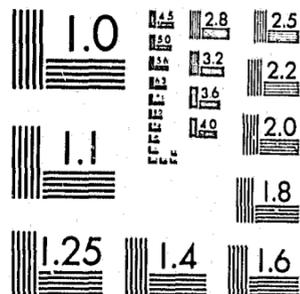


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ACQUISITIONS

THE USE OF COMPUTER SIMULATIONS  
AS A TRAINING AID WITHIN  
COMMAND COURSES AT  
THE POLICE STAFF COLLEGE,  
BRAMSHILL, ENGLAND.

U.S. Department of Justice  
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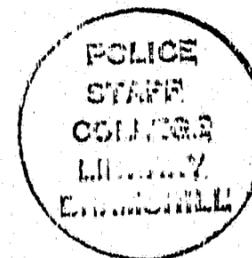
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## INTRODUCTION

The brief I received for my talk today was to describe how we use computer based simulations within the programmes of courses held at the Police Staff College, Bramshill, England. However, I consider it prudent to mention at the outset that whilst I personally possess only a limited knowledge of the technological aspects of computers I have, during the past eighteen months, in my capacity as planning officer for College courses in general, and the Senior Command Course in particular, gained considerable experience of the practicabilities of using such exercises. It is also necessary to add that the views I shall be expressing are my own and not necessarily those of the Police Staff College and should only be construed as my own personal opinion or analysis.

My colleague, Superintendent Gerry Houghton, addressed the seminar yesterday on how the Staff College teaches senior police officers about computer appreciation and for my part I shall describe two highly sophisticated computer simulation exercises which are used on two of our Command Course programmes.

## EXERCISE CRUSOE

The first exercise entitled C.R.U.S.O.E. (Computer Resource Utilisation Strategic Operational Exercise) is undertaken by students of the Senior Command Course and is probably

the most important development at the Staff College for many years. It has been developed in response to the need perceived by the Staff College to supplement the training of students on the Senior Command Course with some practical experience of the problems of strategic management in the police service. This point is clearly documented in a recently published article about CRUSOE entitled 'COMPUTER MANAGEMENT EXERCISE' - Police Research Bulletin combined Autumn 1980/Spring 1981 edition which states inter alia:

..... "The transition from tactical operational command at the rank of chief superintendent to that of strategic planning at Assistant Chief Constable level is a major step in a police officer's career and members of the staff and ex-students of earlier Command Courses had suggested that the Staff College could do more to prepare its senior students for the change in role ..... Its particular purpose is to give senior students (that is students of chief superintendent/superintendent rank\*) the opportunity to manage a police force in an exercise and to have to cope with the consequences of their decisions ..... Exercise CRUSOE is able to offer a level of sophistication and attention to detail and hence a degree of realism, which has not been approached before.

\* My own words inserted in brackets.

This has been made possible by using complex computer models to determine the outcome of the management decisions made by the students." (1)

In the exercise students assume the roles of officers of Chief and Assistant Chief Constable rank within a force and are responsible for managing it over a period of five simulated years, each year being represented by a day's play. Initially, comprehensive information is given to them on the force and the environment in which it operates. During the exercise the Directing Staff provide, as requested by the students, further information, reports etc. (which would in reality be prepared by the Headquarters supporting staff) to help in the making of the management decisions and in monitoring their outcome. The Directing Staff routinely supply data and statistics on the operations and costs of the force and they also inform students of changes in the social, political and economic environment which occur as the exercise progresses through the five year period. The exercise is based on computer models of the force in which the decisions made by the students are reflected at the start of each exercise year. These models are used to obtain the quantitative information which is given to the

(1) POLICE RESEARCH BULLETIN, No. 60 - COMBINED EDITION  
Nos. 35 and 36 AUTUMN 1980/SPRING 1981 - ARTICLE  
ENTITLED 'COMPUTER MANAGEMENT EXERCISE' p.p. 58-61.

students to show the results of those decisions in terms of the effects on operational matters, organisational changes, manning and costs.

#### EXERCISE ATLANTIS

The second computer aided simulated exercise known as ATLANTIS is undertaken by students of the Overseas Command Course who hold the rank of superintendent/Lieutenant Colonel upwards. The simulation is based upon an imaginary country - ATLANTIS. It is not an island but has one border with a neighbouring country which permits the introduction of problems of international boundaries. It is a training exercise in disaster relief management and is intended for those whose responsibility may include pre-disaster planning, or operational command in the provision of relief or life support. It was originally designed for developing countries' administrators whose responsibilities include planning for and managing in disaster. The disaster is that of an earthquake, followed by a second, but this is merely the vehicle for the exercise and it could well have been some other form of natural or major catastrophe. It aims to provide a realistic situation in which the problems of resource management in a crisis can be exposed, and the necessary management techniques developed and practised. The exercise illustrates the nature and value of disaster preparedness by creating situations involving a variety of messages - accurate, distorted or confused - and alternate patterns of disorder, presenting either scarce or abundant

information. This generates pressure on decision makers (the students) to take action to analyse and deploy available resources or to acquire additional aid. The importance of making such decisions on the basis of what is established or known rather than by ad hoc response is underlined.

The Directing Staff have the support of a computer which acts as a memory for the storage of a variety of information, as a means of processing the decisions made by players and of analysing the implications of these decisions. In doing so it provides an accurate and rapid means of assisting the staff in responding to the players, without which the exercise would require many additional staff.

#### THE POLICE STAFF COLLEGE, BRAMSHILL

It might be appropriate at this juncture, before describing CRUSOE and ATLANTIS more comprehensively, to say a few words about the philosophy of command training given at Bramshill, the methodology used and the specific training objectives of both the Senior and Overseas Command Courses. This is intended to provide an overview of what we are trying to achieve at the Staff College and, more importantly, to emphasise that exercises such as CRUSOE and ATLANTIS should not be viewed as entities in their own right but rather as important and integral elements of a total teaching package of the respective courses.

As most of you here today will know Bramshill is the National Police Staff College for the police forces of England and Wales and also accepts students from other forces in the United Kingdom and overseas. It offers a comprehensive pattern of courses for officers at each level of command. There are five major command courses running concurrently which are subject to continual review and amendment. In general terms their objectives are to prepare selected officers for the responsibilities and accountability of higher rank. They are therefore, all future orientated and geared to improving at one and the same time, both the effectiveness of policing and its acceptability to the public at large.

Whilst traditional methods of teaching are used on all courses less traditional methods are also employed as the Staff College is concerned with the process of learning as well as its content. This is achieved, in part, by the increased use of 'action learning' exercises such as CRUSOE and ATLANTIS which provides the students with an experiential dimension to their studies. The Directing Staff attempt to create an active learning environment in which they act as a resource available to students in the pursuit of knowledge. With this in mind CRUSOE and ATLANTIS as computer based exercises have both been designed to provide practice in decision making at the policy/strategic level of management.

## THE SENIOR COMMAND COURSE

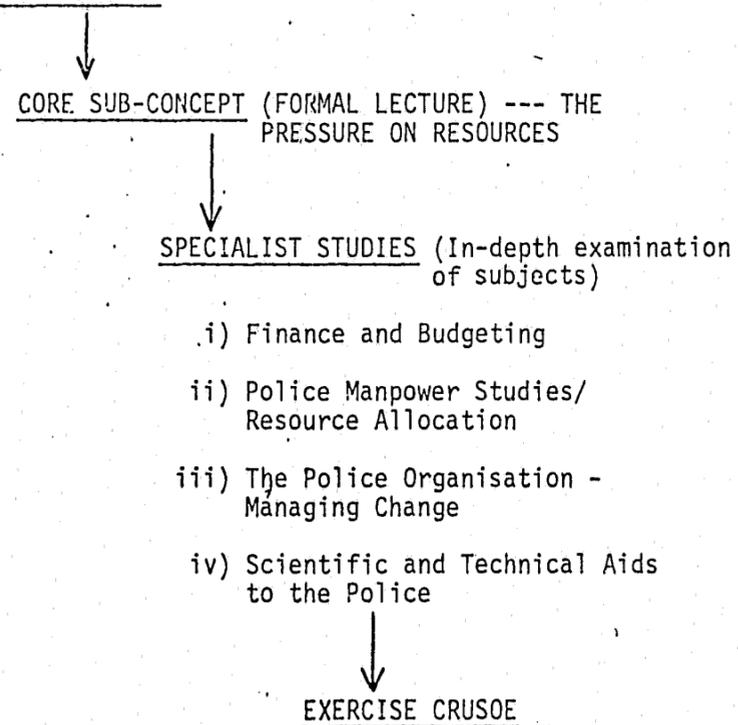
This is the most prestigious course at the Staff College and is designed to:

"Prepare selected officers for the highest posts in the police service."

Emphasis is placed upon those aspects which are appropriate to the responsibilities and accountability of Chief Officers of Police in the United Kingdom - that is at the policy making and strategic levels of decision making. The course is of six months duration and is made up of twentyfour United Kingdom officers of chief superintendent/superintendent rank and six senior officers from overseas. This year the overseas officers are from Tasmania, Australia, Singapore, New Zealand, Denmark and America. In recent years the Staff College has undertaken an examination of the tasks an Assistant Chief Constable is required to do and the qualities which would enable him to perform those tasks most effectively. Each year the nature of this 'job description' is modified through formal and informal decisions with recently appointed Assistant Chief Constables so that every effort is made to ensure that senior management training is appropriate to the work to be done at that level and is credible to those who have to do it.

As a result the Senior Command Course is constantly changing both in content and methodology. Within the framework of the course it is structured on three main levels which are inextricably linked. The first, the core level, consists of formal lectures relating to the overall theme of the course. In 1981, this is the 'management of change' and derived from this are four sub-themes which attempt to examine the change in societal, managerial, resource allocation, and moral and legal terms. The second, the specialist study level, aims to meet individual training needs as perceived by the student. This provides an opportunity for an in-depth examination of a particular aspect of policing appropriate to Chief Officer level. The third level, involves four major exercises which are related to and developed from the core and specialist studies. CRUSOE is one such exercise and is integrated with four of the specialist studies i.e. finance and budgeting, police manpower studies, the police organisation, scientific and technical aids; this links to the core lectures dealing with the sub-themes of resource allocation and organisational management and finally to the overall course theme dealing with 'the management of change'. (Fig.1)

FIG. 1 MANAGEMENT OF CHANGE



THE OVERSEAS COMMAND COURSE

The Overseas Command Course lasts for three months and is designed to "increase the professional competence of senior overseas police officers at command level" who are serving in or destined for the rank of Assistant Commissioner/Colonel in overseas police forces. It currently consists of twelve students of superintendent/Lt. Colonel rank and upwards who originate from, in the main, Commonwealth and ex-Commonwealth countries but also including a number of officers from other countries in the Western World. On the current course the students are from Bangladesh, Brunei, Cyprus, Hong Kong, Jamaica, Malaysia and

St. Helena. The syllabus provides, at command level, the opportunity to study methods of operational policing, management techniques and conflict studies. The methodology of the course takes into consideration the para-military structure of many overseas police forces. Whilst specialist studies are not included within the syllabus the use of formal lectures and several experiential case study exercises (most of which are paper feed and sequential in nature) are an integral part of the course content. Exercise ATLANTIS deals in the main with a fictitious developing country and its teaching objectives which are related to operational responsibilities at command level make this an appropriate exercise to be included within the course programme.

EXERCISE CRUSOE AND ITS APPLICATION

Let us now turn our attention to exercise CRUSOE and its development and usage within the Senior Command Course programme. In our experience at the Staff College project based learning and action research is the most effective format for training senior managers as it allows knowledge and experience to be absorbed in an active working environment. The formal lecture followed by a period of private study and a written exercise is not necessarily the most effective vehicle for learning. It is an acceptable way to transmit ideas but not techniques and skills. CRUSOE AND ATLANTIS like other exercises are directed at specific problems of real and current interest and at the

'processes' implicit in resolving them effectively. These are particularly relevant to the problem of managing change effectively. Attention is drawn to group dynamics, to inter-personal, inter-group and inter-level skills as well as to communication, decision making and problem solving skills appropriate to senior management. In other words the exercises are geared to identifying and refining specific and practical policy strategies and developing those skills in senior personnel which assist in their implementation.

Gaming however, is not a new innovation as we are all well aware. It employs techniques which have been common in many forms of training throughout the centuries although its strongest links are with military training. The techniques of war gaming were developed to permit the examination of particular military problems but without the dangers and confusion which result from soldiers rushing about the place. Very much as the result of military use of gaming techniques management games were developed and are now widely in use in Europe and the U.S.A. for both analytical and training purposes. Exercise CRUSOE has its roots in all of these and was designed and developed (as a resource management exercise) specifically for the Senior Command Course with the following aim:

"To help prepare Senior Command Course students for appointments to Assistant Chief Constable by providing opportunities to experience responsibilities and decision making activities inherent in the strategic levels of a police force."

The training objectives were determined as:

To provide practice in strategic planning and management in:-

- (a) The identification of future policing responsibilities
- (b) The quantification of resource needs to meet these responsibilities
- (c) The financial estimating and budgeting processes involved in making provision for these resources
- (d) The on-going financial management arising in resource management
- (e) The appreciation and application of management information produced by computer systems.

#### DEVELOPMENT WORK

Development work for the exercise commenced in April 1978 and following eight development trials (using participants of various ranks some of whom had recently completed the Senior Command Course) was used by the 17th Senior Command Course in August 1980 and proved to be an outstanding success. The Police Scientific Development Branch (P.S.D.B.) of the Home Office in London had overall responsibility for the development of the exercise on behalf of the Police Staff College and developed the computer models of the force operations - road traffic accidents, reported crime and clearance rates - which allowed the Directing Staff to reflect the operational consequences of the players decisions. The Local Government Operational Research Unit (L.G.O.R.U.) at Reading, Berkshire, under contract to

P.S.D.B. developed the computer models of costs and manning i.e. budget and estimate figures under sixty main heads, manpower strength (police and civilian), recruitment and wastage and figures describing the vehicle fleet and mileage. They also developed the facility to allow the force to be reorganised by division and sub-division. The Royal Military College of Science (R.M.C.S.) at Shrivenham, Wiltshire, also under contract to P.S.D.B., developed the structure, story line and mechanics of the exercise, made a film about Humberside Police Force (the exercise "Force Model") for briefing purposes and was responsible for conducting trials and analysing their results. The collation of data and preparation of supporting material and papers (known as the response event library which includes pre-prepared papers on computerisation, shift systems, civilianisation and other specialist issues) has been a joint activity, but major contributions were made by members of the Police Research Services Unit at the Home Office in London and by the Police Staff College.

#### EXERCISE STRUCTURE

Although the exercise is based upon Humberside and its Police Force, the scenario is not intended to replicate either exactly. Modifications have been made to both in the setting and the Directing Staff are free to modify any aspect of either

the force or its environment to create problems and situations related to the training objectives of the exercise. However, Humberside was chosen because it was considered to be a typical profile of United Kingdom forces in general. Furthermore it was formed in 1974 from an amalgamation of parts of four smaller forces and possessed a great deal of potential for strategic management activity. As the data bank was, in the main, consistent with the actual Humberside Force it provided a considerable element of realism and credibility to the exercise.

#### THE STUDENT GROUPS

The exercise is undertaken by four separate groups known as the 'Policy Groups'. Each member of the respective group is allocated a role (which may be rotated between rounds at the discretion of the students) which is either Chief Constable, Deputy Chief Constable or Assistant Chief Constable with functional responsibilities i.e. traffic, crime, administration, operations etc. The number of students on the course determines the exact number of roles but in 1980 there were eight students in each policy group who enacted the following roles:

Chief Constable - one student  
Deputy Chief Constable - one student

Assistant Chief Constable - one pair of students  
Administration

- i Personnel and Training
- ii Equipment and general administration

Assistant Chief Constable - one pair of students  
Operations

- i Uniformed operations including traffic
- ii Crime

Financial Adviser (Force Finance Officer) - one student

Co-ordinator/Secretariat - one student

The exercise is structured into a series of rounds - five in all - each lasting about five to seven hours with each round representing a year in the life of the force. The initial year is that in which the exercise takes place i.e. last year it was 1980/1981, commences on the 1st April and concludes on the 31st March the following year. Prior to the start of the exercise students are issued with comprehensive briefing narratives and information manuals which explain the game mechanics and outline their individual responsibilities as members of the Policy Group. The information includes the structure and strength of the force, detailed financial data and the general situation and perceived priorities for action which pertain in the force. A force annual report is also provided and more importantly a FORCE INFORMATION BULLETIN (F.I.B.) which contains a breakdown of the budget

(approved for the current year and estimated for the following year) and detailed statistics in numerical and graphical form on the forces operations during the previous year. Each of the four policy groups start from the same data base.

Exercise CRUSOE operates as totally "free play" that is to say the students are free to identify and tackle problems in any way they choose and thereby manage their respective forces as they wish. Although the initial conditions of the game (the scenario of the force) is the same for each group thereafter the four "forces" can be very different in organisation levels of efficiency as they pursue their often varying strategies.

#### THE DIRECTING STAFF GROUPS

Each 'Policy Group' has its own team of Directing Staff led by a senior member of the Senior Command Course staff who assume the roles of the Home Office, the Inspectorate, the Local Authority, the Media, Headquarters staff and the public at large. In other words the rest of the world. In 1980 three were Assistant Chief Constable who normally act as Assistant Directors for the duration of the course and the fourth was myself. In addition each team has a police chief superintendent or superintendent and two computer model advisers acting in a support capacity (in 1981 these roles have been combined) and a cadet acting as messenger between the policy group and Directing Staff team. Further, two force finance officers are available to provide professional finance advice to the policy

group upon request of the financial adviser in the respective groups. Albeit each Directing Staff team has total control over his policy groups performance and is able to inject various constraints or stimuli at their discretion but the overall control rests with the Exercise Director, the Deputy Commandant of the Staff College and a small support staff. The constraints or stimuli introduced may take many forms and are intended to be injected at different times during the five year exercise period to apply additional pressure where considered necessary or to ease pressure if the policy group is having difficulties. The students may ignore such prompting if they wish to do so. Examples of such stimuli are as follows:

- a) a budget cut imposed at the beginning of a round or during a round of play where the cut needs to be found from that year's budget
- b) a budget increase thereby enabling students to prioritise their deficiencies or strategy generally and make the necessary spending to improve their forces efficiency
- c) Low recruitment/high wastage rate problems
- d) High recruitment rate/training problems
- e) Soaring crime rate/low detection rates
- f) Encouragement to consider force boundary changes and reorganisation

- g) Notice by central government of reduction in the working week of police/civilian personnel from forty to thirtysix hours two years hence.
- h) Response to major changes in legislation and the implications for operational efficiency
- i) Increases in petrol costs, a percentage of which has to be found from within the current budget
- j) Reminders concerning other issues affecting operational efficiency which have been incorporated into the exercise scenario and yet overlooked by the policy group.

During a year's playing time (a day) the students can obtain additional information upon written request and this is provided from either the event response library of pre-prepared papers, produced as new papers by the directing support team or derived direct from the computer models. Where information is readily available and would in reality be expected to be produced within that year of play then it is fed into the policy group during the current round. However, if the information is dependent on some degree of research or analysis it would be fed back to the group at the beginning of a succeeding year. At the end of a day's play the policy group is obliged to make, in writing, policy or strategic decisions concerning changes to their force in manpower, equipment, financial or organisational

terms. This is done on forms especially designed to reflect these various factors. These decisions together with their probable operational implications - whether favourable or unfavourable - are interpreted by the Directing Staff into parameters appropriate to the input requirements of the processing programme which are then used to re-make the model base files and modify them as a consequence of the players decisions. New Force Information Bulletins which reflect these decisions in statistical form are then produced and made available to students at the beginning of the next round of play. This process is then repeated until the completion of the exercise. Following the exercise there are three more days of group presentations - where the students are asked to account for a particular aspect of their decision making during the preceding five days - and student and staff debriefing sessions. Let me briefly summarise thus far and talk you through the whole exercise as it is reproduced at Appendix 'A' to this paper. Also included at Appendix 'B' is a flow chart describing the staff and student groupings.

#### THE COMPUTER FACILITY

Much has been said about the salient issue of "free play" in CRUSOE and the degree of attention to detail in the information which is available upon request to students. The Staff College is committed to 'free play' and of maintaining realism and credibility as was experienced during the 1980 exercise therefore

the use of computer models as a support is considered crucial to its success. It would surely be a daunting task to cope manually with the demands of four separate policy groups who, because of the "free play" principle, could reorganise their force and deploy manpower and other resources in any manner they wished. More importantly any attempt to quantify and subsequently reflect the costings and statistical variations arising from a policy group's decision would be an enormous task for the Directing Staff without computer back-up and response, particularly over a five day period. Furthermore, it is essential that during a round of play the Directing Staff must be able to respond rapidly to players requests for information to provide analysis of their chosen options and decisions. It is concluded therefore that the provision of computerised back-up is crucial if the exercise credibility is to be maintained and the "free-play" element preserved.

It is recognised though that such methods are expensive in development and operating terms. That is, in gathering the data, setting the scenario, writing the programmes and the actual exercise computing costs. The development costs alone over the past three years have proved to be exceedingly expensive. Furthermore, the Police Staff College does not possess its own main frame dedicated computer therefore we have to buy computing time from a computer bureau in London. The computing costs for the exercise, not allowing for any trials and staff training during 1980, amounted to £7,500. Albeit the exercise

is aided by sophisticated computer support it is still relatively manpower intensive to operate as twentythree members of staff are needed to ensure the smooth running of four student policy groups and to provide a rapid response to information requests throughout each successive round of play. The seminar members may be interested to know that during the 1980 exercise the average number of requests for information and decisions taken per policy group per day amounted to seventyfive and twenty respectively.

However, apart from the development costs the actual running costs of the exercise could probably be reduced significantly if the user possessed their own main frame or mini-computer facility. In addition, a reduction in the number of policy groups would also reflect a proportionate saving in computing costs. The "free play" principle and degree of sophistication of the computer models required are also a matter for debate but, as mentioned earlier the Staff College is committed to maintaining the levels we are currently operating at and feel that any deviation from this view would inevitably lead to a loss of reality and credibility in the exercise. Our experience has shown that CRUSOE is a demanding and stimulating exercise and an adventurous innovation in the training field. Although some of you may consider the costs involved are very expensive and possibly prohibitive I would suggest that the investment involved in providing such a credible training exercise for those officers who will eventually hold the highest

positions in the Nation's police - and will no doubt have control of force budgets which may amount up to £100 million - it is money well spent.

#### EXERCISE ATLANTIS AND ITS APPLICATION

ATLANTIS to remind you is a training exercise in disaster relief management. The disaster is that of an earthquake followed by a second. Very broadly it concerns an imaginary developing country of about three million inhabitants, the administration of which is described in terms of its Government, its Ministers and their Administration of five regions. The exercise Directing Staff provide the link between the players and the outside world of the disaster zone, the country ATLANTIS and the world beyond. They are no part of the Atlantis Government organisation but merely maintain the momentum of the exercise, seek to expose the problems, and in consequence (like CRUSOE) have no contact whatever with the players during the exercise. Only a small number of staff are required - two exercise directors assisted by a computer operator and one or two secretary messengers. This exercise was conceived in 1975 by Lt. Col. G. N. Ritchie who was at the time a research fellow of the University of Manchester in England, where for three years he was engaged in a programme of research into the problems of planning and management for natural and man made disaster, in the developing countries of the world. He was considerably aided by Mr. Peter Atkinson, the Manager of I.B.M.'s Scientific

Centre in the United Kingdom and his staff who provided the necessary funding and together with staff from the Department of Systems at Lancaster University wrote the computer programmes. As many of the students on the Overseas Command Courses originate from the developing countries of the world and are likely to have a primary responsibility for disaster planning or operational command in the provision of relief or life support 'ATLANTIS' is considered to be a valuable training exercise for the course. It was first introduced in November 1980 and proved to be highly successful. The overall training objectives are:

- a) to provide a realistic situation in which the problems of resource management can be exposed and the related management techniques developed and practised. In doing so the exercise also seeks to illustrate the nature and value of disaster preparedness.
- b) To enable, but of secondary importance, players to assess the value of a computer based exercise as an aid to training.

ATLANTIS has been designed for up to fifteen players, playing singly or in pairs as members of a National Disaster Emergency Committee. Students enact the roles of Disaster Co-ordinator and of five Government Ministers, namely, Home Affairs, Transport, Public Works, Health and Social Affairs. It is not an exercise in which various leaders are competing against one another. Each team is playing against the situation developed in the simulations. In general terms they are aiming to reduce death, sickness and deprivation by the effective and

efficient deployment of the various resources made available to them or acquired by them. There is pressure however upon them with responsibility for making decisions to deploy immediately available resources and to acquire additional ones. The importance of making such decisions on the basis of what is established or known rather than by ad hoc response is underlined. The fewer dead and sick and the more food and water that is available to the survivors as time progresses, the more effective one can say has been the Disaster Emergency Committee's work.

#### THE EXERCISE STRUCTURE

Prior to starting the exercise the students are issued with briefing material which consists of an opening narrative introducing them to ATLANTIS, its topography, economy and people; a more detailed description of their individual roles (Minister of Home Affairs, Transport etc.), their responsibilities and available resources and the playing instructions. Only the Disaster Co-ordinator (known as DISCORD) in his capacity as Chairman of the National Disaster Emergency Committee, (D.E.C.) has details of each player's role, responsibility and resources. All have a broad outline of what the other students are responsible for, but they do not have the details.

The exercise commences by the Exercise Director informing the D.E.C. in session of an earthquake in ATLANTIS. DISCORD is

then required to co-ordinate relief policy and, to do so, may need to convene meetings of his Committee to discuss the emerging problems with the Ministers. Such meetings and their length are at the discretion of DISCORD and will enable the D.E.C. to consider priorities/strategies, to review progress, to decide policy and maintain or alter course as appropriate to ensure that available resources are deployed effectively. Clearly, however, adequate time must be afforded to enable Ministries to translate D.E.C. policy directives into executive action. Formal committee meetings should not, of course, inhibit consultations between players or between DISCORD and players at other times.

The exercise is more or less divided into three overlapping phases which span three days. The passage of time is simulated during the exercise whereby each half day's play represents one day in real time.

Phase 1 This is the period immediately post-catastrophe during which players are collecting and collating the information which will enable them to assess the situation and its requirements. They are also establishing the location and availability of the various resources required to meet the needs of the disaster situation.

Phase 2 sees the continuation of Phase 1 and the deployment of the various forms of rescue, relief and repair resources which are immediately available.

Phase 3 introduces the problems associated with the logistics and the integration of incoming foreign relief with national resources.

No one phase is unique however, and each contains elements of the problems which arise throughout the exercise.

Throughout the exercise various constraints and stimuli are introduced (as with CRUSOE) to exert or reduce pressure on the students. This takes the form of persistent enquiries and requests concerning a variety of subjects e.g. the fate of foreign nationals, the necessity to brief a high ranking United Nations official, and many more.

#### THE COMPUTER AS A FACILITY

The function of the computer is that it precisely holds a record of the resources deployed and their location and a record of the state of the infra-structure and life support systems of ATLANTIS. It is enabled, through its programming to keep track of changes which arise from resource allocation or deployment by the players or by the Directing Staff. The staff can also use the computer to respond to three main types of message (initiated by the students) which are geared to the information stored in the computer models. These are as follows:

- a) Information request forms which seek answers to specific questions concerning the amount of a resource or the state of a life support system
- b) Movement forms which instruct movement of a resource by a particular transport to a particular place (or relief activity) via, if appropriate, a particular region

- c) General message forms: these might apply to decisions in regard to rationing, evacuation or requests for foreign aid or general interrogation in respect of any resource which is not covered by (a) and (b) above.

Each of the information/movement forms completed are encoded by the Directing Staff and input into the computer models by the computer operator. This enables an accurate record to be maintained of the action taken by the D.E.C. and separate Ministerial Departments and in turn calculate the effect the decisions are having on the stricken population. During the post exercise de-briefing session the students will discuss their performance having regard to their strategy employed. This will disclose the results obtained in providing relief, the results if no action had been taken and the best results which could have been achieved. This information is produced by the computer as an evaluation report which depicts in graphical form:

- a) deaths in ATLANTIS in a comparative graph form
- b) deaths in ATLANTIS (the scene of the earthquake)
- c) deaths in Port Albert (the scene of the second earthquake)
- d) deprivation of water and food
- e) management of aid and repair resources.

This provides a starting point for consideration of a review

of players actions, an examination of their effectiveness and the problems which arise in the Ministry and Discord areas. The computer facility is able to significantly reduce the amount of work that would otherwise fall on the Directing Staff in producing such information.

I feel enough has been said of exercise ATLANTIS and those of you who would wish to learn more of it can do so by reference to a booklet produced by I.B.M. entitled 'A Computer Aided Exercise for Disaster Relief Management Training. <sup>(1)</sup>As a point of general interest the Software Package is provided by I.B.M. and the total computing costs incurred by the Staff College, using a London based computer bureau amounts to about £500.

(1) I.B.M. U.K. Scientific Centre, Athelstan House, St. Clement Street, Winchester, Hampshire - Booklet No.104 published in June 1979 and written by M. L. Cocklin and G. N. Ritchie.

## CONCLUSIONS

In drawing together the threads of my talk today I feel that little more need be said of the immense benefits the Police Staff College acknowledges in the use of computer based simulation exercises as an aid to training. Exercise CRUSOE may well have further potential as an operational research tool into the evaluation of policy systems and methods. Negotiations are presently taking place with the exercise developers to produce a similar exercise related to the management of a police division rather than that of a police force.

It is significant to mention though that in the main, the Staff College does not set out to train officers in the use of computers but rather in how computers may be used; that is, in providing accurate information, in planning and in providing answers to problems which, without a computer, would otherwise take up an unacceptable amount of time and effort. In both the CRUSOE and ATLANTIS simulations the students are isolated from the computers as we wish to ensure that they do not form the impression they are managing either a police force or a disaster by computer.

Some of the perceived implications of computer simulation have been discussed particularly with regard to the development costs and also the associated computing costs when the user is

obliged to make use of a computer bureau. Further, in training establishments such as the Staff College, which experiences a fairly rapid turnover of staff, it is necessary to ensure that sufficiently well trained and motivated members of Directing Staff are available to manage the exercise having regard to their other teaching commitments.

Two additional matters for consideration are the degree of sophistication the user considers necessary and the duration of time over which such exercises should be conducted. In respect of the latter issue it is suggested that for strategic exercises sufficient time must be made available for the students to 'analyse' the situation so that their decisions are considered and planned ones rather than time stressed ones and this is very much in keeping with the educational aims of the Staff College.

Finally, 'CRUSOE' and 'ATLANTIS' are both exciting pieces of research and in addition to providing a high degree of relevance and reality to the simulations they provide a dynamic learning environment for students to practise their skills in problem solving and decision making processes. At present our experience is somewhat limited but the response so far provides ample evidence of the need to move further into this area of training which is truly in keeping with the Staff College motto - "Studius alitur auctoritas" (Authority is strengthened by learning).

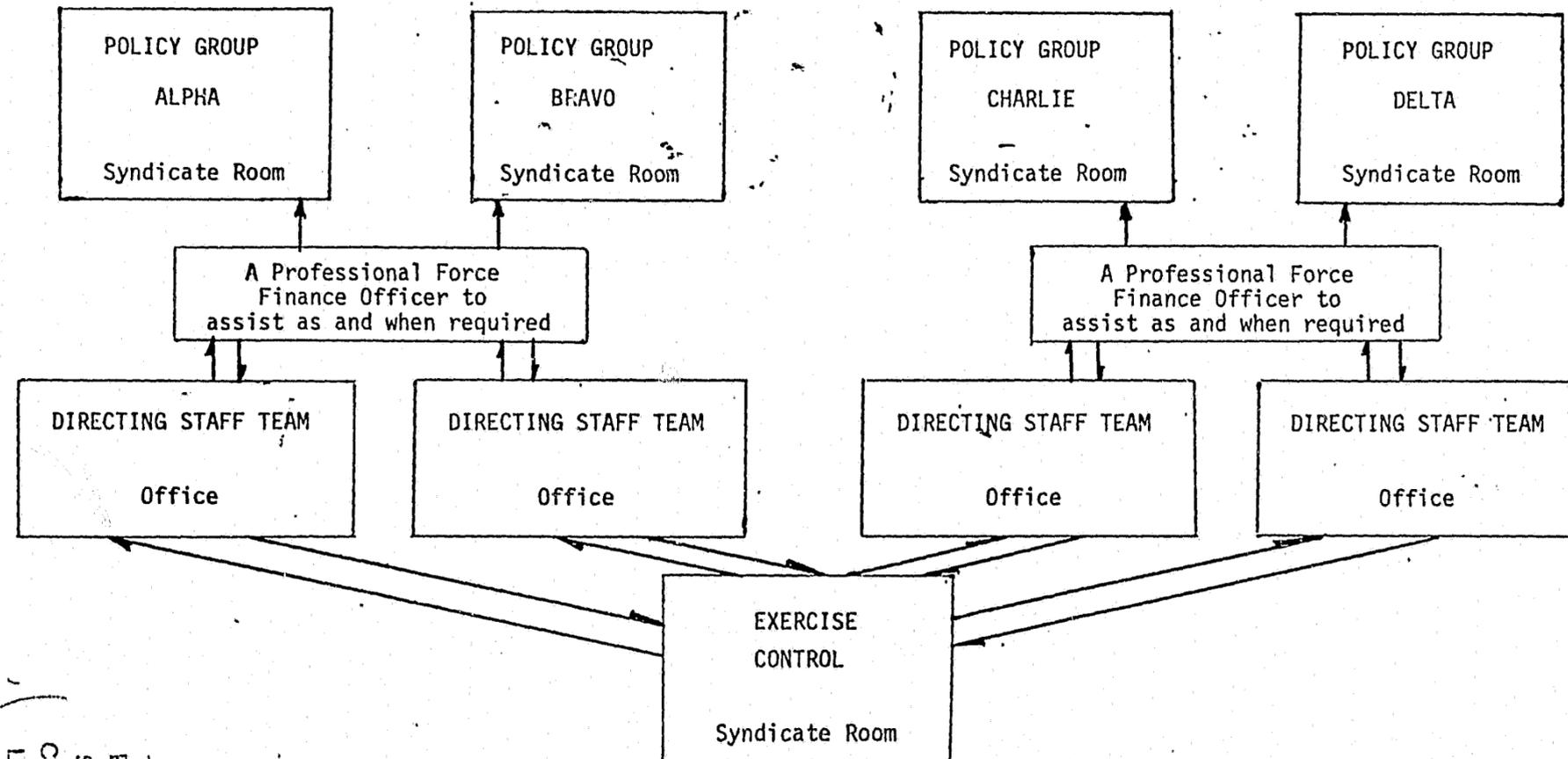
APPENDIX 'A'

EXERCISE CRUSOE - DRAFT TIMETABLE

DATE/TIME 0850 0940 1040 1100 1150 1250 1400 1530 1600 1650 1750

FRIDAY 28TH AUGUST	Briefing, reading and discussion with D.S.										
TUESDAY 1ST SEPTEMBER		Coffee			Lunch			Tea	Dummy run and preparation of 5-year plan		
WEDNESDAY 2ND SEPTEMBER	-----		R	O	U	N	D	1	-----		
THURSDAY 3RD SEPTEMBER		R	O	U	N	D	2		Private Study	Free	
FRIDAY 4TH SEPTEMBER		R	O	U	N	D	3		Private Study	Free	
MONDAY 7TH SEPTEMBER		R	O	U	N	D	4		Spare	Private Study	
TUESDAY 8TH SEPTEMBER		R	O	U	N	D	5		Preparation project presentation		
WEDNESDAY 9TH SEPTEMBER	Preparation of project presentation							Spare		Spare	
THURSDAY 10TH SEPTEMBER	Project presentations by Group						Prepare for debrief		Spare		
FRIDAY 11TH SEPTEMBER	Plenary Session 1		Debrief Session 2				D.S. Debrief		Free		

Directing Staff Organisation In 'Generation Phase'



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APPENDIX 'B'

**END**