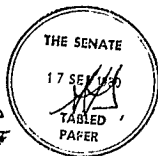


DEPARTMENT OF THE SENATE
Paper No. 1635
DATE
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17 SEP 1980
Chas. Law
Acting Clerk of the Senate



**Finance Minutes on
Reports 174 and 175
together with summaries
of those reports**

Report

183

**Joint Committee of
Public Accounts**

THE PARLIAMENT OF THE COMMONWEALTH OF AUSTRALIA

JOINT COMMITTEE OF PUBLIC ACCOUNTS

183RD REPORT

FINANCE MINUTES ON THE COMMITTEE'S

174TH AND 175TH REPORTS

Together with

SUMMARIES OF THOSE REPORTS

Australian Government Publishing Service
CANBERRA 1980

JOINT COMMITTEE OF PUBLIC ACCOUNTS

TWELFTH COMMITTEE

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J.C. KERIN, M.P.

The Hon K.M. CAIRNS, M.P.*

* Ex-officio member being Chairman,
House of Representatives Standing
Committee on Expenditure

DUTIES OF THE COMMITTEE

Section 8.(1) of the Public Accounts Committee Act 1951 reads as follows:

- 8.(1) Subject to sub-section (2), the duties of the Committee are:
- (a) to examine the accounts of the receipts and expenditure of the Commonwealth including the financial statements transmitted to the Auditor-General under sub-section (4) of section 50 of the Audit Act 1901;
 - (aa) to examine the financial affairs of authorities of the Commonwealth to which this Act applies and of intergovernmental bodies to which this Act applies;
 - (ab) to examine all reports of the Auditor-General (including reports of the results of efficiency audits) copies of which have been laid before the Houses of the Parliament;
 - (b) to report to both Houses of the Parliament, with such comment as it thinks fit, any items or matters in those accounts, statements and reports, or any circumstances connected with them, to which the Committee is of the opinion that the attention of the Parliament should be directed;
 - (c) to report to both Houses of the Parliament any alteration which the Committee thinks desirable in the form of the public accounts or in the method of keeping them, or in the mode of receipt, control, issue or payment of public moneys; and
 - (d) to inquire into any question in connexion with the public accounts which is referred to it by either House of the Parliament, and to report to that House upon that question,

and include such other duties as are assigned to the Committee by Joint Standing Orders approved by both Houses of the Parliament.

FINANCE MINUTE ON THE COMMITTEE'S
174TH AND 175TH REPORTS

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CHAPTER 1

INTRODUCTION AND OBSERVATIONS

1.1 Arrangements to ensure that appropriate action is taken arising from comments contained in the Committee's Reports have been in operation since 1952 although reviewed periodically. These were known as Treasury Minute arrangements.

1.2 Following the creation of the Department of Finance on 7 December 1976 it was agreed that the arrangements should continue as before and should now be known as the Department of Finance Minute.

1.3 As they now stand the procedures are:

1. The Report of the Committee is tabled by the Chairman in the House of Representatives and by a Member of the Committee in the Senate. Motions are moved in both Houses of the Parliament that the Report be printed as a Parliamentary Paper.
2. The Chairman of the Committee thereafter forwards a copy of the Report to the Minister of the Departments affected and to the Minister for Finance with a request that he give the Report his consideration and inform the Chairman of the action taken to deal with the Committee's conclusions.
3. The reply received, in the form of a Department of Finance Minute, is then examined by the Committee and, together with the conclusions of the Report to which it relates, is submitted as soon as possible as a Report to the Parliament.
4. Should the Committee find during its examination of a Department of Finance Minute that certain recommendations are not fully dealt with or are subject to a further Minute, it holds an exploratory discussion with officers of the Department of Finance prior to the submission of the minute to the Parliament.
5. In reporting a Minute to the Parliament, the Committee, except in special cases does not usually make any comment other than to note recommendations not fully dealt with or subject to a further Minute.
6. When the Committee next examines the department concerned the Department of Finance Minute is considered by the Committee if applicable.

7. The Department of Finance furnishes the Committee with a half-yearly report on outstanding Minutes, indicating the progress made in dealing with the Committee's comments.


Observations


1.4 The Department of Finance Minutes on the Committee's 174th and 175th Reports were received on the 11 September 1980. These reports dealt with the acquisition of computer systems in the Commonwealth Public Service and the Public Service Board's MANDATA Project. Because of the importance of this matter the Committee decided to table the Minutes as soon as possible.

1.5 Due to time constraints we have not been able to examine or comment on the Minutes, but propose to do so at a later date. The Committee will report its findings to the Parliament with its next report on ADP Co-ordination and Control in the Commonwealth Public Sector.

1.6 The Committee noted from the 1980 Public Service Board Annual Report, that, as a result of external reviews by this Committee and the Auditor-General's Office, the Board carried out a fundamental reappraisal of the MANDATA project and found it had not been able to achieve the objectives earlier set for it. The Board has now revised its program accordingly.

For and on behalf of the Committee,


David M. Connolly, M.P.,
Chairman


M.J. Talberg,
Secretary,
Joint Committee of Public Accounts,
Parliament House,
CANBERRA

16 September 1980

CHAPTER 2
DEPARTMENT OF FINANCE MINUTE ON THE 174TH REPORT
OF THE JOINT COMMITTEE OF PUBLIC ACCOUNTS ON THE
USE OF ADP IN THE COMMONWEALTH PUBLIC SECTOR,
ACQUISITION OF SYSTEMS IN THE PUBLIC SERVICE AND
THE 175TH REPORT ON THE MANDATA PROJECT

Committee's Recommendations
174th Report
(23 November 1978)

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The 174th Report was presented in November 1978 and is the first of several reports on computer use foreshadowed by the Committee.

Because of the service-wide implications of the Report it was decided, in consultation with the Public Service Board, that it needed to be given more broadly based consideration than was normally necessary. Accordingly a steering committee was established under the chairmanship of the Board with representation from the Department of Prime Minister and Cabinet, the Department of Finance and the Department of Administrative Services, to consider the Report. All departments were given the opportunity to comment and several working parties dealt with specific recommendations in depth.

Detailed consideration was also given to the suggested interim guidelines for the computer acquisition process.

This consultative process resulted in a Submission to the Government in September 1979, but in the knowledge that a further report from the Joint Committee was expected to be presented shortly, the Government decided that it would be appropriate to respond to both reports together.

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The 175th Report was presented on 25 Sep 1979 and although dealing primarily with the MANDATA System it also contained a number of recommendations which referred to service-wide issues and to that extent complemented Report No. 174.

It was considered appropriate in the circumstances to reconvene the steering committee to consider the non-MANDATA recommendations. The recommendations relating to MANDATA were considered by the Public Service Board

It is understood that system acquisition procedures are to be the subject of a separate report by the Joint Committee and this response does not address the interim guidelines contained in the 174th Report.

RECOMMENDATION 1

Parliament should be advised of the details whenever a Minister endorses a proposal for a 'major' computer acquisition.

Ways are being examined of improving the existing sources of advice of acquisitions available to Parliament. In addition Ministers will provide specific advice of 'major' acquisition proposals to Parliament, except where matters such as national security are involved. The nature and timing of that advice would be determined by the Minister(s) concerned on consideration of the individual proposals.

RECOMMENDATION 2

The Department of the Prime Minister and Cabinet and the Public Service Board should issue guidelines for determining what constitutes a 'major' proposal and which should be made known to Parliament.

A 'major' proposal will be defined as any proposal incurring equipment expenditure in excess of \$2m on the basis of purchase or lease over 4 years. This definition will be kept under review.

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RECOMMENDATION 3

Prior to its acquisition, quantified objectives should be set for the contribution that each proposed computer system will make to departmental goals.

This practice should be followed where feasible. However, it should be recognised that underlying assumptions upon which quantification is based may result in degrees of imprecision; indeed, some objectives are not capable of quantification.

RECOMMENDATION 4

Prior to an acquisition which might have significant impact on employment within the public sector, estimates should be given to Parliament of the anticipated costs and benefits and all expected effects, including effects outside the department which is acquiring the system, both tangible and intangible.

Parliament will be advised of the anticipated costs and benefits of relevant proposals and the effects where this is possible. The response to Recommendation 1 also applies. It is noted that the broad information sought by way of this Recommendation will, of necessity, include some which can only be based on subjective judgement and prediction. Moreover it is extremely difficult, indeed impossible, to predict with any accuracy the overall employment effects of even a simple case of a proposal designed to do a given task with less labour. See response to Recommendation No. 22, 175th Report.

RECOMMENDATION 5

The actual contribution of major computer systems to departmental goals should be measured against initial objectives and the variances accounted for.

Departmental management has a responsibility to monitor the achievement of stated objectives bearing in mind that external influences may affect the objectives over a period of time.

RECOMMENDATION 6

Detailed objectives and criteria for selection of supplier should be established for each procurement before beginning the procurement.

In general, this is the current practice. The objectives to be achieved by the installation, the broad criteria for evaluation and the methodology for applying the criteria should be established as far as practicable before the procurement process commences and certainly before tenders close. The response to Recommendation No 24 is also relevant.

RECOMMENDATION 7

A decision to proceed with a major computer procurement should be based on its expected ability to meet a standard minimum objective criterion of cost effectiveness calculated according to the Public Service Board's guidelines.

Taken literally the use of a single standard minimum cost effectiveness ratio is not the sole consideration for computer acquisition decisions. Decisions to proceed with computer acquisitions may be taken on a least cost basis if a project is to be undertaken under Government direction or where a continuing service must be provided. On the other hand a project which achieves 'a standard minimum cost effectiveness ratio' may not proceed if there are limitations on funds or other Government priorities dictate that the acquisition not proceed.

The Government notes the amplification of its earlier views by the JPCPA on this issue as recorded at paragraph 5.22 of the 175th Report.

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RECOMMENDATION 8

A detailed description of the procurement process when it has been defined, should be published so that it may be clearly understood by the public service and suppliers.

The Department of Administrative Services intends, as resources permit, to publish descriptions of purchasing processes generally.

RECOMMENDATION 9

Details of contracts entered into for computer equipment, software and services should be published in the Commonwealth Gazette. Such details should include any significant deviations from government standards terms and conditions, price and in the case of system procurement, the configuration of equipment and software.

The Government considers that the current practice of publishing summaries of all contracts arranged allows interested parties to ascertain the results of Government tenders. Unsuccessful tenderers, potential tenderers and other genuinely interested parties can, under existing provisions, obtain additional appropriate information when this is required. Costly and time consuming procedures would be required to provide the detailed information as indicated in this Recommendation.

RECOMMENDATION 10

The Government's intention to procure computer equipment, software or related services without open tender (eg by a certificate of inexpediency) should be published in the Commonwealth Gazette not less than 14 days prior to approval of the requisition by the authorising officer, to enable all suppliers who wish to compete for the business to show cause why they should be invited to tender.

Certificates of exemption (formerly Certificates of Inexpediency) are issued only after due consideration has shown there are sufficient grounds of impracticability or inexpediency to waive the public tendering process, with a consequential minimising of time and costs. The Government considers that the procedures recommended would add to administrative costs and introduce further delays into the procurement cycle without necessarily providing significant advantage to the Commonwealth or suppliers. Delays would arise from the need to undertake thorough investiga-

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tions of suppliers' claims that they ought to be allowed to compete and this would defeat the objective of the Certificate of Exemption in cases where urgency is the reason for it. Information on Cs of E is of course provided to those making enquiries on contracts arranged - response to Recommendation 9 refers.

RECOMMENDATION 11

The working of co-ordinating bodies should be fully open to Parliamentary scrutiny.

General guidelines applying to the provision of evidence by officials to Parliamentary Committees have been published (see House of Representatives Hansard, 28 Sep 1978, pages 1504 to 1509). These guidelines apply equally, of course, to co-ordinating departments and authorities as to others. In respect of standing interdepartmental committees and the like it would be appropriate for questions relating to the working of such bodies to be addressed in the first instance to the Minister in charge of the department or authority providing the Chairman of the body, or as appropriate to the department or authority itself.

RECOMMENDATION 12

Departmental proposals (as specified in ADPIC 9) should continue to be reviewed by a co-ordinating body.

This procedure will continue. The Government notes that ADPIC 9 has recently been revised to provide further levels of exemption to departments in respect to the submission of proposals to the IDC on ADP. Further revision of ADPIC 9 would be required if a decision were made to change existing review arrangements.

RECOMMENDATION 13

Internal departmental controls should be applied to the acquisition of ADP systems to ensure that, inter alia:

- . a computer is ordered only if it is likely to produce greater benefits than other processing alternatives;
- . the most suitable facilities and/or services are selected;
- . a pre-installation plan is prepared against which results and progress can be measured.

Guidelines are currently being prepared which should assist departments in establishing suitable controls where these do not already exist.

RECOMMENDATION 14

Internal audit should be applied at appropriate intervals to evaluate the soundness, adequacy and application of acquisition control processes within departments.

Departmental managements will be requested to ensure that internal audit programmes include this aspect. Guidelines are currently being prepared which should assist departments in formulating procedures.

RECOMMENDATION 15

Standards of time and cost should be established for procurement against which review and co-ordinating bodies should be held accountable for costs incurred and benefits lost.

While the broad thrust of the recommendation has appeal it is impracticable to set standard times for the various phases of procurement for all proposals because of the lack of comparability between proposals even when they have the same value. An alternative approach which takes into consideration the specific nature of each proposal would be to establish time/cost targets for each phase of individual procurements. These would provide

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controls against which actual performance could be measured. Delays and costs within the procurement process are attributable to several causes many of which are not directly related to review and co-ordinating bodies. The Government considers that the review and co-ordination processes deemed necessary are justified by the overall consistency and economy thereby achieved. While review and co-ordinating bodies should at all times be fully conscious of their responsibility to discharge their role without unnecessary delays, it is not considered that holding these bodies accountable for particular calculations of costs incurred or benefits lost arising from the exercise of their function would contribute to this end.

RECOMMENDATION 16

The Auditor-General should audit major ADP acquisition periodically and report to Parliament on his findings.

Recommendations of Parliamentary Committees are taken into consideration in developing the work program for each year within the Auditor-General's Office and, if appropriate in terms of the commitment of resources and the overall objectives of the Office, are included in that program.

RECOMMENDATION 17 (a) and (b)

The Public Service Board, in conjunction with the Department of Administrative Services, should:

- (a) carry out an analysis of actual times required for all phases of Commonwealth and private sector computer procurement;

It is noted that because the private sector does not have the over-riding constraint of public accountability in its procurement processes it does not have the number of checks which are necessarily built into Government procedures. Nevertheless, while there would be difficulty in making comparisons, it is accepted that there would be value in

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- (b) by comparison, identify areas in which potential savings are possible.

RECOMMENDATION 17 (c) and (d)

The Public Service Board, in conjunction with the Department of Administrative Services, should:

- (c) set time standards for each phase against which delays can be costed and brought to account in conjunction with the acquiring departments;
- (d) report the actual costs of each phase of major procurements.

RECOMMENDATION 18

Review and co-ordinating bodies such as the IDC on ADP and the Public Service Board should be publicly accountable for the costs saved and benefits lost due to their function. The Auditor-General should review and report on the activities of these bodies relevant to computer acquisition, including the review of costs and benefits.

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examining private sector procurement processes with a view to identifying areas of potential savings.

As indicated in the response to Recommendation 15 the adoption of time standards as a basis for costing is impracticable. Rather than recording actual costs which would be difficult to establish, value is seen in setting time targets for each phase of individual major procurements and by regular review to measure and compare actual performance, and it is proposed that this be done.

The Government considers review and co-ordination processes are justified by the overall consistency and economy thereby achieved, but it requires that review and co-ordinating bodies at all times be conscious of the need to discharge their functions expeditiously. The concept of public accountability must, however, be considered in the broader context of the principles of Ministerial responsibility, and also take into account responsibilities that may be statutorily prescribed - for example, by the Public Service Act, Audit Act, and relevant regulations and directions. Bodies such as inter-departmental committees cannot be regarded as having a sufficiently separate identity to the departments and authorities from which their membership is drawn as to be

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regarded as accountable in their own right. Questions relating to the functions of such bodies might therefore be addressed in the first instance to the Minister in charge of the department or authority providing the Chairman of the body, or as appropriate to the department or authority itself.

The answer to Recommendation 11 is also relevant.

RECOMMENDATION 19

New administrative arrangements for computer procurement should be based on a cost/benefit analysis which takes into account the effect of delay on both incurred costs and lost benefits.

Any new arrangements will be designed to ensure that the procurement processes are as expeditious as possible, consistent with the level of analysis and scrutiny required by the Government and with budgetary requirements (ie it is not necessarily the case that all investments promising net benefits will be capable of being funded).

RECOMMENDATION 20

Data systems specifications should be used in preference to equipment performance specifications in the procurement of an initial computer system or the expansion of an existing system by additional components.

In certain situations use of a data systems specification might be the preferred approach. However, each prospective invitation to tender would need to be carefully examined to determine whether a data system specification, equipment performance specification, or a combination of both is the most appropriate method. In practice a combined data system/equipment performance specification has proved generally to be the most appropriate.

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RECOMMENDATION 21

When equipment performance specifications are used for the procurement of an initial system or the expansion of an existing system by additional components such specifications should be designed to promote competition to the fullest extent practicable.

The current approach is to endeavour, as far as is practicable, to achieve this objective.

RECOMMENDATION 22

For complex projects a two-stage proposal/tender process should be considered in which:

- (i) The first stage invites proposals (not tenders) for the solution of the problem defined in the mainly functional specification.
- (ii) The second stage calls for tenders from a limited number of the respondents to the first phase, based on a more detailed technical specification which may combine data system requirements and equipment performance requirements.

For certain projects (including complex ones) a two-stage proposal/tender process should be considered. Indeed this approach has been adopted for a current computer procurement.

RECOMMENDATION 23

The Public Service Board should, as soon as practicable develop and publish an ADP information manual for departments' use in evaluating tenders and proposals for computer systems or parts of systems.

An ADP information manual on tender evaluation will be produced subject to the following understandings regarding the approach to be taken to (a), (b) and (c). Thus the assignment of monetary values to capabilities and costs to their absence from responses

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The Manual should include methods for:

- (a) assigning a monetary value (ie the value to the department) to all 'desired' capabilities or characteristics specified in the request for proposal or invitation to tender;
- (b) assigning a 'cost' to the absence of each desired capability or characteristic from each supplier's proposal, to be used as a penalty to the supplier in costing his proposal;
- (c) calculating the total cost - direct and consequential of each supplier's proposal over the entire system life.

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is one technique that can be employed in evaluating tender responses; another is the application of weighted scores. It is a matter of judgement as to which technique is the most appropriate for a particular set of capabilities; current practice is to reduce significant differences between short listed tenders to money terms wherever possible.

There are, however, several basic difficulties in assigning monetary values to capabilities, and a very large effort is required if this inherently complex technique is to be used properly. These difficulties include:

- (a) having assigned a value to the presence of a capability and a cost to its absence, it is extremely difficult to realistically apportion the value or cost when a capability is offered in part or is proposed to be satisfied in an unexpected manner;
- (b) the inter-relationships between different desirable capabilities (or components thereof) which may enhance or detract from the worth of a capability make it difficult to assign meaningful values;
- (c) where an additional, potentially desirable capability having some relationship to those specified is offered, or where oversatisfaction of a specified characteristic occurs, it may be in the interests of the Commonwealth to be able

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to take this into account. In such cases it is unlikely that this could have been anticipated before evaluation, and it would therefore be very difficult to assign realistic values under the procedure recommended.

It follows that any attempt to anticipate all responses that fully or partially satisfy requirement will need excessive effort at specification times - except in the most simple of procurement projects.

In addition, there exists as much danger in the inappropriate conversion of proposals to money terms, especially if the assumptions and analyses are not revealed, as there is in the use of subjective reasons to support comparisons, and therefore as much danger of results being manipulated.

RECOMMENDATION 24

Departments should be required to determine the detailed evaluation method and criteria, including the desired capabilities and characteristics and their values, before inviting proposals or calling tenders.

The objectives to be achieved by the installation, the criteria for evaluation and the methods by which the criteria are to be applied should be established where practicable before the request for tenders is released and certainly before tenders close and also should be included so far as is practicable within the tender specification. However use of the requirements costing approach is not always relevant for the reasons outlined in the response in Recommendation 23. The response to Recommendation No 6 is also relevant.

RECOMMENDATION 25

The specification of requirements accompanying a request for a proposal or an invitation to tender should include the following information:

- (a) the value to the user of each desired capability or characteristic;
- (b) for each desired capability or characteristic, the method which will be used to calculate the cost penalty which the supplier will incur in the evaluation if he does not include that capability.
- (c) the expected system life to be used for the purpose of costing.

RECOMMENDATION 26

The Public Service Board should increase its activity in the development of standards and guidelines for sound ADP practice and procedures.

Difficulties are seen with 25(a) and (b) for similar reasons to the reservations regarding the assignment of monetary values as outlined in the response to Recommendation 23. The Government considers that each case requires that the most appropriate means is used to inform prospective tenderers of the mandatory requirements and whether certain other capabilities or characteristics are regarded as being desirable or highly desirable. 25(c) will be applied.

Consistent with priority in the utilisation of resources the Board will continue development of its series of guidelines to assist departments in the introduction, development, use and control of ADP systems. Further, the Board intends to continue its involvement in the activities of relevant committees of the Standards Association of Australia (in conjunction with other government bodies and industry representatives), to promulgate information on standards and to encourage departments to use appropriate international and national standards.

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RECOMMENDATION 27

Standards developed for the technical features of computing equipment and software should not be such as to limit competition among equipment suppliers or prevent the Commonwealth from benefitting from further technical progress.

Any standards developed of this type would be in compliance with this Recommendation.

RECOMMENDATION 28

Technical standards should be arrived at through a process of wide consensus and should not be developed in isolation from industry or users.

This procedure would be followed in any standards development work.

RECOMMENDATION 29

Consequently, where it is desired to promote a technical standard, the standard should be explicit and open for discussion. The Commonwealth should not attempt to achieve uniformity through the specification of mandatory technical features except where such features have been explicitly identified as proposed or approved government standards and after wide discussion throughout the government and a high degree of consensus.

The recommended approach would be followed in any standards development work.

RECOMMENDATION 30

A task group should study the advisability of the appropriate timing for establishing a packet-switched data network for Australian Government use conforming to

Under the auspices of the recently established Australian Public Service Telecom Users Group (APSTUG), a joint APS/Telecom task group was set up to study the needs of Australian Govern-

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international standards. We suggest that this group be required to submit its recommendations, to Cabinet by 30 Jun 1979.

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ment users and recommend ways in which these could be met most effectively and the timing required. This included a study of the advisability of Telecom establishing a data communications network conforming with international standards for Australian Government use and the appropriate timing for its establishment. The task group has now reported to APSTUG and its recommendations are being studied.

RECOMMENDATION 31

The development of data processing standards should be made more formal. We suggest the constitution of a government computer standards committee consisting of for example representatives from among major user departments, the Public Service Board, Telecom, the CSIRO Division of Computing Research, and major computer industry associations. The objective of such a committee would be to achieve maximum economy through interdepartmental standardisation, subject to not restricting competition among suppliers or limiting the Commonwealth's ability to capitalise on technical innovation. We suggest that the committee would make recommendations to the Public Service Board on the adoption of appropriate ADP standards.

Where possible data processing standards for the APS should conform to those standards being adopted by industry and the private sector. When occasions arise where special standards are required for the APS an appropriately constituted committee will be established. Industry associations will be involved as appropriate.

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RECOMMENDATION 32

In expanding or augmenting an existing computer installation with peripherals and/or processors where plug-compatible equipment is available in Australia, competitive tenders should be sought for the required peripherals and/or processors unless grounds for a certificate of inexpediency exist.

This recommendation accords with current procedures and the requirements of Finance Regulations and Directions.

RECOMMENDATION 33

In procuring a complete system of processor(s) and peripherals where the architecture selected for the processor is such plug-compatible units are available, then competitive tenders should be sought for such equipment unless grounds exist for a certificate of inexpediency.

As for Recommendation 32.

RECOMMENDATION 34

In either of the procurement situations described in 32 and 33 above the need to obtain compatibility with existing peripherals or processor(s), or to obtain a particular computer architecture should not be grounds for a certificate of inexpediency unless it has been definitely established that plug-compatible peripherals or processors are not available.

This course will be followed. Certificates of exemption may of course be issued on a number of grounds of which compatibility is but one.

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RECOMMENDATION 35

In deciding whether to mix vendors on one site, due regard should be paid to any additional costs which this will involve, for example, in system integration and maintenance, and such costs should be offset against any cost saving.

This is the current practice. It will be further reinforced by specific reference in the Board's Cost Effectiveness Guidelines.

RECOMMENDATION 36

Specifications of maintenance requirements should be designed to ensure free and open competition, equal opportunity, and careful consideration to all maintenance suppliers who wish to participate in government business.

Such specifications will normally be written in this manner. However in some cases there will be reasons (eg overall cost, security) which render it inappropriate to invite public tenders for maintenance requirements.

RECOMMENDATION 37

The purchasing authorities should design purchasing procedures for maintenance service which:

This is current practice and will continue to be followed.

- (a) ensure that consideration is given to all qualified maintenance vendors who wish to participate in government business;
- (b) are not unnecessarily complex and costly having regard to the size of the contract to be let.

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RECOMMENDATION 38

Because of the difficulty of selecting representative tasks and because benchmark results may not be representative of later performance in a real job environment, benchmarks should normally only be used to verify suppliers' performance claims.

Benchmarks provide the only practical method of comparing the throughput performance of tendered products in cases where such comparisons are needed and therefore have been of great assistance in evaluating such tenders. They are used extensively by central government computer procurement agencies in both the UK and USA. It must be noted however that benchmark results represent one aspect out of many that are considered in the total evaluation, and that they are employed only where absolutely necessary. The work mixes provided in benchmarks and used for throughput performance comparisons are more closely related to the actual computing work to be undertaken than those on which supplier performance claims are based.

RECOMMENDATION 39

The Department of Administrative Services should examine the feasibility of simplifying the procedure for mini-computer purchases of low aggregate dollar volume, including an examination of an annually renewed published contract with each supplier.

This will be done.

RECOMMENDATION 40

In designing improved acquisition procedures and in preparing guidelines for the documentation of departmental proposals, the Public Service Board should ensure that the procedures for minicomputers are simple and of a cost consistent with the dollar value of the equipment.

This will be done.

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(25 September 1979)

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NON MANDATA RECOMMENDATIONS

RECOMMENDATION 14

When reviewing a department's proposal for a development project, the technical IDC should ensure that consideration has been given to the experience and number of personnel required to carry out such a task, whether the department has the resources, and if necessary, how the department's resources might be supplemented.

While the views of the IDC on ADP on this matter could certainly be sought, the present modus operandi of the Committee militates against the IDC itself undertaking such an assessment. In any event the IDC on ADP is essentially an advisory/co-ordinating, rather than an executive, body. However it would be part of the IDC on ADP's present role to assure itself that proper consideration had been given to staffing requirements.

The prime responsibility for staffing of projects rests with the Permanent Head of the department concerned.

Departmental staffing and establishment requirements are also matters for Public Service Board consideration, as part of its statutory responsibilities, and when a department has the necessary approval to proceed with major initiatives in the ADP area it should approach the Board concerning any modifications to establishment considered necessary to meet the new circumstances. Recruitment of additional ADP staff to meet the established need may be required.

In some circumstances the Board may be able to arrange for the secondment of staff from other departments to augment existing staff where recruitment difficulties are experienced or expected. Alternatively, as indicated in the response to

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Recommendation 17, the Board may suggest the engagement of consultants to undertake part of all of the required development work.

Where a Permanent Head wishes to have an independent assessment made of the capability of in-house staff to undertake a project, the Board would give advice if required on the provision of suitable assessment experts either from within the APS or externally.

RECOMMENDATION 16

The Board should evaluate urgently available proprietary system development methodologies for use on the remainder of MANDATA development and on other projects.

The Board is investigating the most suitable proprietary system development methodology for MANDATA. Should this lead to a decision to purchase, the applicability of the methodology to other major projects in the Service would be examined.

The response to Recommendation 18 is also relevant.

RECOMMENDATION 17

Department Heads should be aware of the many highly specialised aspects of system development, and the problems in recruiting and re-training fully qualified personnel. Careful consideration should be given to contracting the development project to a qualified commercial organisation, or if the development is to be done within the Department, to obtaining specialist skills on contract to supplement or manage departmental staff.

There can be significant problems associated with the development of ADP systems, including the availability of adequate skilled staffing resources. Consideration is as a rule given to the various available approaches to a development project, including the engagement of a commercial organisation to undertake all or part of the work. Indeed there are examples of the adoption of this latter approach within the Public Service, the most recent being the Job Bank system for the Department of Employment and

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and Youth Affairs.

However a variety of factors enters into the decision as to how best to undertake an ADP project. Important factors frequently include:

- . the availability or potential availability in-house of expertise required for the particular project,
- . the nature and level of on-going maintenance and enhancement work on software, this being extensive in many cases and invariably more suited to an 'in-house' approach,
- . whether the software is of the 'application' or 'system control program' type or both,
- . the most effective way for the department to acquire any necessary additional skills,
- . the traditional approach to ADP project development in the department and morale effects of any change in approach,
- . problems in effectively specifying and controlling contractors' work,
- . whether a 'pilot scheme' approach is appropriate for the project, bearing in mind the extent of the unknowns.

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The scope and variety of ADP Projects and skills within the Public Service are very wide. Many large systems have been successfully implemented. It would be inappropriate to draw general conclusions from a review of one project in which major problems were experienced. Nevertheless in recent years there have been some difficulties in the recruitment and retention of experienced specialist staff. These difficulties mainly stem from the increased demand for, and from the general shortage of, experienced ADP personnel which affect the private as well as the public sector.

Consideration will be given by the Board to means by which the awareness of ADP matters may be enhanced throughout the relevant management areas of the Public Service. Furthermore a facility will continue to be provided for the supplementation of in-house skills by commercial contractors where this is considered necessary.

The response to Recommendation 19 is also relevant to this Recommendation.

RECOMMENDATION 18

If it is necessary to develop a major system with departmental resources a proven formal system development methodology should be used.

Currently available system development methodologies are being examined by a number of departments to determine their suitability for departmental use

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and a few departments already use such methodologies. In addition the Board has canvassed user experience with these methodologies in Australia. Discussions were held during 1979 with representatives of 11 users in the public and private sectors. The survey showed that some users, particularly new ones, are attracted by the (potential) benefits of these packages and some users have had favourable experience with them. Results of the survey were made available to those departments contemplating the acquisition of a system development methodology.

Final decisions concerning the use of these methodologies during development of major systems with departmental resources are the responsibility of the relevant Permanent Heads. It is important that the chosen methodology in each case is the one best suited to the work and environment of the department.

RECOMMENDATION 19

Application packages and system programs should only be developed within the service if it can be shown that this approach is more cost-effective than obtaining (and possibly modifying) commercially available programs.

Software is usually regarded as comprising two main types, namely, system control programs (SCPs) and application programs (APs). SCPs are frequently furnished by equipment suppliers or specialist companies and the use of SCPs other than standard products is not normal within the Service. Where modification or development of SCPs is unavoidable the use of external specialists is preferred.

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For APs, the use of available packages is preferred where practicable and where minor modifications only are necessary. The advantages which can accrue from speedier implementation, improved reliability, reduced development costs, etc. are widely recognised. However commercial packages are not available for many departmental applications. Indeed the majority of large systems within the Service necessitate the development of tailor-made applications programs. In many cases these are appropriate to 'in-house' development, particularly where a departmental competence for continued maintenance, modification and support for the system is an important requirement.

RECOMMENDATION 20

The Public Service Board should give consideration to extending its guidelines for determining the economics of computer system proposals to include methods for the assessment:

- . risk
- . impact on other projects
- . capacity and capability of the department to carry out the project.

The Public Service Board has indicated that it regards its guidelines on cost-effectiveness analysis of ADP systems as being in a state of evolution and that changes would be made from time to time as further experience is gained with their use in the Public Service environment. Indeed areas have already been identified where improvements could be effected to provide greater clarity and give greater emphasis to key aspects.

The Board is giving consideration to the suggestion made by the JPCPA in this Recommendation regarding extensions to the guide-

lines. Meanwhile the Board notes that a facility is provided in the guidelines through the reference to "sensitivity analysis" whereby aspects of "risk" and "the capacity and capability of the department to carry out the project" could be included in the cost-effectiveness analysis.

The "impact on other projects", where this refers to projects in other departments, would be difficult for the department undertaking the analysis to handle without assistance from some of the central co-ordinating authorities.

In any event within the bounds of cost-effectiveness analysis as currently specified this latter item would not be included in the calculation of cost-effectiveness ratio unless there was a direct relationship with the proposed project and the effects could be quantified. That is not to say that reference to such matters where they are of significance should be excluded from the total analysis. The guidelines make provision for such inclusions.

RECOMMENDATION 21

The Board should supplement its guidelines on cost-effectiveness analysis with similar guidelines on the assessment of the effectiveness of computer systems in operation.

The Board advises that there is provision in the guidelines on cost-effectiveness analysis for the use of the methodology to compare results achieved with those predicted (see Chapter VI).

Another method of examining the effectiveness of operational computer systems is to undertake independent reviews. The post-implementation reviews of ADP system conducted by the Board are examples of this approach. The Board will endeavour to provide departments with guidance on the general structure of such reviews but detailed procedures or guidelines could not be formulated because the approach to each review has to be tailored to fit the circumstances.

As part of another initiative standards are being prepared for the control of computer-based systems which, inter alia, will emphasise the need for establishing mechanisms to assess and monitor effectiveness.

RECOMMENDATION 22

The Board or the Department of Finance should prepare and publish guidelines to assist Permanent Heads in the rational and consistent analysis of benefits and costs of proposed large-scale computer projects (eg for presentation to Ministers), taking into account:

- the extent to which the project contributes to the policy of the Government of the day.
- the costs and benefits, social and otherwise, of the project.
- the impact on alternative projects.

The purpose of the document "A Guide to Cost Effectiveness Analysis of ADP Systems" was to aid in rational and consistent analysis of proposed computer projects. There are many difficulties in the way of laying down guidelines capturing all relevant matters in all cases or providing for quantification of aspects which are inherently immeasurable. Much will always depend on the judgement of the analysts and of the policy advisers in identifying all the important factors for Government consideration.

To illustrate - and noting here comments in the Report relating to effects of computer projects on unemployment levels - it would

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- the impact on personnel and organisations within the Public Service.

not be practicable to produce guidelines which would enable such effects, if any, to be quantified with any hope of accuracy, or; indeed, of having the direction of change predicted with confidence. New capital investment in computers (or indeed other capital equipment) has the effect of permitting given tasks to be carried out with fewer labour resources and/or of expanding the range of tasks possible with given labour resources. Usually there are elements of both.

The approach of trying to look at the direct (gross) effects of new investment on employment is necessary for redeployment or re-training reasons. But from the point of view of assessing the overall merits of the project it is superficial and can introduce a negative bias. This is so because such an approach would leave out of calculation the effects (compensatory mechanisms) of increasing capital investment on productivity and hence unit costs. In the public sector such effects reflect back either in decreases in relative prices or higher expenditure elsewhere or lower taxes than would otherwise be the case. These effects in turn raise consumers' real capacity to demand goods and services. That effect on capacity to demand more real goods and services in turn has an effect on demand for labour.

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In brief, even if the simple case is taken of an investment designed to do a given task with less labour, it does not follow - and the analyst cannot assume that it will follow - that the impact on employment will be negative. The overall employment trend in the economy reflects a complex interaction of pluses and minuses and it is not possible to track down the specific chain of consequences that represents the "link" between a particular investment or a series of alternative investments and the overall level of employment.

This brief comment cannot, of course, do justice to the subject. The matter was extensively discussed in the Report of the Committee of Inquiry into Technological Change in Australia, released in July 1980. There is an extended general literature on the subject. Looking specifically to investment in computers the view expressed above is consistent with the thrust of a recent report published by the United Kingdom Department of Employment: "The Manpower Implications of Micro-Electronic Technology".

RECOMMENDATION 23

Submissions to Cabinet on large computer projects should make clear all the expected or planned effects including:

- . staff redeployment
- . effect on size of the Public Service
- . effect on unemployment levels
- . retraining costs
- . other significant effects not accounted for in the acquiring department's cost effectiveness analysis.

All submissions to Cabinet on computer projects should make clear all likely significant effects, including known employment effects, of Cabinet approval of recommendations of submissions. Indeed it is a general requirement of Government that known employment effects, both within the Public Service and generally, are to be stated in all Submissions.

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RECOMMENDATIONS 24 and 25

The question of whether uninterrupted power supply is required should be resolved before a proposal is made to the IDC and the costs of providing uninterrupted service should be included in the cost estimates when the proposal is submitted to the IDC for endorsement.

The Board's guidelines for cost/effectiveness analysis should include a reminder that the cost of uninterrupted power supply should be included in the estimate of capital costs.

RECOMMENDATIONS 26 and 27

From early planning through to acceptance, departments acquiring major computer systems should obtain the services (not necessarily full-time) of a well qualified and experienced computer site planning engineer, whose responsibilities should include planning site requirements, estimating costs, co-ordinating contractors, testing site readiness and correct installation of services before delivery of the computer, and acceptance of the site.

If this person cannot be obtained from within the Service, a qualified consultant should be engaged.

The matters are covered in the existing Cost Effectiveness Guidelines which have been available since August 1977. There is reference at Appendix C - Definition of Cost Effectiveness Items - to the need to include costs relating to:

'Electric power generation, power stabilising and other plant specifically supporting the ADP installation.' (item 1.1.6)

Attention would be drawn to the need for early site planning in any general guidelines prepared on the acquisition of major computer systems (see response to Recommendation 28). Departments would be advised to clearly identify at an early stage their role in defining computer site requirements and in arranging for these requirements to be met. An appropriate planning and liaison officer should be appointed. Assistance might need to be sought from sources external to the Department where the Department has not had previous experience in computer site planning. It will not normally be necessary to seek assistance outside the Service. Close liaison will need to be maintained with the Departments of Housing and Construction and Administrative Services and, in

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the ACT, with the National Capital Development Commission, all of whom have functional responsibilities which are involved in meeting computer site requirements.

RECOMMENDATION 28

Since inexperienced departments may not recognise the importance of this function or their incapacity to do the job themselves, the IDC should for the time being be responsible for advising the department of the need for the function and how to obtain the necessary skills.

This aspect would be included in any general guidelines prepared by the Board on the acquisition of major computer systems. This approach would have advantage over making the IDC responsible for advising departments in that in some cases the IDC may not be aware of departmental plans sufficiently early.

RECOMMENDATION 29

The National Capital Development Commission (NCDC) and the Department of Housing and Construction should note that delay in starting major projects can entail heavy costs and should take into account the magnitude of such costs in their efforts to ensure that site preparation is complete and correct by the scheduled delivery date. Officers should be accountable for delays.

Both the National Capital Development Commission and the Department of Housing and Construction are conscious of the need for the completion of computer site preparation work to correspond with or precede the delivery of the computer equipment. It is for this reason that emphasis is placed by these organisations on early decisions on the site to be used and early availability of site requirements. The identification of a suitable site and its acquisition and allocation can sometimes present problems and become sources of delay.

The NCDC and the Department of Housing and Construction have indicated they always endeavour to arrange site design and construction to meet targets. Nevertheless unforeseen difficulties can arise on occasions and in these circumstances special

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efforts are made to avoid or minimise additional charges arising, eg for storage of computer equipment.

To avoid recurrence of difficulties the experience gained from examination of the reasons for past delays would be reflected in general guidelines referenced in the response to Recommendation 28.

RECOMMENDATIONS 30 and 31

Departments in making returns to the Board for the purpose of ADP resource planning should include forecasts of requirements for computer room space.

The Board should establish suitable procedures to ensure that forecasts are obtained from departments, aggregated into a suitable format, communicated to the NCDC and the Department of Administrative Services and incorporated in new building plans to ensure that computer projects which have been correctly forecast by departments with sufficient notice are not delayed for want of space or other facilities.

RECOMMENDATION 32

When submitting proposals for computer systems to the IDC on ADP, departments should be required to include details of the arrangements made with the Department of Administrative Services for computer accommo-

Departments have the responsibility for the forward planning of their accommodation and works requirements including any special requirements generated by ADP activities. It is inappropriate for the Board to act as intermediary between departments and the NCDC and the Department of Administrative Services. It would however be appropriate for the Board to include reference in guidelines (see response to Recommendation 28) to the need for departments to advise the NCDC and the Department of Administrative Services as early as possible of likely computer accommodation space requirements.

It is not the function of the IDC on ADP to assess comment on the feasibility and funding of arrangements for computer accommodation, nor should it be. Each department has responsibility for the forward planning of

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action, with comments on feasibility and funding if such arrangements involve Australian Government buildings.

RECOMMENDATION 33

The IDC on ADP should keep the NCDC and the Department of Administrative Services fully and promptly informed of its endorsement or otherwise of such proposals, and of any factors known to it which may change the facilities requirements previously communicated to these bodies.

RECOMMENDATION 34

In order that the Commonwealth may retain maximum negotiating strength in the procurement of major items of computing equipment or services, it should not take delivery or allow the services to commence until a formal agreement has been executed.

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its accommodation and works requirements, including any special requirements generated by ADP activities. However the importance of ensuring that adequate facilities are available is agreed and this matter would be included in any general guidelines prepared on the acquisition of major computer systems (see response to Recommendation 28).

While the cost of computer accommodation is an integral part of a Department's proposal to the IDC on ADP, the responsibility for informing other relevant authorities of accommodation requirements must remain with the Department concerned. Departments have their own internal procedures for coordinating their requirements for accommodation and works and for conveying them to NCDC and DAS. It is not appropriate to introduce an additional channel of communication through the IDC on ADP.

Preferred practice must be to refuse to accept delivery until an agreement is signed. However situations sometimes arise where there are significant advantages to the Commonwealth in accepting early delivery before contracts are actually signed. Any such early acceptance is subject to the agreement of the Department of Administrative Services.

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RECOMMENDATION 38

In line with its policy of providing a range of standard computing services available to arms of Government, tertiary educational institutions and industry, the CSIRO should give consideration to making excess capacity available on the M190 computer for administrative data processing by Government departments, to the extent that it will not adversely affect the research and development use of the computer.

The FACOM M190 computer was supplied to CSIRO at nominal cost by FACOM as part of the joint CSIRO/FACOM research and development project under the Australian Offset Program. The use of this computer for purposes other than the specific research and development project for which it was provided could give rise or could be seen to give rise to unfair advantage to a particular manufacturer or class of manufacturer in the awarding of future Government contracts. Ministers have discussed this matter and the discussions may resume after further examination of relevant issues by CSIRO.

RECOMMENDATION 43

When designing data communications systems, departments should maintain close liaison with Telecom from early planning stages so as to be aware of forthcoming data communication facilities and to enable the most cost-effective design to be achieved before equipment is purchased.

Recent initiatives such as the APS/Telecom User Group are intended to ensure that close liaison is maintained between departments using or planning to use data communicating facilities and Telecom. Also, the Board is a member of the Data Communications Consultative Group established last year by Telecom.

THE MANDATA PROJECT

The MANDATA Project was conceived in the late 1960's, it was approved at the Government level in 1974 and the Board's Office has been proceeding with its development and implementation since then.

The shortcomings in the existing manual procedures governing the recording and processing of personnel entitlements throughout the Service have been recognised for some years. The Auditor-General has drawn attention to these shortcomings in successive reports to Parliament. One of the major objectives of the MANDATA system has been to improve and modernise the manual systems by reliance on more accurate and timely computer processes, while at the same time lifting the efficiency of work in personnel areas of the Service and providing a significantly improved management information capacity.

The basic design of the project reflected the prevailing philosophy in ADP circles at the time which favoured a highly centralised approach using large 'main-frames', and the development of integrated management information systems. Changes in technology and in thinking in the industry have occurred since MANDATA was conceived. With hindsight it would have been better developed in a different way.

Over the past six months the Board has re-examined the MANDATA project and has come to the conclusion that with the resources available it cannot achieve all of the objectives earlier set for the project within a reasonable time frame. The Board has therefore concluded that the objectives of the project must be scaled down, with the immediate emphasis being on

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improving and refining the existing sub-systems which have been developed rather than to press on with the development of new sub-systems yet to be tackled. The main impact of this decision is that the proposed future extension of the MANDATA system into the processing of pay variations and the link with the existing Finance pay system will not be proceeded with at this stage.

The Board came to this conclusion reluctantly. In effect it confirms what has been becoming increasingly apparent with experience - the project will not achieve the level of staff savings and the favourable direct cost/benefit outcome which had earlier been predicted. The Board's conclusion is based on the desire to make the best of the present situation.

The project broke new ground in its objectives and scope. There was virtually no prior experience in Australia or overseas on development of similar systems. In practice it has proved to be very difficult to achieve the desired level of progress and to attain the high level of reliability and performance required.

Many of the difficulties encountered were not foreseen at the feasibility and initial planning stages, and some have been outside the Board's control. Consequently slippage in the project has occurred and this has in turn given rise to criticism of the project in particular, and the Board in general, which has been difficult to counter. This criticism has added to the difficulty of obtaining and retaining the skills needed to complete the

project on time. Four years ago the Board was facing mounting criticism that while the central computer for MANDATA had been acquired and installed, delays in the development of MANDATA products meant that it would be some time before the substantial investment in the equipment would commence being recovered. Consequently, apart from transferring some non-MANDATA work to the computer, the Board decided, on an interim basis, to utilise an existing personnel and establishments system developed by the Department of Productivity and to convert it for use as an initial feature of the MANDATA system. The use of the Productivity system was related to the Board's desire at the time to give priority to provision of a more effective management information facility to departments. This course had the advantage that it:

- enabled departments to commence at an earlier time than otherwise the task of converting personnel and establishments records onto a computer based system;
- avoided the need for very expensive development effort in writing a new system;
- gave to departments a computer based management information tool at an earlier point than would otherwise have been possible.

This strategy was examined by independent consultants in the course of a major review of the project in mid 1977. Their conclusion was that the program, as

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planned and scheduled, was consistent with a minimum cost objective.

However, the advantages flowing from adoption of the Productivity system were achieved at some cost to the project's ability to meet its objectives on time. The disadvantages of the course followed include:

- Heavy costs have been involved in supporting the Productivity system from a logistical and software viewpoint. Considerable development effort has been involved in compensating for its outmoded design philosophy and in writing special computer programs needed to enable it to function on the Board's computer
- considerable time has been devoted to identifying and rectifying faults and in supporting the interim Personnel and Establishments sub-system to the detriment of the resources able to be devoted to development of other permanent sub-systems
- weaknesses in the interim Personnel and Establishments sub-system have had a major impact on the attitude of departments towards the MANDATA project and have led to delays in implementation throughout the Service due to an understandable reluctance by departmental management to extend coverage of the MANDATA system they regarded as below expectations.

Notwithstanding the difficulties associated with the Personnel and Establishments sub-system and its impact in diverting resources away from other activities, the MANDATA Program Office has successfully completed the design, procurement, and proving of the national computer network upon which the project is based. It has also substantially completed the development and testing of four other sub-systems which are at various stages of being implemented in departments. Of these the major sub-system is that associated with automating the processing of all forms of leave, which is a very complex and labor intensive area of personnel administration. While some improvements are still being worked on, this sub-system is regarded as fundamentally sound.

Despite the earlier problems associated with the Personnel and Establishments sub-system, most of the major faults have been resolved. Given its inherent limitations, the sub-system is now regarded as operating efficiently and reliably, as a management information and recording facility.

However, three areas of concern remain.

Firstly, departments have not yet fully integrated the use of the Personnel and Establishments sub-system with existing personnel functions to the extent necessary to achieve maximum benefit from the sub-system.

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Secondly, some elements of the equipment which have been purchased have not performed up to the level of expectation and consequently there has been a higher incidence of system down time than is desired. This has had an important effect on the confidence of departments and staff in the MANDATA system as a whole. These equipment problems have been addressed as they have occurred. At the present time the equipment is performing up to a satisfactory standard.

Finally, and most importantly, because of its basic design the Personnel and Establishments sub-system cannot economically be developed further to introduce the standards and level of internal control necessary to permit its extension into the pay area and to automatically link up with the Finance payroll system. This step offers considerable economies in departmental clerical effort however, it would involve designing and developing a new Personnel and Establishments sub-system to replace the existing one. This is a major and costly task, involving possibly over 100 man-years of specialist effort.

Consequently the Board has been faced with the problem of deciding on the best course for the future. The options considered have included the extremes of abandonment of the project and of pressing on with a major development program aimed at designing and creating an entirely new Personnel and

Establishments sub-system.

Clearly the key element in the consideration of the options was whether the Personnel and Establishments sub-system should be fully developed as originally envisaged with automated calculation of pay and direct links with the Finance pay system, or whether its role should be limited to that which it has at present ie a management information system. Much of the remaining development effort is related to the need to develop more sophisticated internal control mechanisms and processes than exist at present to satisfy the much more demanding requirements associated with a pay based system.

Before reaching a decision the Board consulted all Permanent Heads on the value they saw in the MANDATA project. In general these responses indicated a strong level of support for continuing with the project from those departments with large staff which have a major management task, for example, Defence, Transport, Veterans' Affairs, Taxation. The small departments were generally unenthusiastic as they saw little to gain from the efforts needed to adopt the system and train staff; assessments proffered on behalf of the medium size departments varied.

The Board, as indicated earlier, has now decided that following its re-examination of the project, the objectives of MANDATA should be scaled down to supporting and

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refining the existing sub-systems to extending their coverage as quickly as possible and to concentrating on improving the reliability of the system and the service to users.

The automatic calculation of salary and the proposed link to the Finance pay system have been postponed indefinitely.

The revised approach has the benefit of considerably limiting the scope of the immediate task confronting the MANDATA Program Office. It gives it a clearly defined and achievable short term and it postpones decisions relating to major and costly extension of the system to a later stage when departments have been able to successfully introduce the existing sub-systems.

From the point of view of departments, virtually all of the original information requirements will be satisfied by the existing sub-systems. The existing leave sub-system will represent the major contribution of the project towards extension of ADP into the automatic determination of entitlements and the benefits which ADP offers in more accurate and efficient record keeping will be possible.

In terms of the cost/benefit performance of the project, it has been envisaged from the outset that the direct savings in staff numbers required in personnel processing and statistical recording functions across the Service would exceed the costs of developing, implementing and maintaining the

MANDATA system. The benefits of an indirect kind flowing from improved management information and the increased level of accuracy in recording and applying personnel entitlements to staff, which are impossible to quantify, have always been regarded as substantial.

Against the background of the performance of the project, to date, the difficulties it has encountered and the uncompleted tasks yet to be tackled, it is clear that the project would not have been able to 'break even' over the assumed life of the project. The original time scales have proved to be impossible to achieve and the notional costs associated with delay in the receipt of benefits have adversely affected the project's cost/benefit result. Recent work by the Board also raises considerable doubts about the realism of some previous estimates of direct staff savings.

The decision to scale down the project was taken with these factors in mind. The abandonment for the present of any intention to move into the pay area eliminates another potential source of staff savings. Experience with predictions made in the past makes the Board hesitant about making firm predictions for the future on the likely level of savings which will ultimately be achieved. However it is clear that they will fall well short of the numbers earlier predicted. Further studies are underway aimed at attempting to identify the savings which may be achievable under the scaled down objectives now being pursued.

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The Board's decision to scale back the immediate objectives of the project will enable future expenditure on the project to be reduced. In particular:

- . Expenditure of \$1m which has been set aside in previous cost studies for purchase of computing equipment to enable full coverage of the service on the total MANDATA system as it was originally conceived, will not now be necessary in the immediate future.
- . The staff ceiling of the MANDATA Program Office will be re-examined with the aim of accelerating the progressive reduction of the staff of the project more quickly than would otherwise have been possible.

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Against the background of the Board's decisions on the revised strategy to be followed in the immediate future the recommendations of the Committee have been considered. The comments which follow outline the Board's overall view on the recommendations and the action which the Board has already taken or proposes to take.

The Board is in general agreement with the main themes of the Report which are aimed at:

- . improving the planning and control of the project

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(Recommendation Nos 1, 2, 3, 4, 7, 15, 16, 39, 40, 41, 42);

- . identifying more clearly the expected benefits and obtaining a commitment from departments to their achievement (Recommendation Nos 8, 9, 10, 11, 12, 13, 36);
- . increasing the amount of attention devoted to the sensitive issue of "access" to centralised departmental records (Recommendation Nos 5, 6);
- . pressing on to bring the project to a conclusion as quickly as possible (Recommendation Nos 35, 37).

The Board has accepted the majority of the Committee's Recommendations.

RECOMMENDATION 1

The Commissioners of the Public Service Board should issue a comprehensive statement of the objectives for MANDATA to provide a fundamental basis for planning and control.

Following its policy decision to scale back the objectives of the project, the MANDATA Program Office was requested by the Board to prepare a comprehensive statement of the revised objectives of the project, as a basis for future planning and control. When completed the statement of revised objectives will be submitted to the Board for approval.

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RECOMMENDATION 2

A comprehensive requirements specification should be prepared promptly by the MANDATA Program Office in consultation with major users. This document should set out the objectives for the system as determined by the Commissioners, and the characteristics necessary to meet those objectives, including:

- . definitions of inputs, processing and output
- . security and privacy provisions
- . reliability goals
- . maintainability and re-startability features
- . user-interface performance goals.

During the past year a considerable amount of MPO and departmental effort has been devoted to sorting out user requirements and development priorities in general.

One feature of the approach adopted in this regard has been the high degree of involvement by users in the detailed specification of their requirements. The MANDATA Co-ordinating Committee (a body composed of representatives of the Board and departments) has been used as the primary vehicle for ensuring that full consultation occurs with the major users. A MCC Task Force (comprising departmental and MPO representatives) has recently presented a submission to the Board on short term development proposals aimed at identifying the elements needed in a 'minimum viable Personnel and Establishments sub-system', consistent with the recently reduced immediate objectives of the project.

The characteristics listed above by the Committee's recommendation will be covered by the requirements specification which emerges from the Board's examination of this study.

RECOMMENDATION 3

The requirements specification should be agreed to by the Commissioners of the Board and used by them in reviewing progress against goals.

As indicated in relation to the previous recommendation, the revised requirements specification will be approved at full Board level and will be used in reviewing future progress against goals.

RECOMMENDATION 4

The Commissioners should continue to review carefully project progress and cost, and product quality, and to ensure optimum resource allocation to the project. If costs significantly exceed estimates, or benefits fall below estimates, or product quality does not meet the goals set for it, corrective action should be taken.

The Board has been closely overseeing the project. The Board regularly meets with the senior management of the project on a three weekly basis for discussion on progress. Ad hoc meetings are also arranged on specific issues as the need arises. Also the MPO presents a detailed written report to the Board every six weeks covering the progress being made with the implementation of the various sub-systems, the present stage of development of the sub-systems and the quality of service being provided to departments.

As to the taking of corrective action, attention is drawn to the comments in the introduction.

RECOMMENDATION 5

The Commissioners should ensure that a comprehensive policy is published which states what kinds of information in MANDATA are restricted as regards access, and who is entitled to have access to each kind of restricted information.

The Board is very conscious of the need to have a properly developed policy in access to personnel records of the kind held on the MANDATA system. This has been an issue which has been discussed at some length and settled with the staff organisations.

The Board's basic policy in relation to access to personnel or departmental records has not altered because of MANDATA. All such records continue to be restricted as regards access and the 'need to know' principle is still applicable. The rules for access by staff and outsiders eg academics, to departmental records also have not changed as a result of MANDATA.

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Officers (as well as their staff organisations) have been kept fully informed of their entitlements in obtaining access to MANDATA records and other personnel records. As recently as December 1979, the Board issued to departments and to staff detailed guidelines covering the contents of personnel records, access to records, exceptions to access and rights of review. Those guidelines included specific references to arrangements under MANDATA.

A set of principles or guidelines concerning access by authorised officers of the Public Service Board to departmental MANDATA Records has also been issued to departments following extensive consultation with departments. Finally, staff are generally aware of legislative provisions governing access to certain official records.

Having regard to the scope and ready availability of documentation on the matter and the absence of change to Board's general policy on access to personnel records, it is not thought necessary to publish a separate comprehensive document on the subject relating just to the MANDATA Project.

RECOMMENDATION 6

The Commissioners should satisfy themselves that effective controls exist in design and operation of MANDATA to ensure that only authorised officers may have access to any information,

Measures to ensure the protection of information on the MANDATA system from unauthorised access include:

- (a) A comprehensive system of originator identifiers,

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and then only to those parts of the information which they are specifically entitled to view or change.

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operator passwords, cell codes and batch numbers have been devised to ensure that only authorised users can have access to any MANDATA information.

- (b) Population security mechanisms limit access to those data records for which the authorised officer concerned has a responsibility or an entitlement to access.
- (c) Procedures have been established to ensure the physical security of equipment installed in user offices including measures to prevent access to equipment by unauthorised persons.
- (d) A set of principles or guidelines concerning access by authorised officers of the Public Service Board to departmental MANDATA records has also been prepared following extensive consultation with departments.
- (e) All data items included in the MANDATA system are by agreement, subject to consultation with Peak Councils through the medium of the MANDATA Consultative Group.

During 1979 a sub-committee of the MANDATA Consultative Group comprising two professionally qualified representatives of the staff side were given access to all of the documentation and procedures which are aimed at ensuring a high degree of security against unauthorised access or against physical damage. The report, which has just been received, is quite

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favourable. Some recommendations seeking improvement have been made but the staff representatives reported that they were 'pleased with the greater part of what they saw and heard'. Action is being taken on some of the suggested improvements which were recommended.

The Board is satisfied that the present controls are generally adequate but recognises that in the light of operational experience there may be room for increasing further the level of protection currently provided. The Board believes that the level of protection provided will be superior to that which exists in departments prior to the introduction of MANDATA.

RECOMMENDATION 7

The Board as the appropriate authority should set quantified objectives for quality-of-service levels to be provided by the MANDATA system and should communicate these to users. Actual service levels achieved in operation should be measured and the results reported to users.

During 1979, as a consequence of the national communications network becoming fully operational and the conversion of all computer processing to the Board's computer in Canberra, the Board devoted increasing attention to the quality-of-service being provided to MANDATA users. The Board recognises the need to set targets and monitor performance. Equally, it recognises the difficulty in maintaining them because of external dependencies beyond its direct control, eg air conditioning for the central computer and the regional mini-computers. (The appropriate authorities concerned have been kept under pressure to maintain the required levels of performance.) Also a judgement on the basis of cost has to be made about the amount of spare

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capacity allowed to be carried, which is one factor bearing on the level of service which can be maintained.

The MPO has established a comprehensive monitoring and reporting system to ensure that contractor performance in relation to the hardware, software and communication links is of an acceptable level. Performance targets are set in maintenance contracts.

Within MPO, production schedules cover all daily activities which have a direct bearing upon the quality-of-service provided to MANDATA users.

In many ways, the users are better placed than MPO to measure the quality-of-service because the point of delivery is in the departmental personnel areas. At the regular meeting with departments under the aegis of the MANDATA Co-ordinating Committee, any deterioration in the service level is brought to MPO's attention. Notwithstanding, the Board keeps itself informed on this matter by means of the regular progress reports by MPO. MPO's written progress report now include statistics covering:

- . the accessibility of records by means of visual display units (VDU's);
- . the reliability of overnight processing of records by the central computer;
- . the timely delivery of printed management reports both through the network and by conventional means.

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RECOMMENDATIONS 8 and 9

The Commissioners of the Board and Permanent Heads of user departments should ensure that detailed plans are formulated promptly to bring about the changes in organization structure, the redefinition of duties, the redeployment of people and the changes in numbers of staff that will be necessary to ensure that planned cost savings are realised within the planned time-frame.

The Commissioners and Permanent Heads should publicly and immediately make quite explicit what impact they expect or intend MANDATA to have on staffing levels, organization and duties.

The introduction of MANDATA will necessitate changes in the existing organisation and methods of working in departmental personnel areas. The estimates which have been made of staff savings in this area have been based on work load statistics and measurements and certain assumptions relating to the improved efficiency in the handling of personnel transactions following introduction of MANDATA.

In order to gauge more accurately the effect of MANDATA on staff requirements, the MPO carried out an Impact Evaluation Study during 1978. Following consideration of the study, the Board decided to initiate field trials to assist in determining the most appropriate organisational and staffing arrangements for the future. Since the latter part of 1979, the Departments of Defence, Transport and Primary Industry have been co-operating with these field trials. The completion in mid 1980 of these trials and related studies should enable the impact of MANDATA on organisations, staffing levels and duties to be predicted with greater accuracy. The results of those studies will be discussed with departments and staff organisations.

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RECOMMENDATION 10

The Public Service Board should without delay prepare up-to-date detailed estimates of the expected savings and other benefits from MANDATA.

Revised estimates of the expected savings and other benefits from MANDATA will be prepared following evaluation of the results of field trials and related studies. (see comment on Recommendation (9).)

RECOMMENDATION 11

Quantified objectives should be set within departments for the achievement within specified times of management benefits resulting from the use of MANDATA. Department Heads should formally acknowledge them to be worthwhile and should undertake to achieve them. Performance in the achievement of the objectives should be measured. If the aggregate dollar value of the objectives differs from the estimates of benefits contained in Chapter 5 of this report, Parliament should be informed of the extent of the difference and the reason for it.

The Board believes that it is important to take all steps necessary to ensure that the potential benefits for MANDATA are achieved and agrees that a high level of support and commitment to achieving the benefits is required at a senior management level in departments. Efforts will continue to increase the level of involvement and support of senior managers in departments (including Permanent Heads).

The Board is most anxious to ensure that as far as practicable, a continuous process of accounting for benefits and savings achieved is followed.

It is agreed that it is most important to regularly check achievements against objectives, not least because of the lessons which can be learned.

Three separate initiatives are expected to help considerably in this direction. Established trials for personnel areas currently being conducted in the central offices of Defence,

Canberra and the regional offices of Transport, Sydney and Primary Industry, Sydney should provide detailed assessments of benefits for those areas and a basis for achieving similar benefits elsewhere. The Board's Office recently surveyed all departments to identify the staff resources currently in use in personnel areas. Finally a report just to hand from a MANDATA Coordinating Committee Task Force (see comment for Recommendation (2)) has estimated on a Service-wide basis the direct benefits associated with each foreseeable development step for the major sub-systems of P & E and Leave.

The Board intends to continue to keep the Parliament informed on progress with implementation of MANDATA, through the Board's Annual Report to Parliament.

RECOMMENDATION 12

To help managers achieve the designated management benefits of MANDATA, training appropriate to present skills levels and future duties in human resource management should be given to all managers in user departments and in the Board with particular reference to the use of the new system.

The Board provides initial training to departmental staff but departments themselves have the major role to play in maintaining and extending their training effort once they have developed the necessary expertise.

The Board currently conducts a number of training activities for departmental managers relevant to the use of the MANDATA system for resource management purposes, including:

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- (a) Courses and training sessions in manpower planning. Examples include 30 day Manpower Planning Practitioners Seminars which emphasise the use of the MANDATA system in manpower planning, and training sessions given to participants in the Executive Development Scheme on the role of MANDATA and manpower planning in human resource management.
- (b) At a more basic level, various detailed instructional courses have been developed by the Board's Office for the instruction of departmental staff in the use of MANDATA. These include:

<u>Course</u>	<u>No of Courses Held</u>	<u>No of Officers attending</u>
Data entry training	39	207
Error correction	6	78
Forms completion	18	255
Implementation training	13	119
Leave system	32	337
Mini computer operator training	11	37
Small machines interrogation language	3	56
Systems training	24	424
Trainee Computer Operator training	1	5
TOTAL	147	1,518

During 1980, it is intended to increase the training efforts undertaken by the Board. Some initiatives planned include the production of an instructional film on MANDATA and its objectives,

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and the preparation of a series of slide/tape training packages. These will be made available to departments to assist their training programs.

RECOMMENDATION 13

The Board together with Permanent Heads of the major user departments should form a Project Board of Management, meeting quarterly, to review the product and satisfy themselves that it will enable them to achieve their goals within the planned timetable. If not, appropriate corrective action should be initiated.

This recommendation was discussed at a meeting of Permanent Heads and the Board, held on 23 Nov 1979. While understanding the reasons for the recommendations, neither the Board nor the Permanent Heads supported the establishment of the proposed Project Board of Management on grounds of relative priorities at the Permanent Head level.

The Board agrees with the general objective implicit in the recommendation, that is, to ensure that Permanent Heads take a personal interest in the project and play an active role in reviewing the products of the system and to ensure that the objectives of the project are met. The Board intends to increase its efforts at keeping Permanent Heads and the senior staff of departments more closely involved in monitoring progress with the development and implementation of the project.

For example, the Chairman of the Board personally wrote to all Permanent Heads seeking their views on the future of the project, as part of the Board's recent re-evaluation of the project's objectives.

RECOMMENDATIONS 15 and 16

The Board should increase its use on this project of formal system development and project management techniques particularly in areas of documentation for management review and control.

The Board should evaluate urgently available proprietary system development methodologies for use on the remainder of MANDATA development and on other projects.

Because comprehensive system development methodologies have been marketed only recently, MPO designed and implemented its own project management system using relevant guidelines issued by the Board's Office, eg 'A Guide to the Documentation of Operational ADP Systems'. The system now in operation comprises procedures to ensure that management retain control over changes to the production sub-systems and that resource requirements are properly identified before work commences. It also co-ordinates work which is performed in more than one section of MPO. In addition, a set of standards laying down guidelines to be followed in system development and implementation have been promulgated. However, these standards do not cover all aspects of MANDATA development implementation and operation.

The Board accepts the need for a comprehensive set of control procedures and standards for MANDATA similar to those which are now commercially available.

In December 1979 senior officers of MPO attended seminars conducted by 3 potential suppliers which market methodologies known as PRIDE, SPECTRUM and METHOD 1 respectively.

In January 1980 the Department of Defence received tenders from those potential suppliers to supply a project management system. MPO officers have worked in conjunction with the Department of Defence in the evaluation of

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those tenders. The Board has now taken a decision in principle to purchase a commercial system during the current financial year. The acquisition processes are in train at present.

A final decision has been held over until current discussions with the likely supplier indicate whether it is advisable, having regard to the decision to limit future development, to proceed with the installation of the complete commercial system or to focus on those parts which remain highly attractive in the changed circumstances.

RECOMMENDATION 35

Diversion of resources from the project should only be done with full recognition of the impact on project progress and following careful analysis of the costs and benefits of resource diversion, taking into account the cost of delaying implementation of the remainder of MANDATA.

The Board is taking particular care to ensure that there is no diversion of resources likely to be detrimental to MANDATA's progress. At the same time, the Board also needs to see that unnecessary idle computer capacity does not exist within the Public Service.

The main area watched by the Board in regard to MANDATA is the use by departments of the Board's central computer for non-MANDATA purposes. However, the Board is most unlikely to allow the usage of the Board's machine for non-MANDATA work to grow and it aims to gradually clear the machine of this work.

The Department of the Capital Territory and the Department of Immigration and Ethnic Affairs

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no longer use the Board's computer for non-MANDATA work which leaves three external users. Two of these, the Departments of Business and Consumer Affairs and Productivity use an insignificant amount of computer time but they will be asked by the Board to make other arrangements.

The other user is the Department of Employment and Youth Affairs in respect to its SAMIN system. The arrangement whereby the department uses the Board's central computer is governed by a written agreement between the Chairman of the Board and the Permanent Head. Regular meetings between senior MPO and departmental officers are held to review and monitor the department's activities and their impact on MANDATA. The Board is informed of developments on a regular basis.

RECOMMENDATION 36

Department Heads should give full personal commitment to implementation of MANDATA, ensuring that required resources are allocated, monitoring implementation progress, and assisting staff to remove impediments to progress.

The Board has drawn this recommendation of the Committee to the attention of all Permanent Heads whose departments are actively implementing MANDATA. As new departments commence preparations to come onto the system the Board will be drawing the attention of those Permanent Heads to the Committee's recommendation. The Board agrees with the Committee that the personal commitment of Permanent Heads is necessary to ensure successful implementation of MANDATA in departments.

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RECOMMENDATION 37

There should be no reduction in present staff ceilings applied to MANDATA development or implementation. The desirability of increasing ceilings should be examined immediately, taking into account the benefits that will accrue from early completion of the project.

Staff ceilings for departments and authorities are determined annually by the Government as part of the budgetary process. The 30 June ceiling for MANDATA was lifted from 145 in 1978 to 174 for 1979 and it was retained at this level for 1980. This is regarded as the peak level of staffing likely to be necessary to permit the revised objectives of the project to be achieved in the shortest time, consistent with the Government's current policy of staffing restraint and overall staffing priorities. In order to achieve optimum benefit from the staffing levels permitted, the MPO has re-arranged certain functions in order to increase the resources available for computer programming. A reduction in the MANDATA staff ceiling is expected in 1980/81.

RECOMMENDATIONS 39, 40, 41 and
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The MANDATA Program Office should prepare definitions for all major subsystems comprising Phases 2 and 3 of MANDATA in sufficient detail to allow accurate cost estimating.

The Program Office should use these product definitions to prepare cost estimates for the remainder of the project.

Such cost estimates should be employed for review, in conjunction with users, of

These recommendations will be adopted as part of the Board's overall initiative to improve project planning and control.

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the cost-effectiveness of optional features and requirements, and for project cost control.

Such cost estimates should be reviewed and revised as proposed system requirements change.