CALLING ALL FORCES: IMPROVING POLICE COMMUNICATIONS ROOMS

SUMMARY

Communications rooms are important to overall police performance and the public image of the service. They are usually the first point of contact members of the public have with the police when they need their help. They are the hub of reactive policing.

Nationally they cost around £160m a year in provincial police forces in England and Wales, equivalent to over 5% of police expenditure (Exhibit 1). They receive around 40 million calls for assistance including more than 12 million on 999 and other emergency lines. They are responsible for deploying around 65,000 operational officers to 17 million incidents of which around 6 million require an urgent response.

Exhibit 1
COST OF POLICE COMMUNICATIONS ROOMS
The annual cost is around £160m, equivalent to over 5% of gross police expenditure...
The public or the delay before patrol officers arrive at incidents.

The approach of the police contrasts with that of the fire and ambulance services. Both set national standard times for answering calls, activating responses and arriving at incidents. They also monitor performance systematically and problems are reported to senior management.

Communications room operators implement force policy on the type of officer to send to incidents and the degree of urgency. This is an important operational matter, with major resource implications. To keep a double-crewed rapid response vehicle on the road 24 hours a day costs £300,000 a year; it is therefore important that it should be used effectively.

Forces should estimate the number of calls requiring urgent and non-urgent responses; and the number requiring a rapid response vehicle, a beat officer, a specialist and so on. Against such expectations they should then monitor how operators actually grade responses and the type of resources they despatch.

The cost of police communications varies between forces – from £1260 per police officer per annum in one force visited to nearly £2160 in another. Based on analysis of data from the study forces, there is potential to reduce costs nationally by around 15% – equivalent to £25m a year.

This can be achieved by making more efficient use of staff and by increasing the use of civilians. Forces could use staff more efficiently by:

— seeking economies of scale. Efficiency increases sharply as the number of operators in the room increases to four, more gradually thereafter. Forces should therefore avoid communications rooms which do not have sufficient workload to require at least four operators to be on duty for the majority of the day.

— Using more flexible shift systems. For example, one large communications room matches staffing levels to variations in workload over the 24 hour period thereby saving £500,000 over a traditional four shift system.

— Providing suitable support systems, such as modem telephone networks and information systems.

In a number of forces more than two-thirds of communications staff are police officers, but the majority operate with more than 50% civilians.

In some forces, improvements in service can be achieved only by reorganising into fewer, larger rooms. Reorganisation can involve major upheaval and considerable cost. It should be undertaken only if there is a compelling reason. Forces with sub-divisional communications rooms and dual-tier communications structures should give close consideration to reorganisation. For other forces, however, the emphasis should be on improving efficiency and effectiveness within the existing structure.

**INTRODUCTION**

**1** Police communications rooms are a vital link between the public and the police force. They are the hub of police operations (Exhibit 2). Their effectiveness is a key factor in determining the quality of service provided to the public and ensuring the effective use of police officers on patrol.

**2** The basic function of police communications rooms is to receive calls for police assistance and despatch officers in response. In a year, the communications operation in an average sized force:

— receives 1,000,000 calls, of which perhaps 300,000 are from 999 or other emergency lines;

— deploys 1500 operational officers to 400,000 incidents, of which perhaps 150,000 require urgent responses;

— employs 180 staff and costs nearly £4m to run.

The quality of service provided has a major influence on the public’s perception of the police. In a public interview survey published in *Operational Policing Review* the public ranked answering 999 calls as the second most important function of the police.

**3** The rooms have a major impact on the effectiveness of patrol officers. They determine the force’s initial response to an incident. They decide whether an operational response is required or whether the matter can be concluded over the telephone or by referring the caller to another agency such as the local authority’s social services department, the AA/RAC or RSPCA. If an operational response is necessary, then they must decide which type of resource should be sent (a double crewed rapid response vehicle or a local beat officer etc) and with what degree of urgency (immediately, within one hour, within

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* Operational Policing Review, a report of a joint project by the police staff associations and published by the Joint Consultative Committee, price £25.
POLICE COMMUNICATIONS

Police communication rooms are the hub of police operations...

4 These are important decisions. On some occasions they may involve matters of life and death. They always involve major resource commitments. It costs around £300,000 a year to keep a double-crewed rapid response vehicle on the road 24 hours a day – the equivalent of ten community beat officers eight hours a day. Many matters can be dealt with more effectively by a scheduled visit from a local beat officer than by an immediate response from two officers in a fast car. By reserving urgent responses for incidents that require them, the communications room can ration scarce resources and enhance overall effectiveness.

5 When members of the public contact a police communications room, the circumstances are often causing them some stress. On these occasions a high level of sensitivity, diplomacy and inter-personal skill is necessary. These requirements should not be understated, but communications room staffs’ role in respect of command of resources should not be overstated. All of their decisions are important but the majority are relatively routine. They despatch resources; under normal circumstances they do not command them, though they may be responsible for co-ordinating a police response. Normally, decisions are made by junior staff – half of them are civilians and most of the others are constables. They act within a framework of force policies and guidelines, but must apply these guidelines with care and sensitivity.

6 The strategic role of senior managers in relation to communications is quite straightforward. It requires:

- definition of service standards and deployment policies;
- regular monitoring of performance, including customer surveys of both callers and patrol officers;
- periodic reviews of the force communications structure.

7 Because of the central role of communications rooms in the resource allocation process, the Audit Commission has reviewed their structure and operation as part of its programme of work in provincial police forces. It is an opportune time to do so since the
Exhibit 3
THE IMPACT OF TECHNOLOGY ON COMMUNICATIONS ROOMS

Developments in communications and computer technology have a direct impact on police communications rooms...

<table>
<thead>
<tr>
<th>NEW DEVELOPMENTS</th>
<th>REDUCE COST</th>
<th>IMPROVE SERVICE TO PUBLIC</th>
<th>INCREASE EFFECTIVENESS OF PATROL OFFICERS</th>
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</thead>
<tbody>
<tr>
<td>TELECOMMUNICATIONS</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>- New public networks</td>
<td>Cheaper voice and data communications between police stations and communications rooms</td>
<td>Greater flexibility to respond to changing public demand for telephone access</td>
<td></td>
</tr>
<tr>
<td>- New private exchanges</td>
<td>Tighter management control – call-logging, internal billing, line usage monitoring, monitoring response times. Better system planning</td>
<td>More facilities – answering and message services, hunt groups, conference calls</td>
<td>Greater flexibility to route calls, subdivide 999s to local rooms</td>
</tr>
<tr>
<td>- Support equipment</td>
<td>Tape recorders to allow replay of all calls to check unclear messages</td>
<td>Fix machines to allow fast transmission of paper records, e.g. photographs, fingerprints, handwritten messages</td>
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<tr>
<td>RADIO</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>- UHF networks</td>
<td>Allow wide coverage from local communications rooms to more patrol officers</td>
<td>Better communications access to travelling staff and officers on call. (Improved location finding systems using radio beacons or satellites in prospect)</td>
<td></td>
</tr>
<tr>
<td>- Cellphones and pagers</td>
<td>Better communications access to travelling staff and officers on call. (Improved location finding systems using radio beacons or satellites in prospect)</td>
<td></td>
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<tr>
<td>COMPUTERS</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>- Hardware</td>
<td>Smaller, cheaper machines allowing wider access to computer systems</td>
<td>Better information support systems, e.g. gueretees, call-out lists</td>
<td>Better information support systems, e.g. keyholders, building plans, licence holders</td>
</tr>
<tr>
<td>- Software</td>
<td>Faster and more comprehensive information service</td>
<td>Better information support systems, e.g. keyholders, building plans, licence holders</td>
<td></td>
</tr>
<tr>
<td>- PNC 2 (pending)</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

systems which underpin police communications are subject to rapid changes in technology (Exhibit 3). Developments in telephone, radio and computer systems require forces to reconsider their communications arrangements on a regular basis. A balance always has to be struck between the cost of major investment in new equipment and the potential gains from improved performance.

8 This paper reviews the success of forces in setting and meeting defined standards in their communications rooms, examines the impact of technological change and suggests ways in which performance can be improved. It is based on data collected from fifteen provincial police forces in England and Wales.

COMMUNICATIONS ROOMS AND THEIR FUNCTIONS

CALL RECEIVING AND RESOURCE DESPATCHING

9 The communications work of a force can be divided either on a geographical basis between rooms in different locations or on a functional basis, or both. Practice varies considerably between forces. A few divide responsibilities geographically, so that each room provides a complete communications service for a territorial sector of the force, i.e. a ‘single-tier’ communications structure. One or two smaller forces have a single room serving the entire force area. The majority, however, split the work both geographically and functionally. For example, a central room might receive all emergency calls and deploy force-wide resources using VHF but refer
non-urgent calls to a local room deploying local beat officers using UHF – a ‘dual-tier’ communications structure (Exhibit 4).

Exhibit 4
SPLIT OF FUNCTIONS BETWEEN COMMUNICATIONS ROOMS
In forces with dual-tier communications functions are split between the two tiers...

10 Most of the existing communications structures date from the late 1970s (Exhibit 5) when many forces centralised communications for response policing in single rooms serving the whole force area. Four factors made this both feasible and desirable:

(i) forces were allocated a limited number of VHF radio channels, best used for despatching rapid response vehicles throughout the whole force area. Centralised, force-wide despatch of these resources was unavoidable.

(ii) Having centralised the despatch of rapid response vehicles, forces wanted to centralise the receipt of the emergency calls to which they were responding.

(iii) This development suited the GPO (British Telecom). Few of its exchange areas were coterminous with police divisions and its equipment was unable to sub-divide calls automatically to route them below exchange level. The best match between exchange areas and police boundaries was at force level so, in many forces, the communications room at headquarters became the only point to receive 999 calls.

(iv) As the motorway network developed, these central force communications rooms assumed responsibility for answering motorway emergency phones and operating motorway matrix signs. This led inevitably to centralised communications for motorway police.

11 Local communications rooms continued to operate, however, as a lower tier of operation. In theory, they received local non-emergency calls and despatched local beat officers via UHF radio in response. In practice, the situation was more complicated. Many 999 calls do not require an emergency response. On the other hand, many ordinary calls to local police stations do relate to major incidents – the first call to alert the emergency services of the Clapham Junction railway accident was made direct to Battersea Police Station. Analysis in one force established that in a sample period 24% of 999 calls did not require an urgent response. Conversely, in the same period 22% of ordinary calls did. Either the calls themselves, or the messages about the calls, had to be transferred between the two tiers. Thus computer and communications systems were expanded to link local rooms to the centre.

12 But increased technical sophistication did not overcome the drawbacks inherent in a two tier communication system:

— the quality of service to the public is reduced by the need to handle some calls twice causing delay and increasing the risk of error.

— When a major incident develops, communications may have to be transferred from small local rooms to the central room or vice versa. When and how to effect the transfer on these occasions can be a matter for dispute.

— The quality of service to patrol officers can also be affected adversely. Local operators sometimes complain that central communic-
tions rooms despatch inappropriate resources – sending a distant rapid response vehicle, for example, when a locally controlled beat car would have been an adequate, and faster, response. Conversely, incidents which are reported initially as not being serious (and so are dealt with locally), but transpire to be more serious, are not always reported to the centre.

— Officers in VHF controlled patrol cars often carry UHF radios in order to maintain contact with both tiers. This can lead to conflict between the rooms.

13 Forces attempted to solve these problems by making their computer systems even more sophisticated. One important development was that of 'command and control systems'. These are sophisticated software packages which show the current whereabouts of each officer on duty, together with records of planned future shifts so that appointments can be made. They also incorporate incident handling systems which log the progress of an incident e.g. the time the call for assistance was received, its source, the type of response initiated and the means by which the incident was ultimately resolved.

14 These systems have not been a universal panacea, and current technological developments are prompting forces to reconsider the need for dual-tier structures.

15 British Telecom's System X exchanges allow more flexibility in the routing of calls. BT can now split 999s and other calls automatically into groups defined by the telephone numbers from which they originated. This allows forces to route 999 calls to local communications rooms. (One comp-

lication is the small but increasing number of 999 calls originating from mobile phones. The operator must rely on the location of the radio receiving mast to decide how the call should be routed. Each mast covers a large area which poses a problem similar to that which previously existed with BT. But the problem should disappear as additional masts and more sophisticated routing systems are installed).

16 In addition, the advent of compact computer systems and improvements in data communications networks have removed the economies of scale associated with centralised systems. And continuing restrictions on the number of VHF channels allocated to the police have caused forces to expand their UHF radio coverage. Improvements in UHF equipment and a more flexible approach by the Home Office allow greater discretion. In theory they could now communicate with all resources from any room, anywhere in the force area, via handheld UHF sets.

ANCILLARY ACTIVITIES
17 Although most communications room work involves receiving calls from the public and despatching resources, other tasks are also performed (Exhibit 6). These include:

— maintaining and updating information systems such as the Police National Computer, the force criminal record system, telephone directories, computerised gazetteers to identify quickly the location of places and landmarks in an area, call out lists and keyholder records;

— preparing management information on the work of the communications room and patrol staff;

— supplying information to the media on traffic and road conditions. This is complementary to
Senior officers should specify target levels of service for a range of performance indicators and monitor performance against them.

Communications rooms are, therefore, the hub of the police machine. They provide rapid access to a wide range of information invaluable to the public, senior police managers and, of course, officers on the beat.

**Monitoring and Improving Performance**

18 Communications rooms are, therefore, the hub of the police machine. They provide rapid access to a wide range of information invaluable to the public, senior police managers and, of course, officers on the beat.

19 The enhanced freedom of choice makes it opportune for forces to review the operation and location of their communications rooms. And it is certainly worthwhile to do so. The Commission's research shows that many forces can improve both the quality and the efficiency of the service. There are opportunities to:

- provide a better service to the public;
- increase the effectiveness of patrol officers;
- reduce running costs.

20 The quality of service provided by the communications rooms is a key influence on the public's perception of the force as a whole. Police Liaison Committee meetings often discuss it. Forces should monitor closely the key aspects of their performance, particularly:

- the time taken to answer calls and the quality of the advice given;
- the time taken for officers to reach the incident (Exhibit 7).

Regrettably, few forces have specified target standards of service; even fewer monitor performance against them.

21 Of 15 forces contacted during the study, only one monitored regularly the time taken to answer calls, even though modern telephone equipment can log automatically the time taken to answer ordinary calls; and BT and other companies offer call logging equipment on short term rental. Without the use of such systems forces can have little idea of the quality of service they are providing to the public.

22 The information provided by such equipment can be revealing. One force, for example, found that 27% of calls to a sub-divisional communications room were not answered within
Exhibit 8
SAMPLE OUTPUT FROM CALL-LOGGER
Call-logging equipment can produce valuable information...

30 seconds, and of these more than 80% were terminated by the caller ringing off before the call was answered. Overall, more than a quarter of calls were unanswered, indicating a high level of unsatisfied callers (Exhibit 8).

23 The quality of advice given to callers can be measured both by occasional surveys of callers and by spot-checks. Only one force visited had conducted a survey of callers' satisfaction. As a minimum, forces should monitor complaints received about operators. Spot-checks can be resented by staff and it may be advisable for management to agree with staff in advance that such checks will be conducted from time to time without additional warning.

24 Monitoring the time taken for patrol officers to arrive at urgent incidents is important, but most forces have abandoned such monitoring because patrol officers frequently fail to report their arrival at the incident. This contrasts with practice in both the ambulance and fire services.

25 The ambulance service established national standards for activation and response times some 16 years ago. The standards cover both 999 emergencies (Exhibit 9) and other urgent calls. They form the basis for regular management reporting both locally and nationally and influence ambulance deployment and the location of new stations.

26 Standards of fire cover are particularly detailed. Each major building...
or neighbourhood is assessed in terms of the response required for different types of fire incident. Standards are set and monitored for the time taken for six different phases of response:

(i) operator picking up the call and eliciting the information;
(ii) operator informing units that a response is required;
(iii) units acknowledging receipt of the call;
(iv) units mobilised;
(v) units travelling to the scene; and
(vi) overall response.

27 All incidents where the response fails to meet the standards are reported to management and performance is assessed by the Fire Service Inspectorate during its annual inspection.

28 These systems cannot simply be transferred to the police environment; police forces face unique problems. Ambulances and fire appliances normally have an officer in addition to the driver who can use the radio to maintain contact with the communications room. Many police responses are in single-crewed vehicles. Police officers may also have to answer a wider variety of calls, many of which do not require a fast response. Recording extensive details of response performance would create additional work causing delay. Police also argue that their communications rooms deal with a far greater variety of calls, including requests for legal advice, problems of a social services type etc.

29 These factors mean that different standards may need to apply to the police and statistics will need to be interpreted with particular care. They do not, however, obviate the need to set service standards and monitor performance. All forces need to address this as a matter of priority. They should be encouraged by the fact that the Scientific Research and Development Branch of the Home Office has assisted several forces to design communications rooms, and as part of this work, forces have specified a set of acceptable service standards for work of different urgency (Exhibit 10).

30 Clearly the time taken for police officers to reach the scene of an incident depends on a number of factors and the communications room’s influence is limited. Nevertheless, the despatchers have an important part to play in ensuring that they send the nearest appropriate officer. They should have an accurate, up to date record of the location and availability of every officer in the area.

31 In many forces, the failure to update these records regularly has devalued the system. In one force visited, a random test of resource availability information for twelve officers revealed that the computer system was not up to date in a single case. Some forces have tried and abandoned semi-automatic vehicle location devices which offer a quick means of updating resource location. Poor performance of the equipment and lack of consistency in its use are cited as the main reasons. This lack of current information severely impedes efficient despatching and calls into question the purpose of some expensive computer systems. Forces must instil greater discipline in patrol officers to update their location and their availability regularly, if they are to justify expenditure on resource allocation systems.

INCREASING THE EFFECTIVENESS OF PATROL OFFICERS

32 Forces frequently cite the need to increase the effectiveness of operational officers as the reason for investing in new systems for communications rooms. There is certainly considerable scope for some rooms to improve their

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**Exhibit 10**

**TARGET TIME TAKEN TO ANSWER CALLS**

A set of standards has been developed by some forces to assist with the design and staffing of communications rooms...

<table>
<thead>
<tr>
<th>Call Type</th>
<th>Target Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>999 and other emergency</td>
<td>5 — 15 seconds</td>
</tr>
<tr>
<td>Non-emergency calls</td>
<td>15 — 30 seconds</td>
</tr>
<tr>
<td>Routine enquiries from</td>
<td>30 — 60 seconds</td>
</tr>
</tbody>
</table>


'An Examination of the Merseyside Police Force Control Room,' Publication 77/84, Scientific Research and Development Branch, Home Office.
performance by supplying officers with accurate and complete information, sending an officer only when the caller cannot be satisfied over the phone and ensuring that the right type of officer is sent (graded response).

33 Most forces use graded response in some form. There are a number of questions to answer before deciding to deploy a police officer:

— can the caller be satisfied by advice over the phone or by referral to another agency such as the social services department, the AA or RAC, the environmental health department or the RSPCA?

— If an operational police response is required, how urgently should it be provided?

— What type of resource would be most appropriate, e.g. a double-crewed rapid response vehicle, a traffic specialist, a beat officer, or a community constable? In practice, the answer to this question may well be tempered by a knowledge of what resources are available.

— Which resources are available within the appropriate timescale?

34 Most forces identify those calls which require no operational response ('information only' calls) and those which demand a high priority ('immediate' or 'urgent' calls). These latter represent about a third of all calls received by communications rooms. Some forces classify all calls between these two extremes as 'delayed response' calls. Others further sub-divide the intermediate category into those to be answered within, say, an hour and those where attendance within one to eight hours is acceptable. Some forces also identify calls where a visit should be made 'by appointment'.

35 Specifying the call-grading criteria is not, however, sufficient. Communications rooms play a vital role in the implementation of the policy and senior management should monitor whether it is being applied satisfactorily (Exhibit 11).

36 There are pitfalls with graded response which forces need to guard against to avoid damaging the public's perception of the service. The
operator should explain the expected time of response and the reason for any delay. Some forces provide operators with the safeguard of allowing a more rapid response than is strictly necessary if the caller insists. This is understandable, but the application of the rule needs to be monitored to ensure that its use is not indiscriminate. The most important point is that the response promised by the operator should be achieved. Any monitoring systems, whether computer or paper-based, must incorporate information on performance against promise.

37 The communications room also provides a variety of supporting services to patrol officers. But there is evidence that they are not as comprehensive as they might be. Patrol officers cannot get PNC information they want because some communications rooms do not have PNC terminals. They must ask another room to run the check on their behalf. When one force installed PNC terminals in every communications room, there was a 50% increase in the number of checks requested by patrol officers. Unfortunately, the force does not have data to show whether this increased activity paid dividends by producing a corresponding increase in, for instance, detections and recoveries of stolen vehicles.

38 Once again the key is to monitor performance. Quality of response is less easy to measure but not prohibitively difficult. Forces should conduct periodic surveys of operational officers to obtain their views about the service provided by the communications rooms (Exhibit 12).

REDUCING RUNNING COSTS
39 In the area of police operations providing an effective service is of paramount importance. But economy and efficiency cannot be ignored. The study has shown that forces could reduce the running cost of their communications rooms by:
— making more efficient use of staff;
— and increasing the use of civilians.

EFFICIENT USE OF STAFF
40 The force’s standard of service influences the number of communications staff required. The number required is reduced if service standards for non-emergency calls can be relaxed to give priority to emergencies. Otherwise, the main factor determining the number of staff required is the volume of work. Work is generated from two main sources:
(i) members of the public; and
(ii) police officers on patrol.

41 The workload from the first can be measured by the number of incidents the room has to handle. In the study forces, the number of incidents handled per receiver/despatcher per hour

Exhibit 12
INCREASING EFFECTIVENESS OF PATROL OFFICERS
Forces should survey operational officers to obtain their views on the service provided by the communications rooms...
Exhibit 13

INCIDENTS PER RECEIVER/DESPATCHER PER HOUR

In the forces visited, the number of incidents per receiver/despatcher per hour ranged from less than 0.5 to over four...

Source: AC analysis of data obtained from forces visited

Exhibit 14

PATROL OFFICERS PER COMMUNICATIONS ROOM STAFF

A member of staff working in an efficient communications room should be able to serve ten patrol officers...

Source: AC analysis of data obtained from forces visited

ranged from less than 0.5 to more than four (Exhibit 13).

42 The second component of workload can be represented by the ratio of patrol officers to communications room staff. The upper quartile of forces in the study achieved an overall ratio of ten or more patrol officers per staff member (Exhibit 14); there was no evidence that they were providing poorer standards of service.

43 The main ways in which forces could make more efficient use of staff are:

— harnessing increased economies of scale;
— using more flexible shift systems;
— providing suitable support systems.

Economies of scale

44 Communications rooms with fewer than four operators on duty for the majority of the day (a minimum of 18 staff in total) are considerably less efficient than larger rooms for two reasons. Firstly, communications rooms can never be left completely un-staffed. There must always be at least two operators on duty to ensure cover for comfort and meal breaks. This makes very small rooms inefficient. One force has estimated that 30 staff are needed to cover three adjacent sub-divisions with three communications rooms, while two rooms could provide the same level of service with 23 staff, and a single room would need only 19 staff.

45 Secondly, it is inefficient to organise workers into small groups for any activity which involves waiting to receive random arrivals. For instance, if three operators work independently and each is handling calls for 10% of the time, then 1 in 10 calls will arrive when the operator is busy and the caller will have to wait; but if the operators can back each other up and calls arrive at the same rate then only 1 in 1000 callers will have to wait. The corollary to this is that a force can reduce the number of operators it requires to achieve a given level of service by combining them into groups (Exhibit 15).
Large communications rooms, however, are not significantly more efficient than medium sized rooms. This is because as the number of operators in a room increases beyond around six the additional economies of scale for receiving calls are more limited. At this point other criteria begin to assume greater importance. In particular:

- individual operators should specialise in a territorial sector of the force (typically a sub-division or division) so they can develop a detailed knowledge of street names, and landmarks. They should also have a reasonable knowledge of the adjacent areas so they can provide additional cover for these during peak periods.

- Any ‘follow-on’ calls relating to incidents which have been reported previously should be passed to the appropriate operator (usually the one who dealt with the incident initially) since they are likely to have the best appreciation of the background to the incident.

For these reasons, if several operators are working simultaneously in the same room, they will normally be subdivided into groups specialising in different geographical areas within the force. There will be no further scope to reduce the number of operators required. Housing several such groups in the same room, however, can reduce costs to a limited extent. For example, fewer supervisory staff will be required and there will be increased scope to share expensive equipment such as multi-track tape recorders.

Ideally, forces should avoid communications rooms which do not have sufficient work to require at least four operators to be on duty for the majority of the day. Some forces will only be able to achieve this by reorganising their communications rooms. The issues involved in reorganisation are discussed in the final section of this paper.

Flexible shift systems

The peaks and troughs in the rate of calls to communications rooms are sharply differentiated (Exhibit 16). In theory, therefore, it should be more efficient to use a flexible pattern of shifts so that the number of operators on duty matches demand as closely as possible.

The match between staffing levels and workload can be measured in a precise way by calculating the statistical correlation between the number of incidents recorded and the number of staff on duty for each hour of the day. A correlation coefficient of 1.0 indicates a perfect match; a coefficient of 0 indicates no match. In a quarter of communications rooms in the forces visited the correlation coefficient was above 0.76, indicating a fairly good match between resources and demand, whilst in some rooms there was almost no match at all (Exhibit 17). One sub-divisional room had two staff on...
duty at all times, but at peak times one of them was permanently engaged on switchboard duties, so staff availability actually decreased as workload increased — and the correlation coefficient was negative.

51 Most forces contacted during the study use standard four team systems which result in the same number of staff being on duty 24 hours a day. More flexible shift patterns allow staffing to be matched better to workload (Exhibit 18). Achieving flexibility over working patterns is generally easier in larger rooms, and this of itself can be an argument for consolidating communications in a smaller number of larger rooms. One large force communications room, for example, operates a five-shift system with additional flexibility on the evening shift. To provide the same level of operator cover at peak periods under a standard four-team system would require a third more staff at a cost of some £500,000 a year (Exhibit 19).

52 Agreeing shift systems which are both acceptable to staff and which match resources to demand can be difficult. It may, however, be achievable with a system based on fewer but longer working days. Hampshire Constabulary is experimenting with a system based on ten hour shifts known as the 'Ottawa system' (Exhibit 20). Although the experiment is still in its early days, there seem to be a number of clear advantages. There is an overlap between shifts of up to six hours which can allow increased numbers of staff to be on duty at peak periods such as 2200 to 0300 on Thursdays, Fridays and Saturdays without using overtime.

Exhibit 18
MATCHING STAFFING TO VARIATIONS IN WORKLOAD
Most of the study forces are using standard four shift systems...

...but using more flexible systems would allow staffing to match workload variations more closely...

Source: AC analysis of data obtained from one force visited

53 Officers work only three or four days between rest days except when they are working on the night shift. Overall, each officer receives an additional 42 rest days a year. Once every five weeks, seven consecutive night duties are followed by a mini-holiday of six days off. It is understood that, as a result, staff morale has improved and sickness has fallen.

54 The Ottawa system involves a number of departures from Police Regulations which require the agreement of the individual officers concerned. A number of forces are experimenting with similar schemes.

Exhibit 19
USE OF FLEXIBLE SHIFT SYSTEMS
One force is saving £500,000 by using a flexible shift system...

Source: AC analysis of data obtained from one force visited
Exhibit 20

THE 'OTTAWA SYSTEM'
Experiments with fewer but longer shifts may help forces better to match resources to demand...

Adequate support systems
55 Poor support systems for communications room staff reduce the quality of service provided and waste time. Some problems which have been encountered in the forces visited by the Audit Commission include: poor resource availability information; information files which are incomplete or not readily accessible; inflexible telephone systems which require calls to be double handled and poor communications room layout. These are practical problems which can be resolved with relatively little effort and expense.

CIVILIAN OPERATORS
56 Most forces employ a substantial number of civilians in communications rooms. In three-quarters of the forces visited by the Audit Commission, at least half of the communications staff are civilians (Exhibit 21). All supervisors are police officers but every other aspect of the work is done by a civilian in at least one force visited. Despite this some forces make very little use of civilians – in two of the forces visited less than a third of communications staff were civilians.

57 Although it is easier to use civilians in large rooms, even some forces with small rooms are nevertheless operating with a high proportion of civilian operators. This suggests there is considerable scope to make more use of civilians. The principal advantage of doing so is that it releases police officers for operational duties. Alternatively it can reduce costs substantially. Police officers acting in this capacity typically cost almost twice as much as civilians.

58 The selection of police officers to work in the communications room is not always based wholly on their aptitude for the job. Officers recovering from illness or injury, or otherwise unsuited for operational duties (for example due to driving suspension or discipline) may be posted there. Staffing of sub-divisional communications rooms can be particularly difficult; often officers will be taken from opera-

Exhibit 21

CIVILIANS IN COMMUNICATIONS ROOMS
The extent to which civilians are used in communications rooms varies significantly between forces...
tional duties to cover a position having received little or no training.

59 Using civilians presents an opportunity to select people with appropriate skills. They can be recruited from similar jobs in other organisations (doctors' emergency answering services, BT, the ambulance, fire and armed services) as well as telephonists seeking career progression. To attract such people, forces need to provide suitable working conditions and a career structure.

60 Many forces overlook these requirements and find it difficult to recruit and retain good civilian operators, but this does not need to be the case. The average length of service of current civilian operators in one force visited is seven years – nearly twice the average length of communications room service of their uniformed colleagues (Exhibit 22).

61 The pros and cons of civilians in communications rooms are keenly debated. Some officers argue against on the grounds that their lack of operational policing experience makes them unable to decide whether to despatch resources in response to a call and, if so, which resources are most appropriate.

62 There is no evidence from the forces visited by the Commission that civilian operators are any less effective than police officers. The knowledge required to be an effective operator can be acquired from training, supported by clear and detailed guidelines on the graded response policy. As one senior police officer remarked, 'Do you need to be a pilot before you can become an air traffic controller?'

63 The other main concern over the use of civilians is the need to maintain the service in the event of industrial action. It must be recognised that forces using civilian operators need to be prepared for such an eventuality. One possible approach is to designate a core of police officers who could be trained to provide cover and given the opportunity to maintain familiarity with the communications room systems.

64 Some improvements in the service can be achieved only by reorganising the operation into fewer, larger rooms. That can involve major upheaval and considerable cost. Clearly it should be undertaken only if there is a strong case.

THE COST OF CHANGE

65 The capital cost of reorganising communications rooms for whatever reason will vary considerably between forces. It will depend in particular on:

- the capacity and suitability of existing accommodation;
- the availability and cost of alternative accommodation;
- the age and sophistication of the telecommunications and radio equipment.

66 If existing rooms are large enough and well equipped it may be possible to decommission one and transfer the work to another. With the latest telecommunications and radio switches, the additional costs involved may simply be the provision of a leased line connecting the two sites. The original room can be used for a new purpose but equipment can be left at the site and continue to serve to transmit radio messages originating from the second site.

67 The cost of leased lines depends upon distance but installation costs of around £4000 and an annual rental of £3000 are typical. If the force already

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**Exhibit 22**

LENGTH OF STAY OF COMMUNICATIONS ROOM STAFF

One force visited was particularly successful in achieving a low rate of turnover amongst civilian communications room staff...

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*Source: AC analysis of data obtained from one force visited*
has a high capacity network (such as BT's Megastream or Mercury's DASS), then there may be sufficient spare capacity which could be used at no extra cost.

68 For many forces, however, reorganisation will require substantial capital investment to be approved by the Home Office. It is likely to involve new accommodation, additional equipment including computer support, telephone and radio facilities, PNC terminals and links, tape recorders and uninterrupted power supply and network links between communications rooms and radio base stations.

69 Forces considering reorganisation, therefore, must judge where the balance lies between increased efficiency and reduced running costs, the cost and disruption of change, and the operational implications. This is a complex decision which will require each force to undertake a detailed cost benefit analysis. In general, there will be a propensity to maintain the status quo and to concentrate on achieving operating improvements within the existing structure. There are two situations, however, where there is more likely to be a justification to change, which merit specific comment:

— forces operating a large number of small communications rooms, typically in sub-divisions, forgo significant economies of scale; and
— forces operating a dual tier structure experience operational disadvantages.

SUB-DIVISIONAL ROOMS

70 Small communications rooms are inefficient and expensive. They are often poorly equipped and may not be adequately supervised since the officer nominally in charge may also have other responsibilities e.g. as custody officer. Any room serving a single sub-division will usually fall into this category.

71 Some forces acknowledge that there are economies of scale available from centralising the communications function, but regard sub-divisional autonomy as a key element in their overall management philosophy. They consider that it is essential for each sub-division to possess its own communications room, and they are prepared to bear the additional cost entailed. Ultimately, this is a decision which forces are entitled to take, but they should do so only after careful consideration of costs and the alternatives which also permit sub-divisional autonomy.

72 Communications rooms serving more than one sub-division need not be incompatible with sub-divisional autonomy. The term 'command and control' is misleading – communications rooms despatch resources, under normal circumstances they do not command them, though it is recognised that when dealing with a complex incident the communications room may need to co-ordinate the police response. But, nearly all communications room staff are either civilians or constables, they do not hold command ranks.

73 By monitoring radio traffic, sub-divisional line management can decide to intervene and override despatch instructions at any time. Similarly, in a force with a computerised communications support system, it is possible for operational commanders to have terminals so they can monitor and if necessary intercede in major incidents from a remote location. Some forces have this facility and find it works well.

74 Forces can, therefore, operate a system of sub-divisional autonomy without locating communications rooms in every sub-division. The key is for sub-divisional commanders to specify target levels of service and monitor performance. This will help to establish a clear division of responsibilities between the 'client' (the sub-divisional commander) and the 'contractor' (the communications room). The 'contract' can be supplemented by regular meetings between sub-divisional and communications room management to discuss issues and resolve any difficulties.

75 Forces should not, therefore, retain sub-divisional communications rooms solely on the grounds that they allow local management of their performance. Normally they should retain their existing structure only if the savings they could achieve in running costs are outweighed by the cost of reducing the number of rooms.

DUAL-TIER STRUCTURES

76 Dual-tier communications room structures have operational disadvantages but technological developments have eliminated the need for them. Forces which receive 999 calls centrally still relay such calls to the local room because either:

— the central room has despatched a VHF resource and the local room needs to be kept aware of what is happening on its patch; or
— a locally controlled UHF response is considered more appropriate and so the local room needs to take over.

77 Messages can be transferred from the central to local rooms by radio, telephone, fax or electronic mail. But, with the possible exception of electronic mail, the middleman at the centre adds no value. On receipt of a call, the operator in the central room must contact the local room, wait for an answer and give the local operator all the information obtained from the caller before a response can be initiated. This creates delay, introduces the risk of error and increases costs.

78 One large force with a dual-tier structure estimates it could save around £500,000 by decentralising the receipt of 999 calls and the despatch of VHF resources. The only additional work for the local room arising from such a change would be radio communication with VHF resources and handling false 999 calls which would otherwise have been screened out by the central room.

79 In this case, there is a strong operational case for reorganising. There may also be substantial savings.

80 Communications rooms are central to police performance and the public image of the force as a whole. It is vital that their staff provide a high quality service – answering the telephone promptly, eliciting accurate information quickly and courteously, taking sound decisions and initiating speedy action.

81 This crucial work is performed by junior staff. It is the responsibility of senior management to ensure that they do it to the standard the force and the public expect. The study has identified opportunities for improvement in many forces. This paper has set out a series of practical recommendations for achieving a better and more efficient service, many of which could be implemented quickly, easily and at virtually no cost. Auditors will be working with forces over the coming months in reviewing their performance (Exhibit 23).

Exhibit 23
PERFORMANCE REVIEW
All forces are recommended to review the performance of their communications service without delay...
The Commission would like to thank the many police officers and civilians who assisted with the fieldwork, especially those at the Scientific Research and Development Branch of the Home Office. Valuable assistance was also provided on the fire service by the Fire Department of the Home Office. As always, however, responsibility for the conclusions and recommendations lies with the Commission alone.