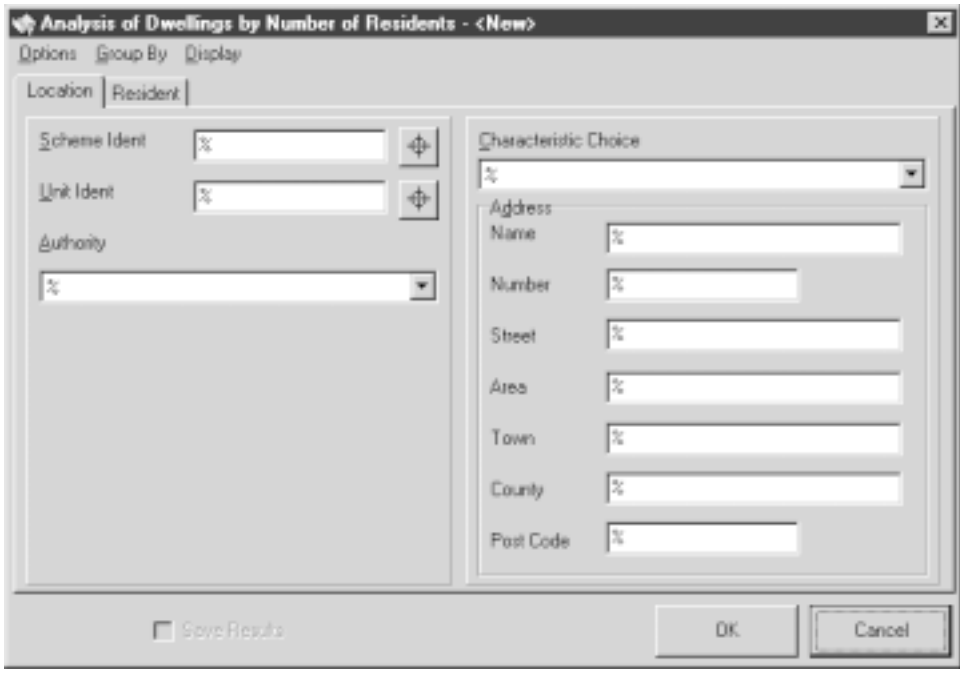


Figure 5.12. The range of criteria that can be set for this report is the same as the criteria for many of the other reports.

You can also select parts of an address, an authority or ranges of scheme or dispersed dwelling identification numbers to narrow the focus of the analysis.

The number of dwellings with 1, 2, 3, 4 or above residents are listed in the results (see figure 5.13). You can also use the Display menu to display these results as percentages rather than just numbers.

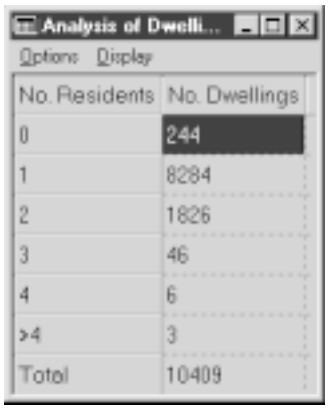


Figure 5.13. The numbers of dwellings with no residents, with one resident, with two residents, etc. are listed in fixed bands.

Why use Analysis of Dwellings by Number of Residents?

This analysis will show you how many dwellings remain unoccupied (i.e. have no residents). It also shows you how many dwellings are shared. This analysis could be restricted to one authority or another and be of use in providing information on occupancy to that authority, providing the information within your database was kept up-to-date. If performed regularly using a batch run (see the next chapter) it could also be used to plot trends in multiple and single occupancy over time.

Analysis of Contacts

The criteria you can set to narrow the scope for the Analysis of Contacts are different to the majority of the reports dealt with in this chapter. The Contact Type field (see figure 5.14) allows you to select just one type of contact to analyse, such as Brother, Daughter, etc. You can further restrict the analysis by selecting the Contacts radio button rather than the All radio button. The Contacts radio button will restrict the analysis to all contacts except Care Managers. You should recall that Care Managers are a special type of contact - one that normally has access to some records within the Vision database. Likewise, the Care Manager radio button restricts the analysis to just Care Managers.

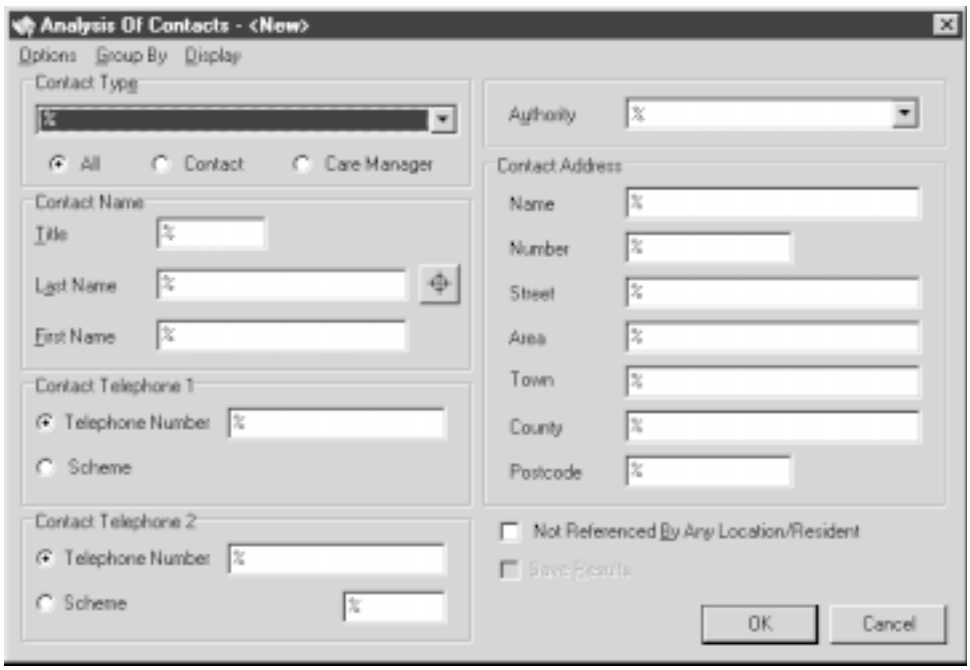


Figure 5.14. The Analysis of Contacts criteria window.

You can also see from figure 5.14 that you can narrow the analysis by selecting titles, first names or ranges of last names. You can also select parts of an address or select just one authority to analyse from the Authority field.

Contact Type	Scope	Total Contacts
CARE MANAGER	Resident	16
CONSULTANT	Resident	7
DAUG-IN-LAW/KEY	Resident	65
DAUGHTER	Resident	1856
DAUGHTER-IN-LAW	Resident	68
DAUGHTER/KEY	Resident	1884
DAY CENTRE	Resident	46
DOCTOR	Resident	469
EM.CON NO.1	Resident	2477
EM.CON NO.2	Resident	2444
EM.CON NO.3	Resident	636

Figure 5.15. The Analysis of Contacts results window.

As you can see from figure 5.15, the total numbers of each type of contact are displayed, together with their scope. Scope was explained in Chapter 4 of Volume C of this manual. To recapitulate, the scope of a contact type is the range of types of record it can be linked to. Some contact types can only be linked to a resident. Others can only be linked to a dwelling. Some can only be linked to a scheme, whereas others can be linked to any location, such as a scheme, dwelling or security location.

Why use Analysis of Contacts?

This analysis shows the numbers of different types of contact in the database. It is always possible that you are maintaining some records on contacts that you do not need. By using the calls report which shows which types of contact are called most frequently (see the last chapter in this volume of the user manual) in conjunction with this report you can see if you are keeping records of some types of contact which are, in reality, never used. This analysis can also show you if there are some contact types that are not used.

Analysis of Stock

You can analyse the stock using criteria from the three tabs: Equipment, Owner, Location (see figure 5.16). You can use the Type Model and Status fields to restrict the analysis to just a particular type of equipment, to just a particular model, or to just equipment that has a particular status, such as 'In stock' or 'Borrowed'.

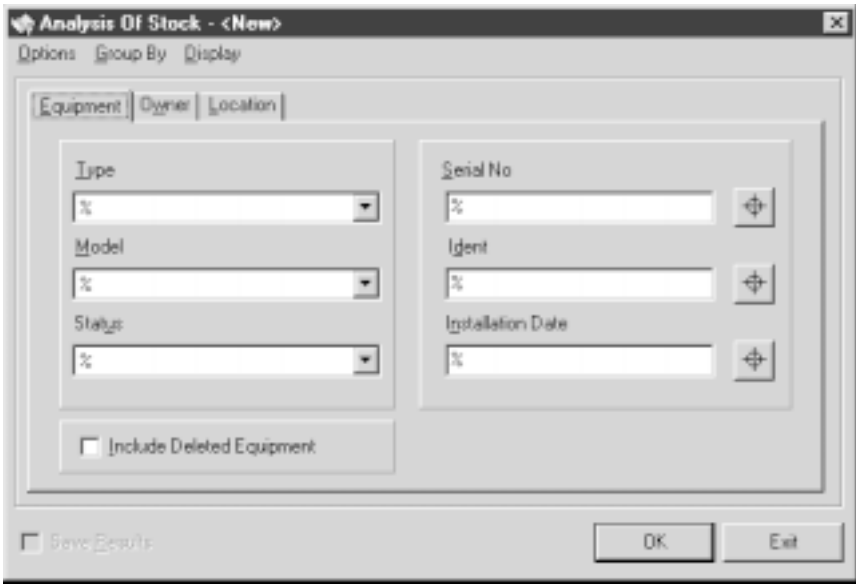


Figure 5.16. An Analysis of Stock can be narrowed using various features of the equipment.

The Serial Number field can be used to perform an analysis restricted to just a range of serial numbers, while the Ident field can be used to restrict the analysis to equipment within a range of equipment identification numbers. You can also narrow the analysis to equipment installed within a certain date range using the Installation Date field. The Use Deleted Equipment tick box will widen the analysis to include any equipment that is marked as deleted, but has not been removed

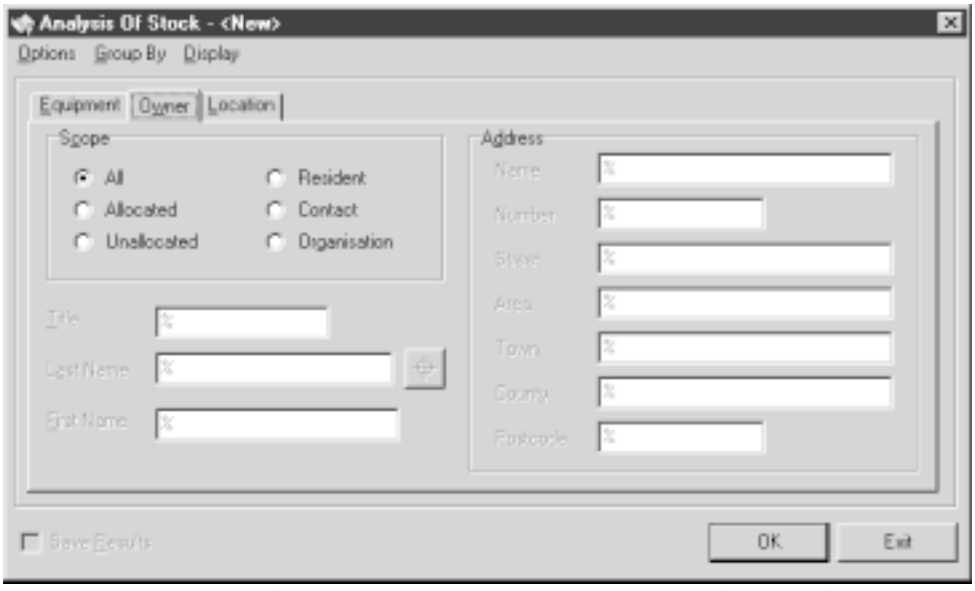


Figure 5.17. An Analysis of Stock can also be narrowed using various features of the owner.

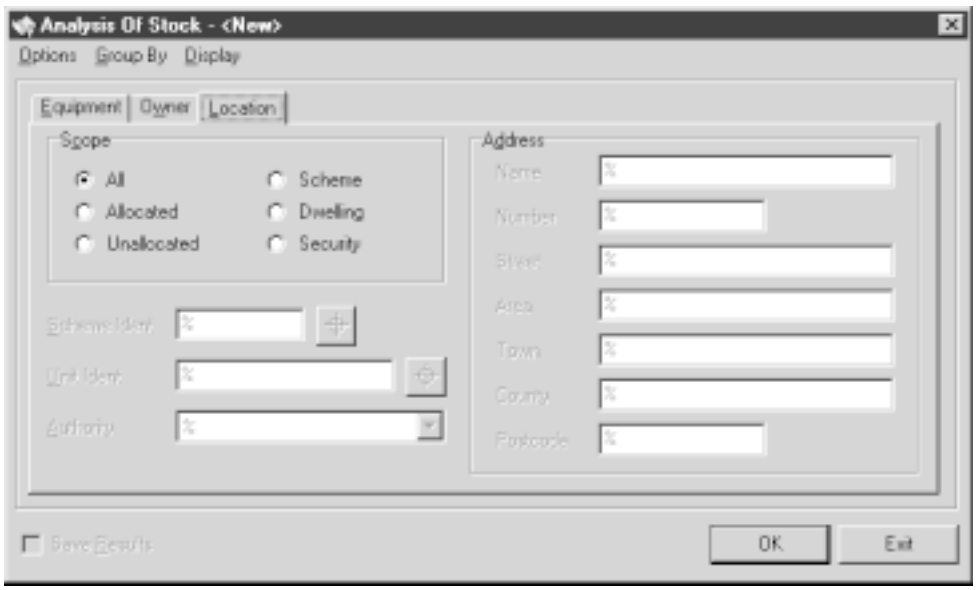


Figure 5.18. An Analysis of Stock can be narrowed using various features of the location.

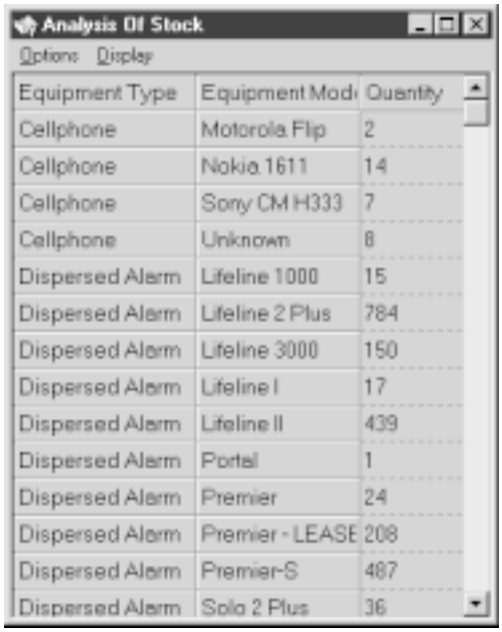
from the database using a purge (see Chapter 5 from Volume C for details of how to perform a purge).

If the equipment has been allocated to a particular owner then the analysis can be restricted using the scope radio buttons displayed in figure 5.17. You can analyse equipment that is allocated or unallocated. If you select Allocated then this will include all equipment, regardless of whether it has been allocated to a resident, a contact or an organisation. The Resident, Contact and Organisation radio buttons can also be used to further restrict the analysis to just these types of owner.

You can also enter elements of the address, maybe to restrict the analysis to just one town for example. The address fields become available if the Allocated, Resident, Contact or Organisation radio buttons are selected. The fields that allow you to enter a title, first and second name become available if the Resident or Contact radio buttons are selected.

The Location tab (see figure 5.18) is very similar to the Owner tab, except that the radio buttons allow you to restrict the analysis to schemes, dwellings and security diallers. If any of these locations are selected then the address fields become available. It is also possible to enter ranges of scheme or dispersed unit identification numbers, and further restrict the analysis to one authority by selecting the authority from the Authority field.

The results for an Analysis of Stock can be seen in figure 5.19. The Equipment Type is listed for each Equipment Model, next to the numbers of each.



Equipment Type	Equipment Mod	Quantity
Cellphone	Motorola Flip	2
Cellphone	Nokia 1611	14
Cellphone	Sony CM H333	7
Cellphone	Unknown	8
Dispersed Alarm	Lifeline 1000	15
Dispersed Alarm	Lifeline 2 Plus	784
Dispersed Alarm	Lifeline 3000	150
Dispersed Alarm	Lifeline I	17
Dispersed Alarm	Lifeline II	439
Dispersed Alarm	Portal	1
Dispersed Alarm	Premier	24
Dispersed Alarm	Premier - LEASE	208
Dispersed Alarm	Premier-S	487
Dispersed Alarm	Solo 2 Plus	36

Figure 5.19. The Analysis of Stock displays the different equipment types, models and the numbers which are held.

Why use Analysis of Stock?

Analyses of stock is good for providing a snapshot of your current position regarding stocks of equipment. It can also be used for more sophisticated analyses. For example, if one gas fitter had possibly misfitted just one model of gas-fired central heating then it would be possible to search for just that model over a range of installation takes to see how many units might be affected.

The Analyses of Stock report can also be useful when run in batch mode. Trend analyses can show how available stock has varied over time. This can be useful when attempting to predict demand by looking for seasonal variations.

6 Batch Reports and Trend Analysis

The chapter deals with the task of setting reports to run automatically. A single report can be set to run once, or it can be set to run every day, every week or every month. The second part of this chapter explains trend analysis. Trend analysis allows you to use data that has been saved from reports that are run automatically to plot changes over time and hence see trends.

Batch Reports

Reports can be set to run automatically, at a time of your choosing. You do not need to remember to run the daily, weekly or monthly analyses as Vision will do this for you. Moreover, given that some analyses are time-consuming, you might wish your computer to run them at one, two or three in the morning, when you are comfortable in bed at home and do not need to use your computer. The saved or printed report can be waiting for you the next morning, without any effort on your part.

Enabling batch reports

The scheduler. Everything that runs automatically at a particular time is started by Windows NT Scheduler. The Scheduler is called a 'service', and must be running on the client computer that is to run the batch reports. Each client computer has its own scheduler, and both the computer that undertakes automated backups and the computer that undertakes batch management reports must each have their scheduler running. For information on how to set the scheduler running see Automating Backups and Other Tasks in Chapter 5 of Volume C of this manual.

Management Reports. The Scheduled Events window (see figure 6.1) has a tab called Management Reports. Here you can set the frequency and time at which Management Reports run. Let us assume that the frequency is set to Daily and the time to 1am. As a result of this setting the scheduler will send a message to Management Reports every day at 1am telling it to run any reports it needs to run. The Batch facility within Management Reports then gets a list of any reports it has to run and runs them. Usually, there will be only daily reports. However, every seven days there will be some weekly reports it will run, and every month there will be some monthly reports to run. As a result you should still set the frequency to Daily even if you only plan to run weekly or monthly management reports at first.

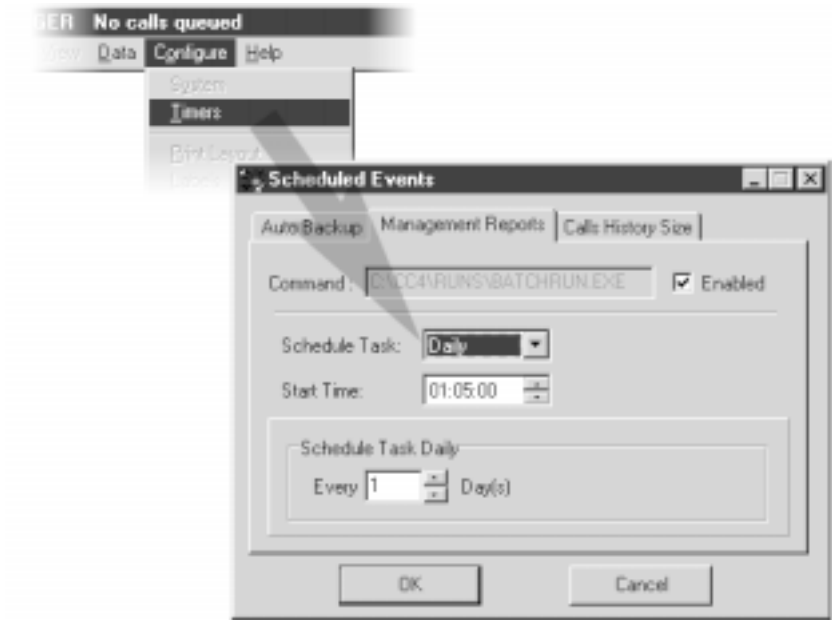


Figure 6.1. You need to select a frequency and a time for management reports to run.

Only use one computer. Batch management reports should only be set to run on one computer, although it does not have to be the same computer that deals with backups and purges (the archive machine).

Relative dates

Something you may have already noticed when considering the reports described in the previous chapters of this volume of the user manual, is that you can set either absolute or relative dates (see figure 6.2). For example, you can set a date of 1 June 1999, or you can set a date of Yesterday, or last week or last month. These relative dates are essential for batch reports.

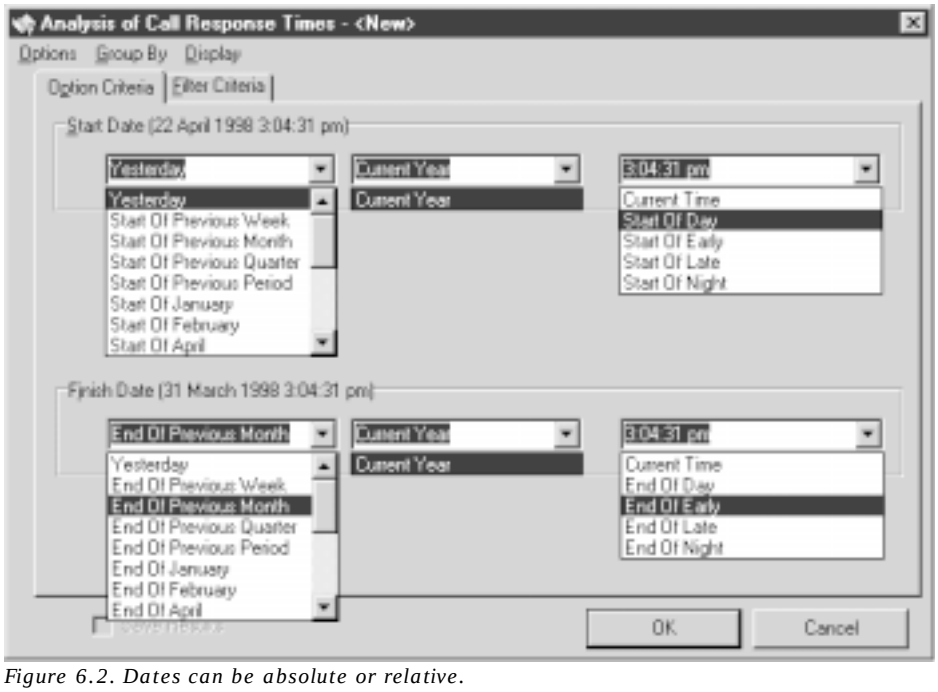


Figure 6.2. Dates can be absolute or relative.

If you had set a report to analyse call response times between 1 June 1999 and 30 June 1999 then repeating this analysis using the batch facility would serve no good purpose. All that it would produce is the same report, using the same dates. If you wish to look at call response times every month then you need to set the dates for your analysis to 'last month' - a relative date rather than an absolute one.

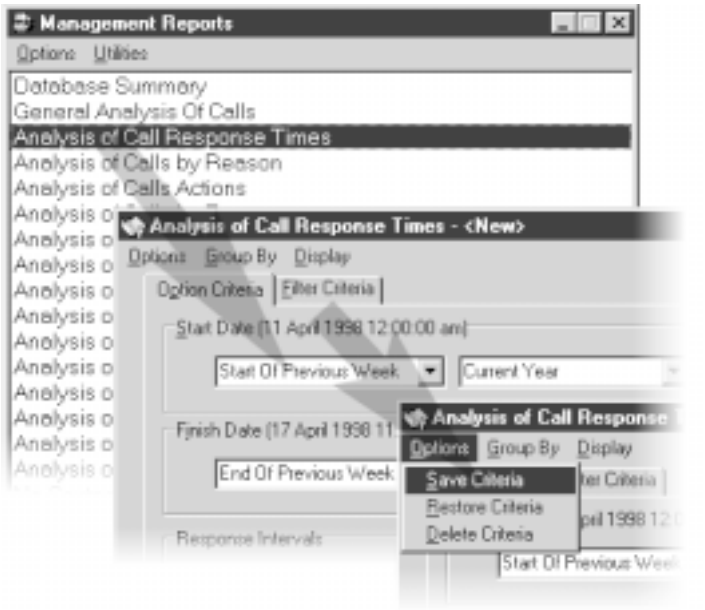


Figure 6.3. To run a batch report you need to have saved the criteria for a report using relative dates.

Starting the week. One point to note regarding relative dates is when the week starts. Most of us consider the week to start on Sunday, or even Monday. However, within PNC3 Vision the week starts at midnight on a Friday night and ends at a second before midnight the following Friday.

Setting-up a Batch Report

The first step is to select a report from the list of Management Reports, and to enter and save your criteria for this report (see figure 6.3). This can be done for any of the management reports dealt with in the last three chapters. However, unless the report is to run only one, the criteria within your report must use relative dates, such as Yesterday, Last Week, rather than absolute dates and times, such as 9am 11 June 1999.

The next step is to select Batch Editor from the Utilities menu in the main list of Management Reports (see figure 6.4). You will then be presented with a list of management reports that are already set-up to run automatically. If none have been set up then this list will be empty. You should then selected New from the Options menu (see figure 6.4). This will produce the list of reports you can see in figure 6.5.

When presented with the New Batch Entry window (see figure 6.5), you first have to select the report you wish to run. Until you do this you cannot select the criteria you wish to use, as you are only shown the saved criteria for the particular report you have selected. The next step is to select the criteria you wish to use from the Saved Criteria field. If you cannot find any listed in this field/menu then you need to click the Cancel button and open the report from the main Management Reports window and create the criteria you need for your batch report.

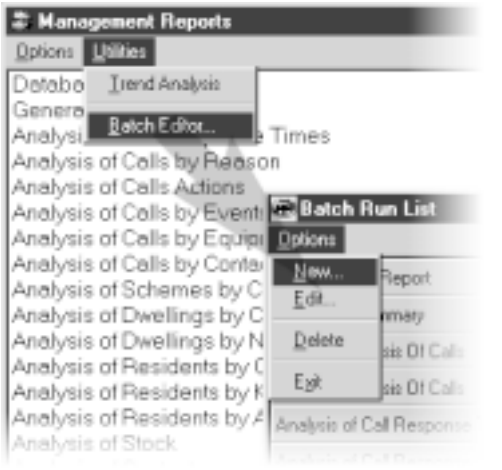


Figure 6.4. A new batch report can be created by selecting New from the Options menu.

Frequency. The next step is to select the Frequency to Run. If you have used absolute dates or times in your saved criteria you may find that your only choice is 'once only'. If you have used relative times and dates then you should be able to choose from a range of periods that will be available. The choices with which you are presented depend upon the time periods of your analysis. For example, if you select an analysis that runs from the start of the previous week to the end of the previous week then you will have the option to run the report weekly. If you select the start of the previous month as the start date and the end of the previous month as the end date then you will only have the option of running the report monthly. Moreover, monthly reports always run on the first day of the next month, which is one reason for ensuring that the Timer for Management Reports is set to run every day (to make sure that the first day of the month is not missed). See Chapter 5 of Volume C for details of how to start the Windows NT scheduler and the Timer.

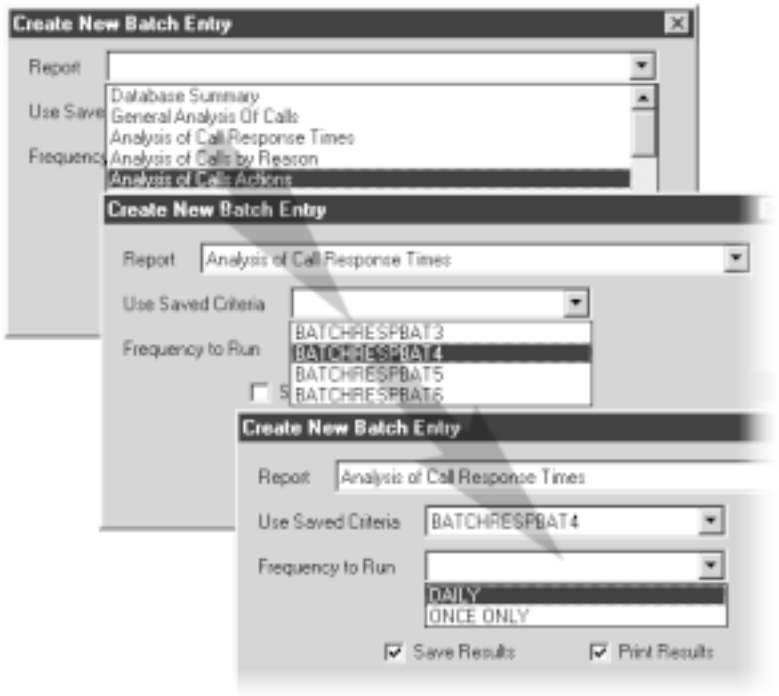


Figure 6.5. You should first select the report you wish to run before selecting the set of saved criteria you wish to use.

Saving and Printing Results. There are then two tick boxes called Save Results and Print Results. If you select Save Results you will not be able to see or print the results, but you will be able to use them in a trend analysis. Consequently, you should usually select Print Results as well as Save Results. Saved results will allow you to plot changes using the Trend Analysis facility. If you do not save your results then you will not be able to perform a trend analysis for the report in question.

Pressing the OK button. Once you press the OK button you have done all you need to do in order to set up your report to be created regularly using a batch run. You should however, check your printer to ensure that it is working as it should. You should also ensure that this printer is one that is either connected directly to the client computer that is to perform the management reports, or connected to the server. If the selected printer is connected to another client, and that client happens to be turned off when Management Reports runs automatically, then the printer will be unavailable and the report will not be printed.

You should also note that once you press the OK button you cannot return to change any of the settings. You can edit a batch entry, but you will find that this editing is limited to selecting the Save or Print results tick boxes, and that nothing else can be selected. Consequently, do not press the OK button until you are sure of the settings you have chosen, otherwise you will have to delete the batch entry and start again with another batch entry.

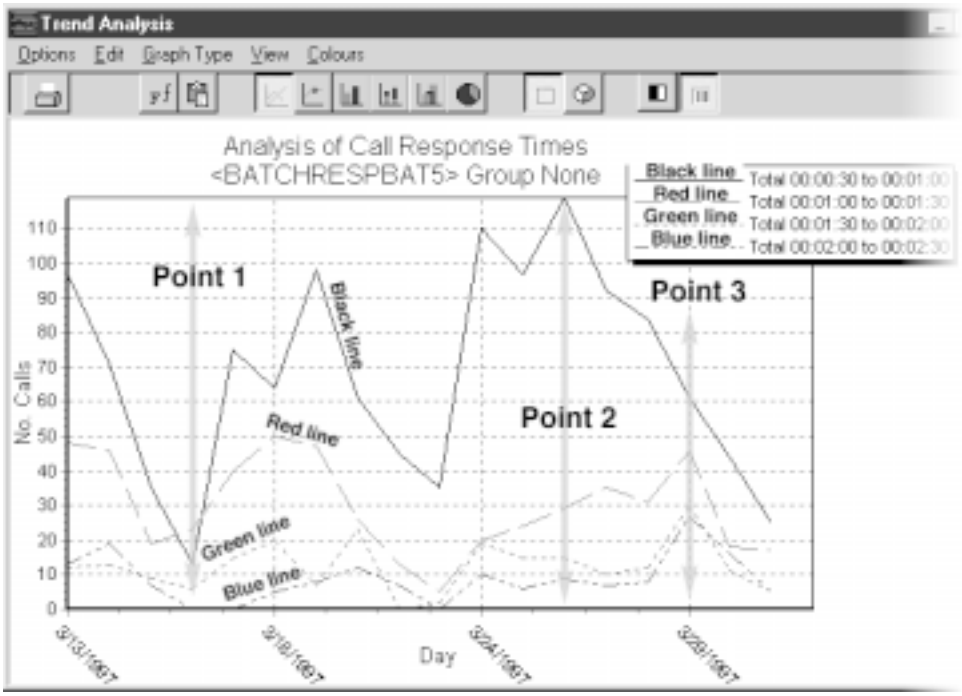


Figure 6.6. A plot of call response time.

Running when logged off. It is possible for Management Reports to run even when you are not logged on to the computer. This facility has been added so that Management Reports can run at any time that is convenient, including the early hours of the morning. However, in this situation printouts can only be sent to a printer directly connected to the computer running the reports - they cannot be printed on a network printer. This is due to an underlying Windows NT limitation.

Trend analysis

Trend analysis plots graphs using the data you have saved from reports running in batch mode. It cannot plot graphs from any other data (i.e. reports you have run manually). Before we review the process of creating a trend analysis it might be useful to first consider their advantages.

Figure 6.6 shows a plot of call response times over four weeks for a report that ran daily. You may recall that call response time measures the time it takes from a call appearing on a call station to the time when a call operator selects the call. The graph has four lines. The black unbroken line shows how many calls were answered in a time between 30 seconds and one minutes. The other three lines have various dashes and are red, green and blue, and these represent the numbers of calls that were answered after one minute, after one minute, thirty seconds and after two minutes.

Three blue arrows marked points 1, 2 and 3 have been marked on the graph in figure 6.6. At point 1 you may notice that the number of calls answered in under one minute (see the black, unbroken line) dropped to just twelve calls. Yet, the total number of calls was not high. By point 2 120 calls were answered in under one minute (reading from the vertical X axis on the left-hand side), suggesting a dramatic improvement, despite a considerable increase in the numbers of calls taken. By point 3 performance had dropped again, with the numbers of calls answered in less than one minute down to 60, and a rise in all of the other three categories of call time.

What you can see from a graph such as that shown in figure 6.6 is a trend over time. This can allow you to identify problems, such as peak loads or times when performance fell below an acceptable level.

Performing a Trend Analysis

Trend Analysis can be selected from the Utilities menu in the main Management Reports window (see figure 6.7). This will produce the window shown in figure 6.8.

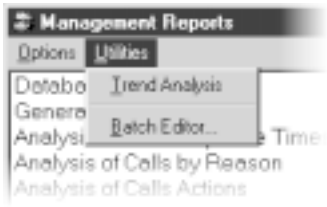


Figure 6.7. Access to Trend Analysis is via the Utilities menu.

1. Select the report. There are four initial steps to producing a trend analysis. The first is to double-click on the report you wish to use. The different reports are displayed as small folders. The report folder you double-click on will open to display the sets of saved results that are available for that report. These sets of saved results will have the same name as the saved sets of criteria used to automatically create them using the batch facility.
2. Select the set of saved results. The second step is to double-click on the saved set of results you wish to use (see figure 6.8).
3. Select the group you wish to analyse. This will expose a list of miniature files, one for each grouping in the analysis. In the example shown in figure 6.8 the analysis was not grouped, and so just a single file called None was displayed. This file was selected by clicking on it.
4. Once the group file is selected (called None in this case), the Select Period button is pressed to produce the window called Select Period to Analyse, shown to the front of figure 6.8. The Select Period button can be better seen in figure 6.9. This is the fourth step - you select the start and end period of the trend you wish to plot.
5. When the period to analyse has been selected, a list of statistics you can select from is presented in the lower field of the Trend Analysis window. The fifth and

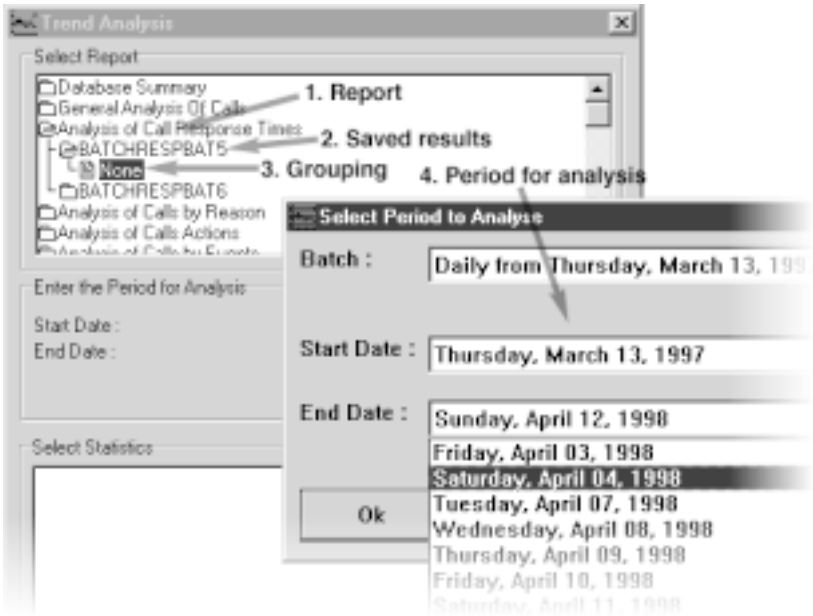


Figure 6.8. There are four initial steps to producing a trend analysis.

final step is to select the statistics you wish to plot. As you can see in figure 6.9, four statistics were selected: the total number of calls answered between 30 seconds and one minute; the total number of calls answered between one minute and one minute thirty seconds; the total number of calls answered between one minute thirty seconds and two minutes; and the total number of calls answered between two minutes and two minutes thirty seconds.

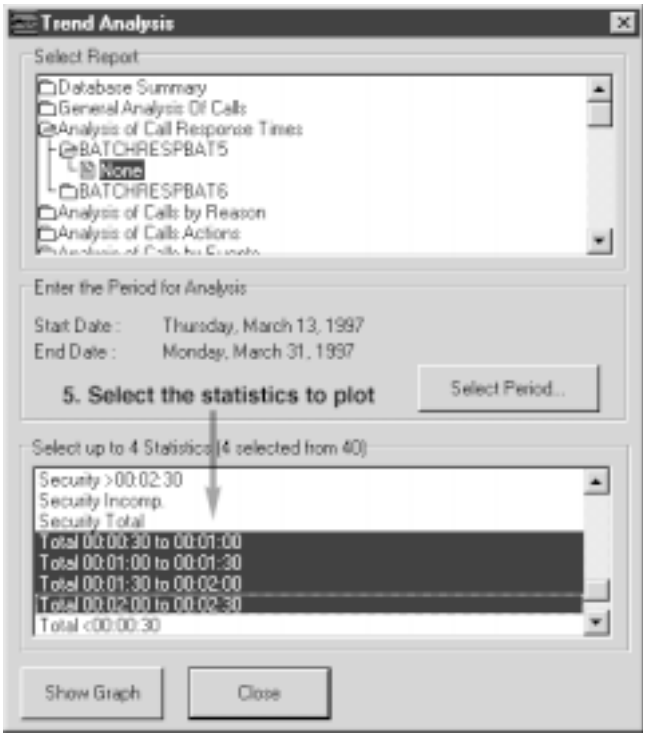


Figure 6.9. The final stage of creating a trend analysis is to select the statistics you wish to use.

Once you have pressed the Show graph button (see figure 6.9) you will be presented with a graph of the results. In fact, this is the analysis for the graph initially shown and discussed in figure 6.6.

Selecting the graph type

As you can see from figure 6.10, the data looks quite different when plotted as a bar chart rather than as a line graph (see figure 6.6). You can select the different types of graph using the buttons at the top of the window, or the Graph Type menu (see figure 6.10). You can switch between black and white graphs, which are useful for printing, and colour graphs. Once you have selected the type of graph you wish to use, you can print the graph using the print button (see figure 6.10).

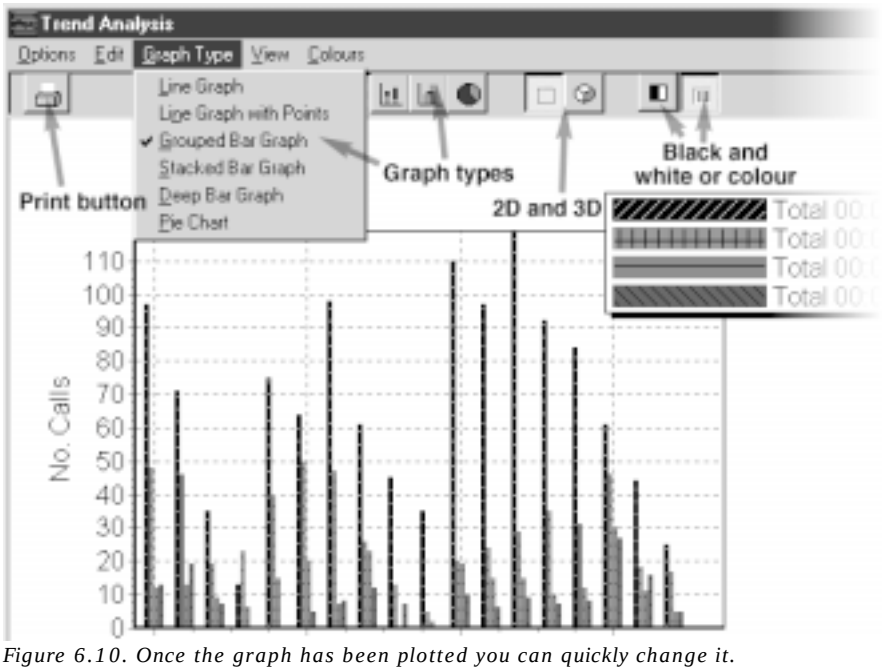


Figure 6.10. Once the graph has been plotted you can quickly change it.

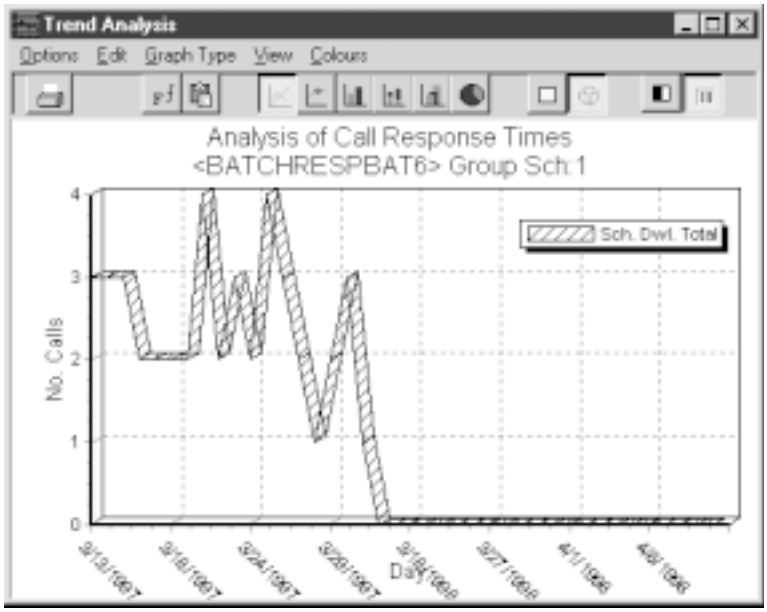


Figure 6.11. Three-dimensional graphs are popular but misleading, and most statisticians and mathematicians will strongly advise you to avoid them.

Which graph type should I select? Some types of data are not suited to some types of visual presentation. However, this complication has been dealt with for you, as Vision only allows you to select graphs that suit the data you have analysed. Consequently, if you are not sure which type of graph to use then try all of them in turn until you get a graph that most clearly represents the data. If you accidentally select a graph type that is not suited to the data you will be shown a message that says that the graph type is unavailable.

The dangers of three-dimensional graphs

Two-dimensional graphs are often viewed as old-fashioned and are not seen as being as attractive as three-dimensional graphs. For this reason three-dimensional graphs have been included within the Management Reports facility of Vision (see figure 6.11). However, there is considerable evidence to suggest that people are not as good at reading three-dimensional graphs as they are two-dimensional ones. Put simply, the human perceptual system consistently overestimates the importance of large figures and underestimates the importance of small ones when graphs are presented in three-dimensional form. This is because we see them as volumes. Unless your graphs are just generally illustrative, it is better to present graphical information in just two dimensions.