Chief Review Services

INTERNAL AUDIT OF MISCELLANEOUS REQUIREMENTS

November 2001

7050-9-14 (CRS)

Synopsis

As directed by the Deputy Minister, Chief Review Services has completed an internal audit of minor capital procurement projects falling within the definition of Miscellaneous Requirement(s) (MR); these may be one-time, or recurring purchases. Historically, the MR program has been funded annually at about 8% of the capital program - $181M in 1999/2000. MR projects are considered to be low-risk minor capital expenditures with a value less than $3M – recently increased to $5M to accommodate inflation. There are currently approximately 400 active MR projects.

The principal objective of this audit was to determine if MR projects are compliant with expenditure controls, particularly project approval requirements described in the Defence Management System (DMS) Manual.

The audit work was substantially performed in 2000 and the projects examined are those which generated expenditures in fiscal year 1998/99. The audit found some clear instances of non-compliance with approval requirements. Of a sample of 81 projects, four fell into this category; each less than $1.5M in value. At the same time, it was concluded that the delegation of authorities and the attendant guidance lacked clarity. We also found that, from a risk management perspective, existing approval requirements were unduly restrictive, had not kept pace with inflation, and were not appropriately targeted to take best advantage of review and approval at the Ministerial level. Raising the approval requirement from $1M to $2M would have reduced the volume of submissions to the Minister, while still providing his approval of 80% of the total dollar value of these projects.

Another consequence of restrictive approval requirements is that managers have sometimes developed inventive, albeit not always unreasonable, ways of interpreting guidance and bundling procurements to avoid lengthy staffing and approvals. This also had the effect of sometimes causing lower priority procurements to proceed ahead of those subject to more stringent approval requirements. Essentially, too much control, and the lack of a risk-managed approach, had eroded actual control. In this regard, we have also concluded that project management requires strengthening for these procurements, particularly given that new technologies being acquired have frequently added complexity to the buys.

Synopsis

During the reporting phase of this audit, management commenced a program of improvements and has already planned, or taken, action relative to our principal recommendations. New guidance (in the form of a Program Guidance Memorandum) was approved in October 01. Not only has the MR project value been increased, but the Minister has delegated the entire expenditure authority to the Deputy Minister (DM) and the Assistant Deputy Minister (Materiel). This will effectively streamline the approval process and reduce the implementation slippage which has affected the MR program.

In the future, and with the benefit of demonstrated strengthening of MR project management and reporting, there may be merit in considering further delegation of expenditure approval authority to Level 1's, particularly to the Environmental Chiefs of Staff.

Results in Brief

Introduction

Further to direction from the Deputy Minister, CRS has completed an internal audit of Miscellaneous Requirement (MR) projects; both one-time and recurring. This followed a l998 internal audit by Maritime staff which identified six MR projects involving expenditures in excess of $1M without the benefit of required approval by the Minister. Accordingly, the principal objective of this audit was to determine whether MR projects are compliant with expenditure controls, particularly project approval requirements described in the Defence Management System (DMS) Manual. The audit work was substantially performed in 2000 and the projects examined are those which generated expenditures in fiscal year 1998/99.

Overall Conclusion

The audit found additional instances of non-compliance with approval requirements, all of which occurred prior to the audit by Maritime staff. However, from a risk management perspective, we have concluded that existing MR expenditure approval requirements were unduly restrictive and not appropriately targeted to take advantage of review and approval at the Ministerial level.

There has not been a sound alignment between risk and control. Approval limits have not kept pace with devolution, inflation, increased delegation of approval for capital expenditures and current developments in business planning. A further complication is that approval requirements, and attendant guidance, were insufficiently clear to ensure consistency of interpretation and application. The ultimate impact has been that managers have sometimes employed liberal interpretations of guidance and have not been consistently diligent in seeking and respecting project approvals. Alternatively, a key risk is that of managers not delivering high priority/value MR program requirements due to more restrictive interpretations of the approval process. Lower priority items may be procured to avoid more restrictive approval requirements.

Results in Brief

Background

Historically, the MR program has been funded annually at about 8% of the capital program - $181M in 1999/2000. In 1995, MR funding was devolved to Level 1 managers for new minor equipment requirements less than $3M in value as well as for recurring annual replacement of items having a unit cost less than $1M (e.g. vehicles, IT equipment, furniture). The MR project ceiling of $1M, established in l986, was raised to $3M in 1991; the requirement for Ministerial expenditure approval authority remained at $1M. In this respect, we observed that this limit, expressed in today's dollars, would amount to $1.52M. Moreover, since 1997, the Department's capital expenditure approval authority increased three fold – from $10M to $30M - but there had been no increase in expenditure approval authorities delegated to Level 1s.

Most recently, a Programming Guidance Memorandum (PGM 01/01) has increased the value of a MR from $3M to $5M and $5M in expenditure authority has been delegated to the DM, ADM(Mat), and ADM(IE); for other Level 1s, MR expenditure authority has remained at $1M.

Control Effectiveness

MR funding has been devolved to Level 1 managers/commanders since l995. For fiscal year 1999/00, expenditures on projects with budgets in excess of $1M amounted to approximately 0.2% of devolved operating budgets for the Environments. All such projects are listed individually in Level 1 Business Plans. However, these projects have also been subject to individual approvals involving a process which has typically taken about six months in staffing once it has been recommended by the Level 1. At the time of the audit, there were 46 projects with a value greater than $1M in the approved MR program, representing a total value of $142M – or 0.5% of the $27B approved major capital equipment program. We questioned whether an appropriate balance had been struck between risk and control given the relative portion of the capital program. The lengthy MR approval process has impeded Level 1 managers from acquiring high priority operational equipment within the fiscal year. Although it is recognized that this practice is unavoidable at times, we found instances where lower priority items with shorter lead times, were procured in order to expend MR funds by year end.

Results in Brief

Although PGM 01/01 increases the value of a MR project by 66%, there has been no similar increase to the expenditure authority for the primary Level 1s that initiate MR projects greater than $1M in value – the ECSs. Historically the ECSs alone have spent 63% of the Departments MR funds. A requirement already exists for submission, to the Procurement Strategy Committee, of procurements in excess of $2M. Once the current changes have been fully implemented and stabilized, there may be merit in considering further delegation to Level 1s. There remains room for increased delegation such that the DM will not deal with the same volume of transactions, but would still have visibility of the majority of projects over $1M and 80% of the total dollar value. This would also be contingent on demonstrated strengthening of applicable project management processes.

Clarity of Policy and Procedure for Project Approvals

We concluded that MR policy reflected in the DMS Manual lacked clarity, particularly with respect to recurring MR (MRR) projects. Our audit identified 18 recurring MR projects having a value greater than $1M for which Ministerial approval was not obtained. In our view, however, these are substantially illustrative of ambiguity in the DMS. Reasonable interpretation of the Manual could lead to circumstances whereby projects exceeding $3M, but with equipment unit costs being less than $1M, would proceed without required approval. Moreover, the necessary project management resources and practices have not engaged to address the risks which may arise for these non-strategic capital projects.

Revisions to the DMS Manual are planned. Attendant revisions to management controls and direction within Level 1 organizations will also be required; the DMS can take advantage of certain of the best practices already in place. As well, 1995 VCDS direction, requiring a performance measurement system for the MR program, has not yet been implemented.

Results in Brief

Direction with respect to non-recurring MR projects has been relatively clear and the corresponding control framework is working reasonably well. Of a sample of 81 projects, we found only four which did not have appropriate Ministerial approval – each less than $1.5M in value. None of the non-compliant projects occurred subsequent to the completion of the audit by Maritime staff. We are, however, concerned that project management for MR projects is lacking with respect to the monitoring of project costs and schedules. Although MR projects are not to include developmental/definition costs, we found 15 projects that included prototypes and experienced price creep, delays or rescoping – two that require resubmission for significant funding level increases. Aggressive over-programming is also required to address a 22% annual cost carry-over attributable to a lengthy approval process and to contract slippage for developmental projects. Greater attention is required to accurate costing and to establishing realistic implementation milestones, particularly for higher-risk developmental projects.

Main Recommendations

- VCDS staff, in consultation with ECS Comptrollers and Materiel Group staff, should undertake necessary revisions to clarify pertinent direction in the DMS Manual. This will particularly require distinct definitions for recurring and non-recurring MRs. It will also be necessary to address circumstances whereby multiple projects are actioned through a single procurement instrument as well as those involving developmental costs. Future consideration should also be given to seeking further delegation of expenditure authority for all Level 1s.

- The DMS Manual should also specifically address circumstances involving developmental aspects, given the increased risk of schedule delay and price creep.

- ECS staffs should modify their respective guidance and procedures once changes have been made to the DMS Manual. In the interim, VCDS staff should be consulted in any circumstance where there is ambiguity as to the requirement to obtain Deputy Minister, ADM(Mat) or ADM(IE) approval for individual projects.

Results in Brief

- ECS staffs, in consultation with COS ADM(Mat) and Director General Strategic Planning staffs, should ensure appropriate project management and performance measurement for their MR Programs.

- An omnibus submission should be co-ordinated by VCDS/DFPPC to advise the Minister of the four projects identified by the audit as having warranted, but not having received, approval. At the same time, the Minister could be apprised of the improved guidance being implemented.

> This audit has been conducted to provide assurance relative to criteria specified on page 6 of the report, a caveat being that full audit rigour has not been applied to the criteria addressing the adequacy of project management and value for money. This is consistent with the fact that the primary audit objective was to assess compliance.

Internal Audit of Miscellaneous Requirements

CRS Final Report

November 2001

Contact: Chris Currie Senior Analyst 996-0199

Contents

Executive Summary

- **Approval Limits**: The approval process for the Miscellaneous Requirement (MR) program is somewhat risk averse and not clearly in keeping with the devolution of operating budgets.   In fact, there would be merit in revisiting the requirement for MND expenditure approval of all procurements in excess of $1M. Ultimately, this limitation has become dated. It has not kept pace with changes in other project expenditure authorities, does not reflect the relative risk associated with the Miscellaneous Requirement (MR) program and, accordingly, does not take best advantage of the benefits of review and approval by the MND.

- **Clarity of Guidance**: A key area of risk pertains to the lack of clarity and consistency of Departmental policy with respect to Miscellaneous Recurring Requirement (MRR) expenditure approval authorities. A result is that several MRR projects have exceeded the maximum allowable value of $3M without MND approval and have proceeded without necessary project management attention.   However, plans are now underway to revise the pertinent references in the Defence Management System (DMS) Manual.

- **Consistency of Guidance**:   A comparison of MR policy directives issued by Level 1s identified several inconsistencies as well as guidance that was not aligned with the DMS Manual. Notwithstanding this, we did find that Level 1 MR policies and control frameworks have improved for the management of higher value MR projects.

- **Compliance**: We did observe other instances of non-compliance. These involved MR projects having a value greater than $1M or which did not comply with the approved Synopsis Sheet or statement of requirement in terms of project cost, schedule and/or scope. It is worth noting, however, that these transactions pre-date the completion of the internal audit within the Maritime environment; that is, the audit which raised the original concerns about MR approvals.

Background

Previous Audits

- **CRS last conducted an audit of Miscellaneous Requirements (MRs) in Nov 96**
  - A pattern of increased concentration of MR spending at year end was observed.
  - A significant proportion of MR expenditures relate to information technology (IT) equipment.
  - Since the devolution of MR funds to Level 1 managers in 1995, the requisite Level 1 management controls have not been in place.
- **CRS was tasked by the Deputy Minister (DM) to conduct a Department wide audit of the MR program**
  - In 1998, the CMS MR coordinator requested that the CMS comptroller staff audit six MR projects managed by MARCOM HQ. The audit found that all six projects were greater than $1M in value and had not been approved by the MND.
  - In Mar 99, the six Navy MR projects were submitted to the MND for approval in arrears and CRS was requested to review the management of MR to ensure that sufficient oversight of the MR program is exercised.

Background

History of MR Expenditure Approval Authority

- **1986 -** The MR project value limit increased from $500K to $1M.

- **1991 -** The Program Management Board (PMB) increased the value of MR projects from $1M to $3M.

- **1994 -** The CFP 125 Defence Project Management System (DPMS) manual defined MRs as minor capital projects with a value less than $3M. All MR projects greater than $1M required submission of a Capital Project Summary (CPS) sheet for expenditure approval by the MND for expenditure approval. However, no project ceiling was specified for minor recurring requirement projects (MRRs). MRRs were defined as projects consisting of a large number of equipment items required to support on-going activities and which must be re-provisioned annually on much the same basis as operations and maintenance materiel - “filling the bins”, in effect.

- **1995 -** A VCDS directive devolved $150M of annual MR funding to Level 1 managers. New requirements, or “sponsored” MR projects, greater than $1M still required a CPS approved by the MND. However, MRRs that “still exceed” $1M did not need a CPS or MND sign-off. The MR Screening Committee was disbanded and performance indicators were to be integrated into the Level 1 business plans.

Background

Current MR Policy

- **Defence Management System (DMS) Manual - Project definitions effective 31 Dec 1998**

  - **Capital Projects**: All equipment, materiel and service projects greater than $3M in value.

  - **Capital Construction**: This category includes new construction, capital leases, and recapitalization projects.

  - **Recurring Capital**: Items of equipment that support on - going activities and require annual acquisition like operations and maintenance (O&M) are included in this category.

  - **Miscellaneous Requirements**: Acquisition of new equipment, materiel, or services where the one-time project value is less than $3M or recurring acquisition of replacement equipment and materiel where the individual item value does not exceed $1M. Further constraints that have been in place since 1994 are:

    - no significant increase in personnel,O&M costs
    - no associated project management costs
    - no associated project definition/developmental costs
    - all MR projects greater than $1M must be included in Level 1 business plans
    - any MR project greater than $1M requires expenditure authority from the MND

Background

Audit Approach

- **Objective**

  - The objective of this audit was to assess the management of MR funds. The particular focus of the audit was to determine the adherence to, as well as the clarity and currency of, existing approval requirements for MR projects within the context of devolved resource management.

- **Context**

  - Historically MR projects have totalled 8 per cent of the Department's capital acquistion program. By design, the projects are to be low risk in nature and not requiring the same scrutiny and lengthy approval process as for higher value/high risk capital acquistion projects. Since 1995, MR projects have been funded from devolved Level 1 operating budgets.

- **Scope**

  - Analysis of MR expenditure trends (See Figure 1) indicated that CMS, CLS and CAS projects constitute the lion's share of the MR program. Accordingly, the scope of the audit sample was limited to the three Environment Chiefs of Staff (ECS), although other Level 1 MR policies were examined. The selection of MR projects in the sample was based on expenditures made in Fiscal Year 1998/99. Aproximately 250 new MR projects are started each fiscal year - up to 20 projects would exceed $1M in value.

Background

Audit Approach

- **Criteria**

  - The MR projects are well substantiated.
  - The value of the MR projects are within the $3M financial limitation and have the required expenditure approval.
  - MR expenditure control framework is consistent with material and technical risk in the capital acquistion program.
  - Level 1 MR devolution instructions are consistent with Department Policy in the Defence Management System (DMS) manual.
  - A MR project performance measurement system is in place.
  - Project management practices include appropriate monitoring of MR project cost and schedule.

- **Levels of Assurance**

  - High level assurance is provided for all of the above criteria with the exception of project management and value for money. Full audit rigour was not applied in this regard given the primary audit objective was to assess compliance.

Background

Audit Approach

- **Methodology**

  - Process mapping of the ECS MR approval process.
  - Comparison of Level 1 guidance for MR projects with Departmental policy on MR projects.
  - Interviews with ECS MR coordinators, ECS project directors, EPM progam managers and procurement staff, DFPPC, and D Budget staff.
  - Directed sample of all MR projects greater than $1M (See Table 1 Below). (A review of Level 1 business plans and past expenditures determined that most MR projects that exceeded $1M were managed by the three Enviromental Chief of Staffs (ECSs).)
  - Examination of a sample of lower value CMS, CAS and CLS MR projects less than $1M in value.
  - Analysis of MR expenditures from 1996 to 1999, as depicted in Figure 1.
  - Analysis of funds devolved from the ECSs to formations/areas/wings as depicted in Figure 2.

	Total	**Audit Sample**
No of MR Projects	**417**	**81 (1)**
Project Dollar Value	**$208M**	**$134M**

(1) 46 of sampled MR projects were greater than $1M in value

Table 1: MR Projects With Expenditures in 1998/99

Background

Audit Approach

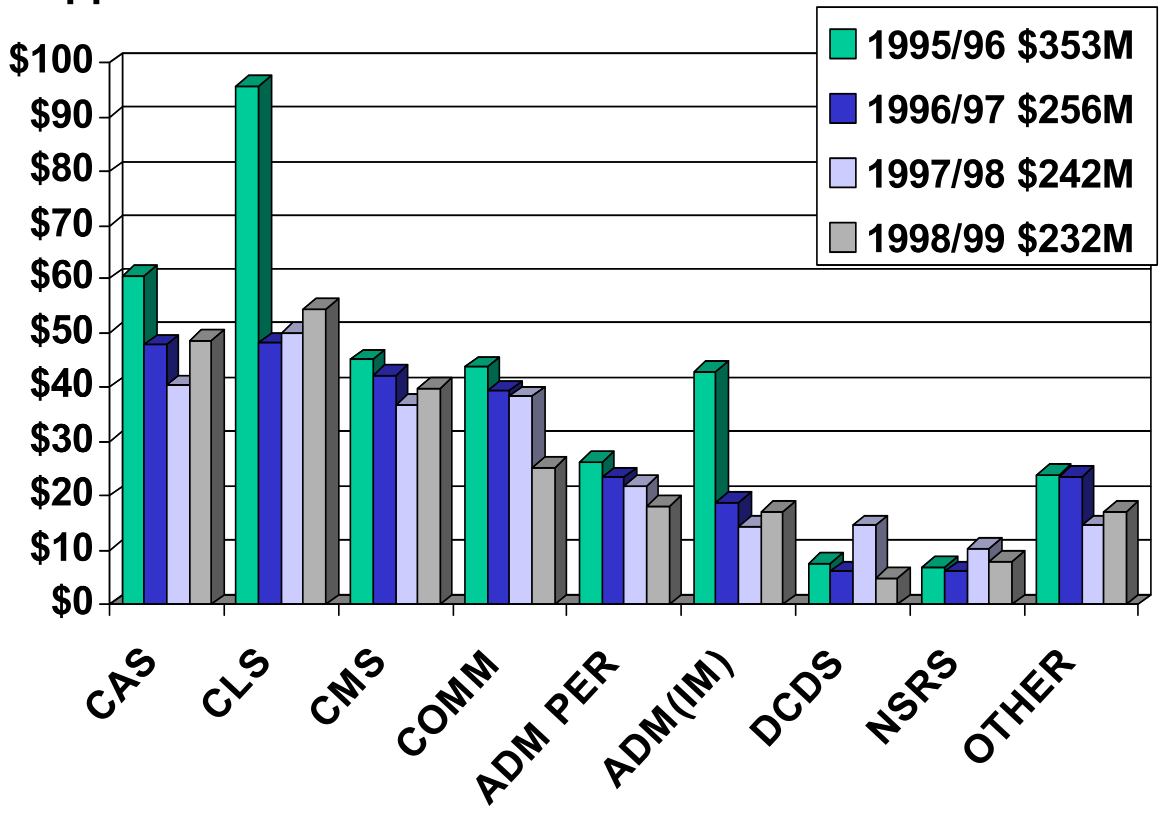

Figure 1: MR Expenditure History ($M)

Although the initial annual allocation of MR funds has increased from $150M in 1995/96 to $178M in 1998/99, there has been a reduction in the actual expenditures due to the decline in NDHQ year-end opportunity funds and/or conversion of Level 2 O&M at year end.

Background

Audit Approach

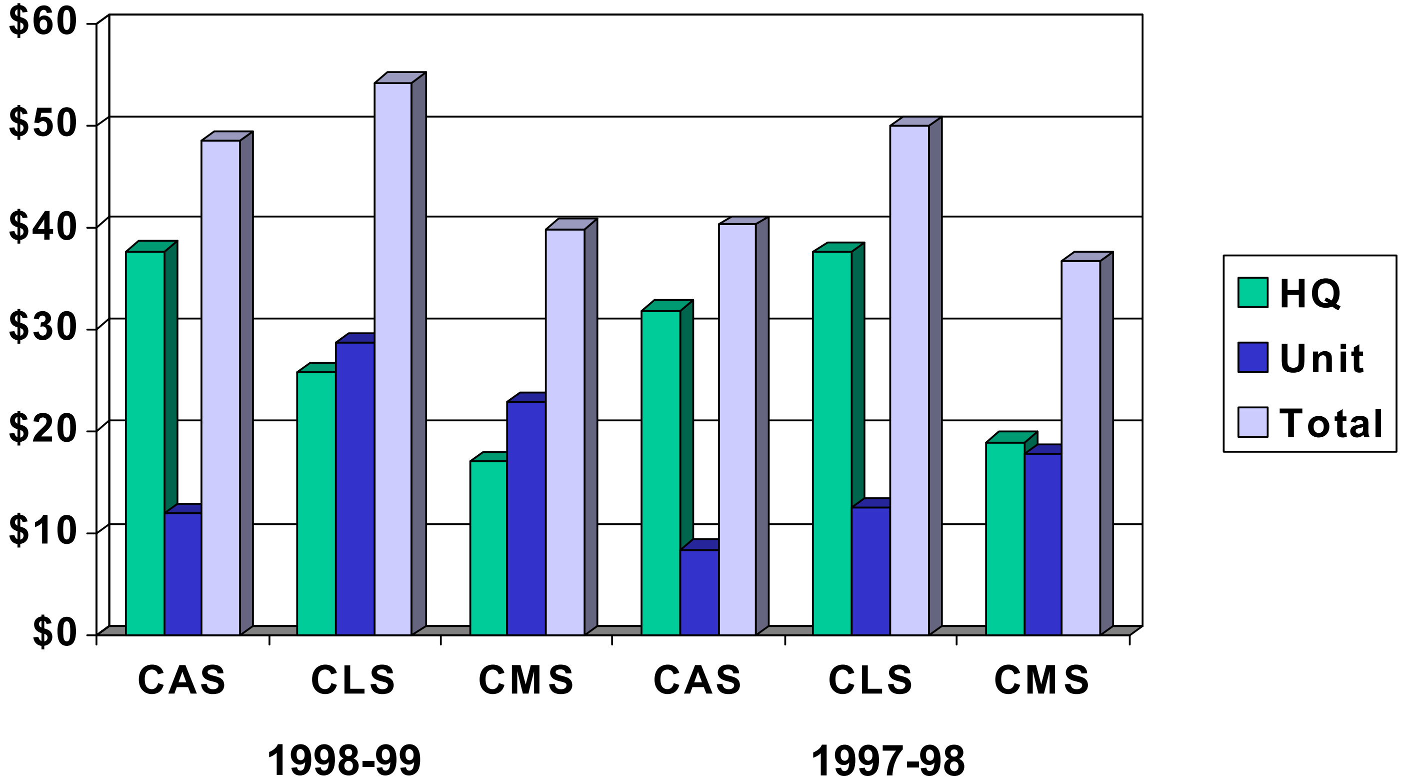

Figure 2: Expenditures by Cost Center ($M)

Level 1 business plans indicated that only CMS devolved the original allocation of MR Funds to Level 2 managers - $8M in 1998/99. We observed that 70% of the unit expenditures were on vehicles and IT equipment.

Audit Observations

Expenditure Approval Limit

- *The advantage provided by streamlined capital procurement for MRs may be enhanced by increasing the $1M MND expenditure approval limit to keep pace with changes in other project expenditure authorities, and to reflect the relative risk associated with the MR program.*

- The DMS hierarchy of approval expenditure authorities, as reflected in Table 2, indicates the following:

  - (1) Although MR project expenditure authorities for Level 1s have been limited to $1M, since 1986, the escalation rate in dollar value would equate to a current value of $1.5M. Inflation, and the corresponding increase in MR project costs, has increased the number of MR projects requiring Ministerial approval.

  - (2) MND approval is required for all construction projects and MR projects greater than $1M. There is no distinction between new construction and recapitalization, or between MRs and MRRs.

  - (3) MR projects that are greater than $2M must be reviewed by the Procurement Strategy Committee (PSC), an inter-departmental body. At their discretion, projects must also be endorsed by an inter-departmental Procurement Review Committee.

  - (4) In addition to a requirement for MND approval of MR projects over $1M, Level 1 business plans must also list MR projects greater than $1M. Once the Level 1 business plan has been submitted and approved prior to the fiscal year, MND authority must still be sought prior to implementation of the MR projects greater than $1M.

Audit Observations

Expenditure Approval Limit

- (5) Expenditure approval authority for the Department has increased from $10M to $30M since 1997. However, there has been no increase in the delegated expenditure approval to Level 1 managers for MR projects.

Approval Levels	Capital Equipment	Capital Construction	Miscellaneous Requirements
Less than $1M (1)		Sponsoring Level 1 Manager	Sponsoring Level 1 Manager
$1M-$3M $1M-$5M		MND(2)(4)	MND (2)(3)(4)
$3M-$30M $5M-$60M	MND(5)	MND	
$30M-$100M $60M-$100M	Treasury Board	Treasury Board	
Greater than $100M	Treasury Board	Treasury Board	

Table 2: DMS Project Expenditure Approval Authorities

Audit Observations

Expenditure Approval Limit

- Operating budget resource levels, along with minor construction and MR funds, devolved to the ECSs in the Defence Planning Guidance (DPG) are summarized in the Table 3. In accordance with the DMS, MR projects greater than $1M (which individually represent 0.2% of the ECS operating budget) require expenditure approval from the MND. This expenditure approval limit does not appear to be commensurate with the relative risk, nor aligned with the principle of devolution.

	DPG 99/00 Allocation	Level 1 Business Plan	
ECS	Operating Budget	Minor Const	MR Funds
CAS	$468M	$40M	$40M
CLS	$590M	$20M	$10M
CMS	$404M	$7M	$30M

Table 3: ECS Operating Budgets in DPG 1999/00

Audit Observations

Expenditure Approval Limit

- The value of the MR program relative to the approved capital program is demonstrated in Table 4 below. Although the annual allocation of MR funds is approximately 10% of the capital program, relatively few MR projects exceed $1M in value. The 46 MR projects we identified that were greater than $1M represent, in dollar terms, only 0.2% of the $27.0B approved capital equipment program.

- We also compared the approval time for MR projects to that for major capital projects. As there was no approved long-term capital equipment program, each individual project required submission for approval of definition funds and expenditure approval. This process took up to 24 months unless the project did not require definition funds and could bypass Preliminary Project Approval (PPA). In this case, the approval process took 12 months - similar to the construction program which did have an approved long term capital plan (LTCP). From our sample of MR projects, we were able to determine that MRs greater than $1M took almost six months, on average, to be processed for approval once the ECS had completed the Synopsis Sheet. Therefore, the $3M MR/Capital threshold represents at least an eight month difference in approval time.

	Capital Equipment	**Capital Construction**	**Miscellaneous Requirements**
1999/2000 Allocation	$1,589M	$270M	$181M
No of Projects Approved >$1M	131	94	46
Value of Projects Approved >$1M	$27.0B	$1.11B	$142M
Time for Project Approval	26 Months	12 Months on LTCP	3 Months

Table 4: Capital Program Profile

Audit Observations

Expenditure Approval Limit

- **MR Project Value Profile**

  - To determine the relative visibility of the MR program with respect to expenditure controls, we stratified the ECS MR programs by project value as shown in Table 5 below.

  - We observed that 39% of the MR projects greater than $1M are also less than $2M. If MND expenditure approval authority were raised to $2M, the MND would retain visibility of 80% of the current dollar value, yet only be required to review 61% of the MR projects greater than $1M. A $2M threshold would align with PSC approval and accommodate escalation rates.

	Projects <$1M	**Projects $1-2M**	**Projects $2-3M**	**Projects >$3M**	**Total MR Value**
CMS	54	9	4	1	$39M
CLS	14	6	4	9	$85M
CAS	303	3	9	1	$87M
Dollar Value	$66M	$29M	$42M	$71M	$208M

Table 5: ECS 1998/99 MR Program Profile

NB: Each ECS manages their MR program with a different approach. CMS devolves MRRs to Level 2 managers whereas CAS MR management is more centralized. The CLS MR program includes a low number of high value multi-year MRR projects.

- **Recommendation**

  - DFPCC consider requesting an increase in the MR expenditure approval authority limit.

Audit Observations

Departmental Policy Guidance - DMS

- *The Department's policy with respect to MRR project value and expenditure approval authorities has been inconsistent and lacks clarity. We observed that, due to confusion regarding MRR policy interpretation, five MRRs with project values that ranged from $4.6 M to $10.4M did not have Synopsis Sheets approved by the MND. As well, there were 13 MRRs with project values ranging between $1M and $3M that did not have Synopsis Sheets approved by MND*.

- Some Level 1 interpretations of the DMS policy with respect to MRR projects are:

  – As long as the MRR **unit item cost** is less than $1M, there is no ceiling to an MRR project value.

  – MND expenditure approval is only required if the MRR **unit item cost** is greater than $1M.

- The 1998 DMS MRR policy appears to be more stringent with respect to MND expenditure approval than the three-year interim process established by the VCDS in 1995. However, other publications in the Department such as the Life Cycle Materiel Management handbook and the Materiel Acquisition and Support Desktop consider MRR projects that exceed $3M to be non-strategic capital projects.

Audit Observations

Expenditure Approval Limit

- Some of the MRR projects that exceeded $3M in value were not “recurring capital” as defined in the DMS and, accordingly, these projects were not exempt from the requirement to obtain MND expenditure approval. Although there was a replacement of existing vehicles, training simulators, small boats and communication equipment, it was not on an annual recurring basis. Rather, some projects were replacing equipment that was up to 30 years old with a significant upgrade in technology. These MRR projects required prototypes prior to production and experienced significant schedule delays. We concluded that these MRRs did not represent minor risk or low dollar value projects intended by the MR program.

- The type of commodities to be managed as MRRs were identified to the PMB by the MR Screening Committee in Feb 95 and included: lifesaving equipment, fire fighting equipment, safety equipment, small boats, armament equipment, communication/ electronic equipment, training equipment, furniture, test equipment, machine tools, hand tools, lab equipment, precision instruments, trailers, vehicles, generators, office equipment and warehouse equipment. One ECS has taken the initiative to determine a standard life cycle for each type of commodity to effectively plan for replacement. In the past, the MRR category has applied to items that have a relatively short life cycle and can be incrementally replaced on an annual basis.

- **Recommendation**

  - DFPPC clarify the MRR policy with respect to maximum project value, expenditure authority approval , the type of MRR commodity, and the frequency of replacement.

Audit Observations

ECS Policy Guidance

- *Our comparison of Level 1 MR policy directives identified several inconsistencies as well as guidance that was not aligned with MR Policy reflected in the DMS Manual*.

- The following represent opportunities to clarify/enhance MR guidance:

  - **Commercial off the shelf (COTS) limitation**. In order to reduce MR project risk, one ECS MR instruction directs that all projects will be COTS. Although developmental and definition costs are not permitted by the DMS, other Level 1 managers have not chosen to include a COTS limitation in their MR policy.

  - **Recurring Commodity Life Cycles**. Type of materiel, along with corresponding life cycles, have been identified in one ECS MR instruction to facilitate MRR planning.

  - **Contingency Funds**. Although the MR program is considered to be low risk in nature, one ECS has established a default contingency level of 15% - 25% for IM projects. We observed risks of exceeding expenditure approval in four types of MR projects; sponsored projects that involved two or more Level 1 resources, materiel procured off-shore and subject to changes in exchange rate, inter-departmental projects and developmental projects with prototypes.

  - **MRR Approval**. Two Level 1 MR policies state that MND approval is not required for an MRR project as long as the unit cost of an item is less than $1M. One of these instructions suggests that there is no MRR project ceiling. However, other Level 1 instructions state that all MR projects greater than $1M in value require MND expenditure approval. DFPPC is in the process of clarifying the MRR policy.

Audit Observations

Expenditure Approval Limit

- **MR Financial Management**. There are a number of financial practices emphasized in the various Level 1 instructions to manage MR funds:
  - FMAS internal orders established for each new MR project to capture costs
  - delegated approvals for urgent operational requirements
  - quarterly cash flow reports from the MR project managers to re-allocate MR funds
  - GST not included in MR project estimates in accordance with the DMS

- **Capability Deficiency**. A sample format for the statement of capability deficiency is included in some Level 1 MR plans to assist project directors in substantiating the MR.

- **Performance Measurement**. Level 1 MR instructions have not included performance indicators to measure the effectiveness of the MR program in accordance with the VCDS 1995 directive. An ADM(Mat) initiative is now in place to address performance measurement for the capital program. DBM has developed nine performance indicators that may be applicable/adapted to high-value MR projects.

• **Recommendation**

- Level 1 MR coordinators ensure policies are consistent with DMS MR policy.
- MR coordinators review Level 1 policies to incorporate best management practices to be maintained on a DIN web site.
- Level 1 MR coordinators develop a performance measurement system for high-value MR projects.

Audit Observations

Non-Compliance

- *Instances of MR projects greater than $1M that did not have MND expenditure approval were identified as well as MRs that did not comply with the approved Synopsis Sheet or statement of requirement in terms of project cost, schedule, and scope. However, the non-compliant MR projects were initiated prior to the completion of the Navy internal audit, to which this national audit is a follow-up*.

- **Non-compliant projects**. Relatively few MR projects in our sample were found to be non-compliant with respect to the expenditure authority - none since the completion of the Navy internal audit on MR projects:

  - **MR projects >$3M**. A Navy internal audit had already identified one project in this category involving the replacement of an information system at the Fleet Maintenance Formation Cape Scott with a more capable system. The MR project was resubmitted by the Navy for approval by the MND.

  - **MRs >$1M with no Synopsis Sheet**. Two projects - both less than $1.5M in value were found not to have the appropriate expenditure authority. One project involved design changes which escalated the costs over the $1M threshold. The other project included a group of vehicles that required a retrofit with no Synopsis Sheet although expenditure authority had been obtained for previous retrofits of this vehicle fleet. Combined level 1 MR projects with no Synopsis Sheet and totaling more than $1M were also observed. Details are provided in Annex A.

  - **MR project scope/cost compliance with Synopsis Sheet**. 10 projects were found to be non-compliant with the approved Synopsis Sheet with respect to cost and scope. Details on requirements definition and project scope may be found in Annex B.

Audit Observations

Non-Compliance

- **Unit cost of MRR >$1M**. Two projects, both less than $1.5M, were found in this category. See Annex C for the details.

- **Recommendations**

  - DFPPC clarify policy regarding combined Level 1 MRs and project definition (What constitutes a MR project?).

  - DFPPC develop a mechanism to identify higher risk associated with proposed MR projects that include developmental costs.

  - Level 1 MR coordinators minimize the slippage in the MR program:

    - Initiate requisitions 90 days prior to the fiscal year for long lead time MRs for a limited portion of the MR allocation.

    - Level 1 MR coordinators over program to minimize slippage.

  - Level 1s enhance management controls to ensure oversight of higher value/higher risk MR projects (frequent reporting/review boards).

Annex A Non-Compliant MR Projects

- **MR Projects Exceeding $1M with no Synopsis Sheet**

  - **$1.5M Palletized Load System (PLS) Buy III, Dec 98 contract**. This CLS project was initiated in 1995 to retrofit a 10 ton vehicle to carry 15 tons with a PLS. Previous PLS contracts in Dec 95, and Aug 96 included capital project summary sheets (CPS) approved by the MND. However, a $1.5M expenditure approval was not sought for Buy III. Total expenditures to date are $7.4M(net GST) to retrofit 60 of the 176 vehicles in this fleet. On-going retrofits are procured through a standing offer as funds become available.

  - **$1.2M Sub-unit Water Purification Units (SWPUs) Aug 98 contract**. This was a CLS developmental project for a portable water purification system to provide potable water to army sub-units. The original contract value was $876K in Jun 96. However, a contract revision for prototype design changes to address electrical power deficiencies increased project expenditures to $1.2M, exceeding the $1M expenditure authority limit.

  - **Combined Level 1 MRs**. We observed that some projects would combine MR funds from two Level 1 sources with capital funds from another Level 1. The DMS Manual is not clear as to whether the combined requirements and funding (exceeding $1M) would constitute a single project for approval purposes. Had the capital project taken the lead in the procurement, with MR funds contributing to the total requirement, the MR expenditure approval authority would not have been relevant.

Annex B MR Project Scope and Cost Compliance

- **MR Projects Not Compliant with Synopsis Sheets**. With respect to scope and cost, 10 MR projects were identified as non-compliant. We attribute the main cause for scope and cost changes to the significant number of developmental MR projects; 19% of the MR projects sampled had contracted for delivery of a prototype prior to production. We observed that some of these contracts had a significant portion of the contract payments made prior to production milestones. These developmental MRs contributed to an annual MR program slippage of 22%. Two projects in particular had significant cost escalation. In some cases the price creep was attributable to risks external to the Department such as inter-departmental projects and foreign exchange.

  - **$4.3M Heavy Logistic Vehicle Wheeled (HLVW) Refueller Apr 97**. This project combined Level 1 MR funds from CAS and CLS for an original project value of $3.7M. The CPS was approved by MND in Aug 95 for 37 HLVW refuellers. However, the contract was revised in Apr 97 to address the CLS increased requirement from 18 to 24 vehicles (increasing total requirements to 43).

  - **$3.2M Night Vision Goggles (NVG) Jul 96**. CAS originally received approval from MND for a $1.9M MR project to satisfy a requirement for 84 NVG to equip Search and Rescue technicians. By 1999, the CAS expenditures had increased to $3.2M. Department-wide expenditures have included $3.8M non-strategic capital and $1.1M National Procurement funds for a total value of $8.1M to acquire 274 NVG for all three ECSs. Combined Level 1 MRs on a single procurement instrument should be encouraged to generate economies of scale. However, this should not effectively result in avoidance of PSC contract review applicable to contract values exceeding $2M.

Annex B MR Project Scope and Cost Compliance

- **Requirements/Scope Definition**. Although the majority of MR projects complied with individual MR Project Synopsis Sheets, we found that certain requirements had been addressed as separate MR projects under different contracts, contract amendments or contract options. To remain below the expenditure approval threshold and MR project ceiling the requirements project definition was not comprehensive in some cases. We observed :

    - Descoping of the total requirements to avoid the approval process for non-strategic capital projects.
    - Procurement of materiel that exceeded the statement of requirement or capability deficiency but still within the approved project ceiling.
    - The exclusion of essential spares for new equipment to lower the MR project cost.
    - Separate MR projects for IT hardware and the associated software.
    - Optional buy quantities in contracts to revise the requirement based on the negotiated unit cost. In some cases the unit cost increased when the option was exercised.
    - Life-time spares procured as an MR project rather than funding from National Procurement.
    - IT hardware procured with year-end opportunity funds but without the project being identified on the Level 1 approved MR plan.

Annex C Non-Compliant MRR Projects

- **MRR Projects with Unit Price Exceeding $1M but no Synopsis Sheet**

  - **$1.5M Computer Aided Design/Drafting (CADD) System Jan 99**. The Fleet Maintenance Formation Cape Scott replaced a CADD system that was not Y2K compliant. Funded by CMS, the urgency and high priority of Y2K projects in the Department was such that MND approval was not sought for the new system.

  - **$1.1M Mobile 80 Ton Crane Nov 98**. MARLANT fleet replacement plans had scheduled the replacement of this 18 year old crane for 1998. Opportunity funds became available in Nov 98. Normally a two year lead procurement lead time is necessary but a crane became available when another buyer could not take delivery. Delivery was taken and the payment made in Mar 99.

Annex D Management Action Plan

Serial	CRS Recommendation	OPI	Management Action	Milestone
1	An omnibus submission be co-ordinated by VCDS/DFPPC to advise the Minister of four projects identified by the audit as having warranted, but not having received, approval.	DFPPC (CLS & CAS projects)	DFPPC will investigate the four MR projects identified in the audit and take required action. CLS will request ADM(Mat) for approval in arrears.	Dec 2001
2	DFPPC consider requesting an increase in the MR expenditure approval authority limit	DFPPC	MR upper $limit increase to $5M. Expenditure Authority (EA) delegated to DM, ADM (Mat) and ADM (IE) up to $5M now in effect. Remainder L1 EA limit remains at $1M. Approval process has been streamlined	Expect PMB final approval in Oct 01
3	DFPPC clarify the MRR policy with respect to maximum project value, expenditure authority approval, the type of MRR commodity, and the frequency of replacement	DFPPC	Revised DMS will no longer use the term MRR. MR will be defined directly in accordance with the expenditure authority required and within the MR project ceiling of $5M. CMS has already developed a life cycle guidance for recurring MR materiel.	12 months
4	Level 1 MR co-ordinators ensure policies are consistent with DMS MR policy.	Level 1s	CAS will modify Air Command MR Instruction 001/01 once DFPPC has amended the DMS. The CMS MARCORD (Apr 00) will also be amended accordingly.	18 months
5	MR co-ordinators review Level 1 policies to incorporate best management practises to be maintained on a DIN web site.	Level 1s	CAS will promote a best MR management practise web site to be maintained on the DIN.	In progress
6	Level 1 MR co-ordinators develop a performance measurement system for high-value MR projects	DFPPC Level 1s	DFPPC will investigate with Requirements Directors consultation (of which DMG Compt is a part). CMS and CLS will work in concert with ADM(Mat) and DGSP to develop a common performance measurement mechanism for MRs. CAS is conducting Wing site visits to develop performance indicators for high value MR projects	Interim report in 12 months

Annex D Management Action Plan

Serial	CRS Recommendation	OPI	Management Action	Milestone
7	DFPPC clarify policy regarding combined Level 1 MRs and project definition (What constitutes a MR project?)	DFPPC	This will be clarified in the revision to the DMS. D Air Prog/CAS will explore avenues to co-ordinate joint purchases.	12 months
8	DFPPC develop a mechanism to identify higher risk associated with proposed MR projects that include developmental costs.	DFPPC	DMS will reinforce principle that to qualify for the streamlined MR process, projects would not require development or definition. Policy will be reinforced to ensure that projects requiring development or definition are processed as non-strategic projects and not MRs	12 months
9	Level 1 MR co-ordinators minimize slippage in the MR program by: ▪ Initiate requisitions 90 days prior to the fiscal year for long lead time MRs for a limited portion of the MR allocation ▪ Level 1 MR co-ordinators over program to minimize slippage	Level 1s	CAS will over-program up to 20% to reduce project slippage. CMS has developed an over programming methodology for MR projects.	In progress
10	Level 1s enhance management controls to ensure oversight of higher value/higher risk MR projects (frequent reporting/review boards.	Level 1s	D Air Prog/CAS will improve oversight of high value MR projects by more frequent reporting and/or review boards. DLR/CLS will revise project approval s if the scope of the MR project changes. CMS has employed a contingency fund default for MR projects to avoid expenditures greater than the approved project value.	In progress