



Transportation Safety Board of Canada

Performance Report

For the period ending
March 31, 1999

Canada

Improved Reporting to Parliament Pilot Document

The Estimates of the Government of Canada are structured in several parts. Beginning with an overview of total government spending in Part I, the documents become increasingly more specific. Part II outlines spending according to departments, agencies and programs and contains the proposed wording of the conditions governing spending which Parliament will be asked to approve.

The *Report on Plans and Priorities* provides additional detail on each department and its programs primarily in terms of more strategically oriented planning and results information with a focus on outcomes.

The *Departmental Performance Report* provides a focus on results-based accountability by reporting on accomplishments achieved against the performance expectations and results commitments as set out in the spring *Report on Plans and Priorities*.

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Foreword

On April 24, 1997, the House of Commons passed a motion dividing on a pilot basis what was known as the annual *Part III of the Estimates* document for each department or agency into two documents, a *Report on Plans and Priorities* and a *Departmental Performance Report*.

This initiative is intended to fulfil the government's commitments to improve the expenditure management information provided to Parliament. This involves sharpening the focus on results, increasing the transparency of information and modernizing its preparation.

This year, the Fall Performance Package is comprised of 82 Departmental Performance Reports and the government's report *Managing for Results - Volumes 1 and 2*.

This *Departmental Performance Report*, covering the period ending March 31, 1999, provides a focus on results-based accountability by reporting on accomplishments achieved against the performance expectations and results commitments as set out in the department's pilot *Report on Plans and Priorities* for 1998-99. The key result commitments for all departments and agencies are also included in Volume 2 of *Managing for Results*.

Results-based management emphasizes specifying expected program results, developing meaningful indicators to demonstrate performance, perfecting the capacity to generate information and reporting on achievements in a balanced manner. Accounting and managing for results involve sustained work across government.

The government continues to refine and develop both managing for and reporting of results. The refinement comes from acquired experience as users make their information needs more precisely known. The performance reports and their use will continue to be monitored to make sure that they respond to Parliament's ongoing and evolving needs.

This report is accessible electronically from the Treasury Board Secretariat Internet site:
<http://www.tbs-sct.gc.ca/tb/key.html>

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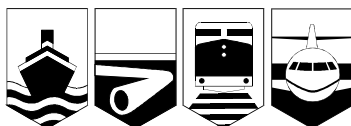
Transportation Safety Board of Canada

Departmental Performance Report

For the period ending
March 31, 1999

Benoît Bouchard
Chairperson
Transportation Safety Board of
Canada

Stéphane Dion
President
Queen's Privy Council for Canada



Canada[®]

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Chart of Key Results Commitments 1998-1999

| Transportation Safety Board of Canada (TSB) | | |
|-------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| To provide Canadians with: | To be demonstrated by: | Achievement reported in: |
| <p>Advancements in safety through independent, objective and timely analysis of safety failures in the federally regulated transportation system.</p> | <ul style="list-style-type: none"> • Identification of safety failures in the marine, rail, pipeline and air transportation systems. • Reduction in risks to persons, property and the environment through the use of investigation findings by governments and industry. • Public access to safety information and recommendations. • Satisfaction with quality and timeliness of findings and recommendations. • Awareness by Canadians of the Board's role in advancing transportation safety. • National and international recognition of the Board as an authoritative and independent resource in the area of transportation safety. | <ul style="list-style-type: none"> • DPR Section III, page 13 and in TSB Annual Report to Parliament • DPR Section III, page 14 and in TSB Annual Report to Parliament • DPR Section III, page 17 and in TSB Annual Report to Parliament • DPR Section III, page 18 and in TSB Annual Report to Parliament • DPR Section III, page 20 and in TSB Annual Report to Parliament • DPR Section III, page 21 and in TSB Annual Report to Parliament |

Section I: The Chairperson's Message

In June 1998, Parliament made several amendments to the *Canadian Transportation Accident Investigation and Safety Board Act* (CTAISB). These changes reinforced the independence of this agency and further clarified the separate role of the Board *vis-à-vis* the police and the courts. In addition, the timing of the Board's annual report to Parliament was changed from the calendar year to the fiscal year, thereby aligning the reporting of our activities, findings and recommendations with our financial reporting requirements.

On 2 September 1998, the TSB was confronted with its largest challenge to date. Swissair Flight 111 crashed into the Atlantic Ocean off Peggy's Cove, killing all 229 occupants. In accordance with the *Convention on International Civil Aviation*, Canada, and more particularly the TSB, has led the international safety investigation into this tragedy. The recovery operation has involved thousands of personnel from many jurisdictions, including the Canadian Forces, Royal Canadian Mounted Police, Canadian Coast Guard, United States Navy, the Province of Nova Scotia and many others. The safety investigation has involved accredited representatives from Switzerland, the United States, the United Kingdom and France, as well as subject-matter experts from Swissair, the Boeing Commercial Airplane Company, and others. In spite of the extremely difficult working conditions, a high degree of cooperation between all these groups has characterized the recovery and investigation operations to date. Every individual involved has contributed with great sensitivity and determination in attempting to make some sense from this tragedy.

In particular, I have been extremely impressed with the professional competence, integrity and compassion demonstrated by the technical staff of the TSB in orchestrating this extremely demanding recovery and investigation effort. Working closely with their counterparts from several other agencies, they have toiled tirelessly, separated from their families for long periods with little relief, in their quest for the facts that will lead us to understanding *why* this tragedy occurred. Seldom have I witnessed such personal commitment.

The Swissair crash has underlined a vulnerability that I referred to in my message to Parliament last year. The investigation into this accident has necessitated the participation of investigators from many of our modal specialties (marine, rail and air) as well as major input from most areas of professional specialty and administrative support within the TSB. During this period, much other work has been given a lower priority. At present, the lack of depth in our resources would compromise our ability to respond to a rash of accidents in any one mode or to respond effectively to another accident on the scale of the Swissair investigation. In short, I believe we are stretched too thin.

In spite of the pressures of current resource levels, I am pleased to report that work has continued to progress in the fulfilment of the *TSB 2000* vision. Necessary internal organizational re-alignments are being effected. Much improved processes and methodologies are being developed and implemented, and the necessary training programs to support these changes are under way. Philosophically, the focus of the Board's work is increasingly on the identification of those unsafe conditions that place persons, property or the environment at risk, as evidenced by transportation occurrences.

The overall accident statistics in the Canadian transportation system are very favourable with low accident rates and flat, or even decreasing trends. Canada's transportation system deservedly enjoys a worldwide reputation as a model of safety and efficiency. But, the thousands of accidents and incidents that occur each year are a reminder that there is still room for improvement. Also to paraphrase an old maxim, "*The price of safety is eternal vigilance*". The high levels of safety that Canadians have come to expect and enjoy must not be taken for granted.

Section II: Departmental Overview

II.1 Mandate, Vision and Mission

The Transportation Safety Board of Canada (TSB) is an independent agency created in 1990 by an Act of Parliament (*Canadian Transportation Accident Investigation and Safety Board Act*). Under this legislation, the TSB's only object is the advancement of transportation safety in the federally regulated elements of the marine, rail, pipeline, and air transportation systems. This mandate is fulfilled by conducting independent investigations including, when necessary, public inquiries into transportation occurrences. The purpose of these investigations and inquiries is to make findings as to the causes and contributing factors of the occurrences and to identify safety deficiencies which in turn may result in recommendations designed to improve safety and reduce or eliminate risks to people, to property and to the environment. The TSB has the exclusive authority to make findings as to causes and contributing factors when it investigates a transportation occurrence.

The jurisdiction of the TSB includes all transportation occurrences in or over Canada. The Board may also represent Canadian interests in foreign investigations of transportation accidents involving Canadian registered, licensed, or manufactured ships, railway rolling stock, or aircraft. In addition, the Board carries out some of Canada's obligations related to transportation safety at the International Civil Aviation Organization (ICAO) and the International Maritime Organization (IMO).

A transportation occurrence is any accident or incident associated with the operation of an aircraft, ship, railway rolling stock, or pipeline. It also includes any hazard that could, in the Board's judgement, induce an accident or incident if left unattended.

Our Mission: The Transportation Safety Board of Canada is an independent agency of the federal government. Our mission is to advance transportation safety.



Our Vision is to:

- reduce safety risks in the Canadian transportation system through the provision of relevant, timely and accurate information and compelling arguments for change.
- tailor our communications to meet the needs of the different interested groups.
- employ effective and efficient processes driven by multi-disciplinary teams with clear accountability and responsibilities, and by the TSB's core values.
- provide a positive work environment where the staff have the opportunity to develop the necessary functional, process and interpersonal skills to excel.

II.2 Operating Environment

The TSB operates within the context of the very large and complex Canadian transportation system.

The marine mode involves approximately 46,000 Canadian-registered commercial ships and many foreign vessels in Canadian waters. Marine traffic in Canada includes the transportation of over 40 million passengers annually and nearly 350 million tons of cargo for domestic and international markets. The fishing industry operates over 25,000 vessels.

There are some 30 federally regulated railways, operating close to 40,000 miles of track. The system generates over 360 billion gross freight ton-miles of output, produces close to 75 million freight train-miles of work and over 900 million passenger-miles of service. The railways operate over 3,000 locomotives and approximately 110,000 freight and passenger rail cars, and employ over 45,000 people.

The national pipeline system under federal jurisdiction comprises about 100 oil and gas companies. These companies operate approximately 40,000 km of pipelines. Over 145 million cubic metres of crude oil and 141 billion cubic metres of natural gas are moved by pipeline in Canada annually.

The civil air transportation system processes over 70 million enplaned and deplaned passengers annually through over 600 Canadian airports. About 1,000 Canadian air carriers and an almost equal number of foreign carriers operate in Canada. There are over 70,000 licensed aviation personnel and nearly 28,000 registered aircraft. The Canadian aerospace industry and the airline industry employ about 88,000 people.

II.3 Position in the Government and Co-delivery Partners

The TSB reports annually to Parliament on its activities, findings, and recommendations through the President of the Queen’s Privy Council, and as such is not part of the transportation portfolio. It is not uncommon for Canadians to associate the TSB with Transport Canada. However, the TSB and Transport Canada are completely separate organizations. The creation of the TSB as an independent agency eliminated the conflict of interest that existed when government bodies regulated or operated transportation activities and also investigated the failures associated with their own regulations and operations. The legislation gives the TSB the exclusive authority to make findings as to causes or contributing factors when it investigates a transportation occurrence. The TSB’s investigative process is explained in Appendix A. Other departments (e.g. Transport Canada, National Energy Board, etc.) may however investigate for any other purposes.

There are many individuals and groups cooperating with the TSB in the fulfillment of its mandate. During the course of an investigation the TSB interacts directly with a number of individuals such as: survivors, witnesses, next-of-kin, and operators. The TSB also interacts with a number of other organizations and agencies such as: coroners, police, manufacturers, owners, insurance companies, as well as other federal government departments and agencies. The cooperation of all these individuals and organizations is essential to the conduct of the TSB’s business. A list of these organizations with whom the TSB has agreements can be found at Appendix B.

The Ministers of Transport Canada and the National Energy Board often send a representative to accident sites in order to evaluate the occurrence from the perspective of their organization’s responsibilities and to determine if any immediate action is required to ensure that they are meeting their responsibilities. Other federal government departments may also be present at accident sites, such as Human Resources Development Canada, Environment Canada, and the Royal Canadian Mounted Police, to ensure that the areas within their jurisdiction are also handled in an appropriate manner, and to support the TSB.

II.4 Objective

The objective of the TSB is to advance transportation safety by:

- C conducting independent investigations including, when necessary, public inquiries, into selected transportation occurrences in order to make findings as to their causes and contributing factors;
- C identifying safety deficiencies as evidenced by transportation occurrences;

- C making recommendations designed to eliminate or reduce any such safety deficiencies; and
- C reporting publicly on its investigations and on the findings in relation thereto.

II.5 Strategic Priorities

The current strategic priorities of the TSB are:

- To provide Canadians with independent, credible, and timely investigation findings by:
 - # the application of systematic investigation and analysis methodology to identify safety deficiencies
 - # the recruitment and on-going development of suitably skilled and experienced staff
 - # the provision of opportunity for persons with a direct interest to comment on a draft report before it is made final
 - # the issue of final investigation reports within a one year time frame
 - # the re-organization of the TSB along results-oriented service lines and the implementation of a new performance management framework providing a clearer focus on results.
- To provide Canadians with improved access to pertinent safety information by:
 - # the strategic use of information technologies, such as the Internet, to make safety information available to the industry and the public
 - # the increased exchange of safety data with other government organizations and the transportation industry
 - # the publication of periodic safety magazines for each mode of transportation.

II.6 Challenges

Swissair Flight 111 accident investigation: The crash of Swissair Flight 111 near Peggy's Cove in Nova Scotia on September 2, 1998 severely tested the resources of the TSB. This accident, the most complex in Canadian history, demanded the mobilisation of the majority of the TSB total resources. Staff from all areas of the TSB, including other modal investigators and Engineering, Finance and Administration, Human Resources, Communications and Informatics staff, had to drop current work to help in this investigation thus creating backlogs in all areas. Catch up has been difficult and has put a strain on all of our people. Had another significant accident occurred between September 1998 and March 1999, the TSB would have

had extreme difficulty in responding appropriately. This investigation has shown how the TSB is vulnerable if more than one major occurrence happens in any given year. The TSB was very fortunate in all the help it received from other government departments, in particular the RCMP, National Defence and the Coast Guard, other governments and various industry companies, without their help the TSB would have been unable to progress the investigation as it has.

Recruitment and Retention of Personnel: The recruitment and retention of personnel represents a major challenge for the TSB. The TSB operates within a very competitive market place where there is limited availability of skilled personnel (e.g. experienced investigators, computer specialists) and where the government cannot compete with the salaries and benefits offered by the industry. The TSB must also contend with employee insecurity and dissatisfaction resulting from years of cuts and increasing workloads, perceived pay inequities within the TSB and with other departments with a transportation mandate, and the implementation of the Universal Classification System.

Public Interest in Transportation Safety: Transportation safety has always been a matter of public concern in Canada. This is largely due to the essential social and economic role that the transportation system plays in this country. In the aftermath of recent air accidents, like Swissair Flight 111 and TWA 800 in the United States, new demands on investigative agencies have evolved. News media expect real-time, round-the-clock, on-site coverage. The expectations of the next-of-kin for support from the investigating state have also increased. They have an enormous thirst for up-to-date factual information; most wish to follow closely the progress of the investigation. Given the loss they suffered, great care must be exercised in communicating with them. Fulfilling these evolving needs is proving to be a major challenge within our existing resource levels.

Impact of Technology on Transportation: Over the last couple of decades, the rate of technological change in the transportation industry has been very rapid. This is largely due to significant advances in computer and electronics technology, the development of new materials, and their application to the transportation industry. These advances affect all modes of transportation, and while many of them enable investigators to perform their work more effectively, they also make the job of investigation and safety analysis increasingly complex and specialized. The increased reliance on automation poses particular problems for analysing failures at the human-machine interface.

The industry reliance on computers and automated systems may also present some particular challenges as we approach year 2000. Throughout all modes of the transportation industry work is being done to assess the potential impact of the year 2000

bug and to ensure full readiness. For its part, the TSB must be prepared to investigate occurrences where the year 2000 problem may have been a factor.

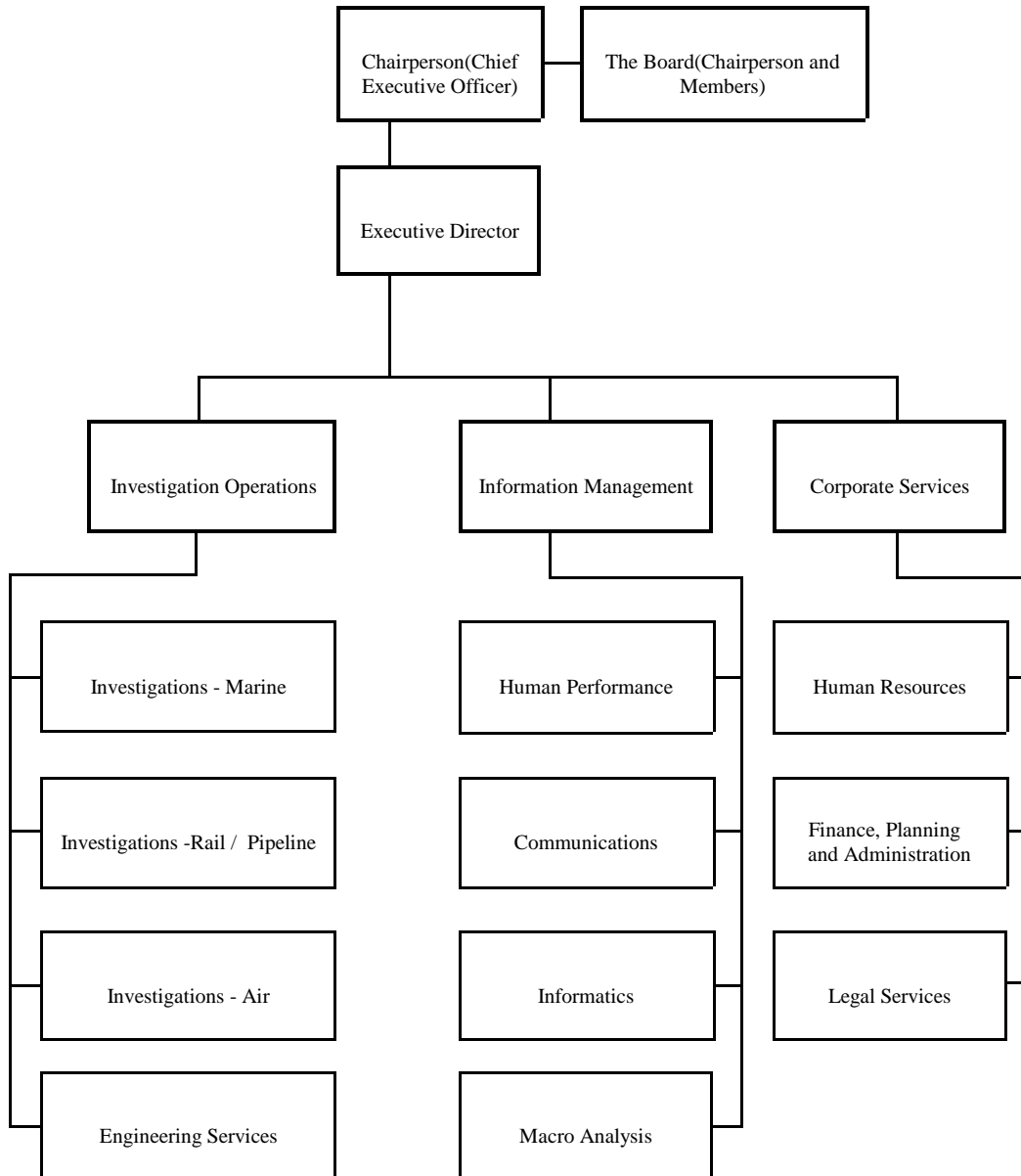
II.7 Departmental Organization

The TSB provides services to Canadians in general and to various identifiable groups such as manufacturers, owners, operators and regulators within the transportation system through one business line: the advancement of transportation safety. This business line is then sub-divided into two service lines: Investigations and Corporate Services.

The Investigations service line consists in the conduct of independent investigations into transportation occurrences involving ship, railway, pipeline and aircraft operations and the preparation of reports on the findings and any safety deficiencies identified, including recommendations based on the findings. This service line includes the activities of the Investigation Operations Directorate, the Board Members' office, and the activities of the Human Performance Division and the Macro Analysis Division of the Information Management Directorate.

The Corporate Services service line consists in the provision of internal management and support services in the areas of human resources, finance, administration, informatics, policy and planning, and communications. This service line includes the activities of the Corporate Services Branch, and the activities of the Communications and Informatics Divisions of the Information Management Directorate.

Figure 1: TSB Organizational Chart



Section III: Departmental Performance

III.1 Performance Expectations

In the *1998-1999 Report on Plans and Priorities*, the TSB defined its strategic priorities as outlined under Strategic Priorities section II.5 on page 6 of this report.

Since then work has been done to better define the key performance expectations that the TSB is committed to provide to Canadians. These more elaborate performance expectations are summarized below. Performance measurement and reporting is a "work in progress" for the TSB, further improvements may therefore be expected in future reports.

III.2 Key Performance Expectations

1. Service to Canadians - Advancement of Transportation Safety
 - 1.1 Identification of safety failures in the marine, rail, pipeline and air transportation systems.
 - 1.2 Reduction in risks to persons, property and the environment through the use of independent, credible and timely investigation findings by governments and industry.
 - 1.3 Public access to safety information and recommendations through innovative and cost-effective information methods and technologies.
 - 1.4 Satisfaction with quality and timeliness of findings and recommendations.
 - 1.5 Awareness by Canadians of the Board's role in advancing transportation safety.
 - 1.6 National and international recognition of the Board as an authoritative and independent resource in the area of transportation safety.

2. Good internal management of the agency
 - 2.1 Achievement of the Program Review II resource reductions.
 - 2.2 Implementation of a new performance management framework providing a clearer focus on results.
 - 2.3 Implementation of government-wide strategies and initiatives.
 - 2.4 Recruitment and on-going development of suitably skilled and experienced staff.

III.3 Performance Accomplishments

| Transportation Safety Board of Canada ¹ | |
|-----------------------------------------------------------|--------------|
| Planned Spending | \$22,005,000 |
| Total Authorities | \$59,068,133 |
| 1998-1999 Actuals | \$57,322,991 |

The Swissair Flight 111 accident off the coast of Peggy's Cove in Nova Scotia on September 2, 1998 had a profound effect on all plans and priorities of the TSB. This is one of the most complex investigations in the world to date. The plane crashed in deep water, in an unprotected (from the elements) area, and with unpredictable weather. Recovering wreckage, the voice and flight recorders and the human remains was an enormous challenge for all involved. This challenge continues now as the TSB still seeks answers as to what happened to Swissair Flight 111. The Air India crash in 1985 was ruled an act of terrorism and thus the extensive resources of many police agencies around the world, including our own RCMP, have been devoted over these many years to finding the persons responsible and bringing them to justice. In the case of Swissair, although the TSB received the generous assistance of many departments, including principally the RCMP, the Department of National Defence and the Coast Guard, the TSB has been responsible for the conduct of the safety investigation. In the first months of the investigation a third to a half of the TSB's resources were commandeered to help in the various tasks involved in an investigation of this magnitude. The TSB was in its final year of Program Review and its resources to deal with an accident of this scope and complexity were sadly limited. With the help of various federal government departments, the Government of Nova Scotia, the Governments of the United States of America and Switzerland and various manufacturers and producers both inside and outside the transportation industry, the critical first months of the investigation were very productive. The fact that all 229 people aboard the plane were identified so quickly has set a norm for future investigations. It also showed that even with our resources so diminished, the demand for our services has increased, in particular, as it relates to the needs of next-of-kin to get information virtually as the TSB receives it. The demand for tours and

¹:The summary financial information presented for the business line includes three figures. These are intended to show the following:

- what the plan was at the beginning of the year (**Planned Spending**);
- original spending plans plus additional spending Parliament has seen fit to approve in Supplementary Estimates in relation to new collective bargaining obligations and the Swissair accident investigation (**Total Authorities**);
- total expenditures incurred (**Actuals**).

briefings at the field office site is unprecedented. The requirement for instantaneous information has greatly challenged our Communications Division and has added to the workload for the team leading the investigation. The TSB was tasked with briefing Treasury Board officials on a regular basis on all financial aspects of this major project and also for preparing the Treasury Board submissions to compensate for the incremental costs of all departments involved.

This accident was coincident with the beginning of the implementation of the Universal Classification System (UCS). The TSB's implementation plan required the participation of managers and employees throughout the organisation. Needless to say, the plan had to be completely revised since many of those assigned to UCS had to be re-assigned to the Swissair investigation. The TSB had to scramble to find outside resources to fill the void thus increasing the costs beyond anything predicted, not only for the cost of the consultants but also the time required to try to teach them the TSB business which is unique in Canada. It also meant training other managers and employees to fill some of the void. Notwithstanding the above the TSB was able to meet all the stringent requirements and deadlines imposed by the Treasury Board Secretariat.

The implementation of these two activities was not without price, both in terms of overtime costs and most importantly the stress and strain imposed on the TSB's human resources and their families. There was also a necessary slow down in other projects as resources could be spread only so thinly.

In order to present the best possible performance summary we have combined statistical trends, qualitative indicators and anecdotal evidence. Nonetheless, the challenge for future TSB performance reports will be to develop better performance indicators of client satisfaction, and of the long-term, broader impact of TSB performance on transportation safety in Canada.

The following symbols are used to indicate the results achieved:

- : work is underway
- ✓: objectives achieved.

1. Service to Canadians — Advancement of Transportation Safety

| | | |
|-----|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 1.1 | Identification of safety failures in the marine, rail, pipeline and air transportation systems. |  |
|-----|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|

Our Approach:

The TSB uses its Occurrence Classification Policy to identify occurrences with the potential to result in safety actions or occurrences with a high degree of public concern. Only these occurrences are investigated. The TSB thereby focuses on doing fewer investigations, but more complete work on the selected cases. This good risk management approach to doing business must however be well communicated to Canadians.

Our Accomplishments:


In 1998-1999, the TSB started 81 investigations and completed 119 reports that were released to the public. In addition to these reports, the TSB issued a total of 48 safety outputs (recommendations, safety advisories and information letters) as indicated in figure 2. The number of recommendations, safety advisory notifications and information letters issued by the TSB has increased over last year due mainly to the investigation into the Swissair accident. This accident accounts for 4 recommendations in this year. It should be noted that in the last two years the TSB has adopted a more open and collaborative approach in its investigations. More information is provided to the persons with a direct interest in the findings throughout the investigation process permitting them to take immediate safety actions. It is now frequent practice to observe safety actions being taken by industry and governments during the course of the TSB investigations. Rather than issuing recommendations, the TSB then can report on the corrective actions already taken by industry and government agencies.

The TSB started 81 investigations and released 119 investigation reports in 1998-1999.

Figure 2

| TSB Safety Outputs | | | |
|----------------------------------------------|------|------|-----------|
| | 1996 | 1997 | 1998-1999 |
| Recommendations | 37 | 13 | 16 |
| Safety Advisories | 30 | 16 | 21 |
| Information Letters | 9 | 6 | 11 |
| Safety Actions Taken During Investigations * | 101 | 103 | 191 |

* In previous years safety actions taken during investigations were computed on the basis of the calendar year but with the change to the Act in 1998, these actions will now be reported on a fiscal year basis. For 1998-1999, to bridge the gap, the numbers are for a 15 month period beginning with 1 January 1998.

| | | |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 1.2 | Reduction in risks to persons, property and the environment through the use of independent, credible and timely investigation findings by governments and industry. |  |
|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|

Our Approach:

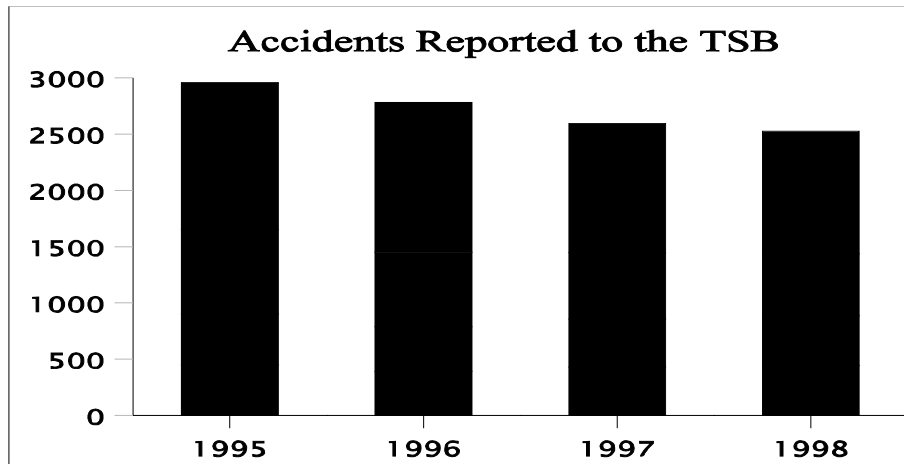
The TSB conducts its investigations in an independent, non-controversial and open style, giving operators and regulators the opportunity to see where most of the safety problems are in the course of an investigation. Operators and regulators can therefore take immediate actions without waiting for TSB recommendations. The TSB may issue interim safety recommendations if a safety deficiency warrants urgent action which is not otherwise being taken. Safety advisory notifications and information letters can also be issued during the course of investigations in order to draw immediate attention to particular issues. Upon concluding an investigation the TSB issues a public report which may contain recommendations. The TSB then monitors follow-up on its recommendations to identify if safety actions are being taken to address the associated safety deficiencies. It should however, be noted that the TSB has no authority to impose changes on the operators and the regulators and could not have this authority without creating a conflict of interest.

Our Accomplishments:

In 1998, a total of 2,081 accidents and 1,422 incidents were reported in accordance with the TSB's Regulations for mandatory reporting. For the fourth consecutive year, the total number of occurrences reported has declined. The number of accidents in 1998 decreased by 4% from 1997 and has decreased by 18% since 1994. This reduction cannot be attributed to the efforts of any specific organization. Improvements in transportation safety are the result of the combined efforts of many participants including manufacturers, carriers, crews, regulators, as well as the TSB. The numbers are also affected by changes in activity levels.

The number of reported accidents has decreased by 18% since 1994.

Figure 3 (numbers are by calendar year)



In order to measure its contribution to the advancement of safety the TSB assesses the responses to its recommendations. In 1998-1999, the TSB received responses to 9 recommendations, some relating to recommendations issued in the previous year. The results of this assessment are shown in figure 4.

Figure 4

| Assessment of Responses to TSB Recommendations - Current Year | | | | | |
|---------------------------------------------------------------|---------------------------------------------------|---------------------------------------------|-----------------------------------------------------|-----------------------------------------------|-------|
| 1998-1999* (Year response received) | Fully satisfactory attention to safety deficiency | Satisfactory attention to safety deficiency | Attention to safety deficiency satisfactory in part | Unsatisfactory attention to safety deficiency | Total |
| Marine | - | - | - | - | 0 |
| Pipeline | - | - | - | - | 0 |
| Rail | 2 | 1 | - | - | 3 |
| Air | 4 | - | 2 | - | 6 |
| Total | 6 | 1 | 2 | - | 9 |


*Data are from January 1998 to March 1999 (15 months)

Over a longer time frame, the response to TSB recommendations is very positive. Figure 5 illustrates the assessment of responses to TSB recommendations issued since 1990. Over the past year, the TSB has noted an improvement in the attention given to reducing or eliminating the safety deficiencies identified, especially by Transport Canada.

Figure 5

| Assessment of Responses to TSB Recommendations (1990-1998) | | | | | |
|------------------------------------------------------------|---------------------------------------------------|---------------------------------------------|-----------------------------------------------------|-----------------------------------------------|-------|
| | Fully satisfactory attention to safety deficiency | Satisfactory attention to safety deficiency | Attention to safety deficiency satisfactory in part | Unsatisfactory attention to safety deficiency | Total |
| Marine | 35 | 33 | 21 | 8 | 97 |
| Pipeline | 8 | 9 | 1 | 1 | 19 |
| Rail | 36 | 18 | 17 | 5 | 76 |
| Air | 85 | 25 | 36 | 26 | 172 |
| Total | 166 | 85 | 75 | 40 | 364 |

Furthermore, a number of safety actions were undertaken by the industry and by government before the TSB completed its investigations and issued reports (refer to figure 2). These safety actions are also the result of TSB efforts to identify safety deficiencies.

| | | |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 1.3 | Public access to safety information and recommendations through innovative and cost-effective information methods and technologies. |  |
|------------|--------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|

Our Approach:

The TSB reports publicly on all its investigations. The TSB publishes periodic occurrence statistics for each mode of transportation, as well as a periodic safety digest entitled *Reflexions*. The TSB regularly updates its distribution lists and from time to time conducts reader surveys. The TSB also maintains on-going communication with industry and government agencies involved in transportation safety in order to promote the safety messages. The TSB maintains a key safety issues list (see Appendix A for details) which identifies areas where the risk to safety is sufficient to warrant extra efforts by the transportation industry and governments to address these risks and reduce further accidental losses.

The TSB has a departmental web site where some of this safety information is available to Canadians. The TSB is also planning to exchange some electronic data with other government agencies and with industry.

Our Accomplishments:

In 1998-1999, the TSB published 119 occurrence reports, as well as monthly and annual statistical reports. The TSB continues to publish the *Reflexions* safety digest for each transportation mode. These digests contribute to the advancement of transportation safety by reflecting on the safety lessons learned from accident and incident investigations. Extremely positive feedback has been received from around the world on these publications. In 1998-1999, the TSB published 5 issues (less than in previous years because of the resources and effort required for the Swissair Flight 111 investigation) with a constant readership estimated at 100,000.

The TSB makes use of its Internet site to make all its reports and other transportation safety information available to Canadians. This initiative has proven to be a cost-

effective way of disseminating information. Planning documents such as this DPR, the annual report and others were added to the site in this fiscal year. The site is averaging 156,000 visits per year. In the year, these visitors have viewed approximately 1,700,000 pages. The TSB had to add a special section on its web site to handle the surge of interest in anything and everything generated by the Swissair investigation. Keeping up with oral and written request was becoming a hopeless task as so many staff were required to work on the investigation or its support. The creation of a special section on the web site seemed an obvious answer. However since it is part of the regular web site, the TSB has not been able to track how many visitors are using that section primarily.

Visitors to the TSB web site viewed 1,700,000 pages over this reporting year.

The TSB had also launched initiatives to share electronic data with other government agencies and selected organizations from the industry. This exchange of data was to facilitate the cooperation amongst safety organizations, thereby facilitating the fulfilment of their respective mandates. Although some success has been achieved with Transport Canada, other projects of a similar nature were put on hold because of other urgent priorities, such as Swissair and UCS.

The TSB also publishes on a yearly basis a leaflet entitled *Key Safety Issues*. The TSB's annual report for 1998-1999 contains the 1999-2000 version which outlines those issues that in the Board's opinion pose enough risk to transportation safety to justify extra efforts by the transportation industry and government agencies to prevent further accidental losses. The TSB believes that by highlighting such safety issues it can increase the awareness of industry and governments, with a view to the implementation of safety actions which will reduce or eliminate the attendant safety risks.

| | | |
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| 1.4 | Satisfaction with quality and timeliness of findings and recommendations. | <input type="checkbox"/> |
|------------|----------------------------------------------------------------------------------|--------------------------|

Our Approach:

The TSB strives to release all but the most complex of its investigation reports within one year of the occurrence date. In response to this challenge, the TSB launched a major initiative called *TSB 2000* to improve its operational effectiveness and efficiency. This initiative includes: the redesign of work processes, the development of standard

methodology for investigations and safety analysis, the refinement of the internal organization, and the upgrading of staff skills.

Our Accomplishments:

The TSB continued its efforts to reduce both the backlog of work in process and the time required to complete its investigations and to report on its investigations, findings and recommendations.

In 1998-1999, the TSB reduced the backlog of investigations in process by 29% compared to 1997 (135 ongoing investigations vs.191); there has been a 56% reduction since 1994. By the end of the reporting period, the number of reports produced over the previous period exceeded the number of investigations in process.

The TSB has previously stated its goal of producing a final report within one year of the occurrence. As of 31 March 1999, there were 58 investigations that had been in process for more than a year. Of these 58 investigations, 22 were assessed as having potential for significant safety improvement.

Notwithstanding the emphasis placed on report timeliness by the Board, adherence to the one-year standard has yet to be achieved. For the 119 reports completed in this period, the average time in process was about 18 months, up from 16 months in 1997-1998, as shown in figure 6.

The TSB did not meet its one-year standard for the completion of investigations.

Figure 6

| TSB Productivity* | | | | | | | | |
|----------------------------------------------------------|-----------|-----------|-----------------|-----------|-----------|-----------|-----------|-----------|
| | Marine | | Rail / Pipeline | | Air | | Total | |
| | 1997-1998 | 1998-1999 | 1997-1998 | 1998-1999 | 1997-1998 | 1998-1999 | 1997-1998 | 1998-1999 |
| Investigations started | 37 | 25 | 12 | 12 | 66 | 44 | 115 | 81 |
| Investigations completed | 44 | 44 | 18 | 24 | 63 | 51 | 125 | 119 |
| Average duration of completed investigations (# of days) | 537 | 624 | 742 | 648 | 378 | 416 | 489 | 560 |

* These numbers are based on the fiscal year.

The impact of program review has resulted in a reduced capability to meet all the demands on the staff in a timely manner. For example, staff involvement in the government-wide Universal Classification System (UCS) process and the extensive resources dedicated to the investigation into the Swissair Flight 111 occurrence have had an adverse effect on the timeliness of report production during this reporting period.

Bill S-2 was approved by Parliament to fine-tune the TSB’s enabling legislation. These amendments, designed to strengthen the effective legislation governing the way the TSB operates, fall into three categories: some are in response to government initiatives, many are administrative, and the remainder are aimed at enhancing the operating practices and independence of the TSB. Time will tell if these changes have the desired effect.

Feedback from the media is generally favourable to the TSB and findings are well communicated to Canadians in both the printed and electronic media.

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| 1.5 | Awareness by Canadians of the Board’s role in advancing transportation safety. |  |
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Our Approach:

Personal appearances by the Chairperson on the site of some major accidents are intended to draw more media attention to the work of the TSB. The Chairperson takes these opportunities to explain the role and mandate of the TSB to all Canadians. The TSB is also giving a higher profile to the release of key investigation reports. The TSB maintains on-going communication with industry.


Our Accomplishments:

For the most part, the TSB performs its work outside of the public eye, garnering media attention only in the first few days following a high profile accident. However, people closer to the investigative process know that a thorough investigation and analysis take time, and that those first few days in the field are only the beginning of a prolonged team effort. This all changed with the Swissair Flight 111 crash in September of 1998, from day one the media attention has been intense and regular. For example CNN has dedicated hours to briefings provided by the investigator-in-charge and members of his team. The interest of the next-of-kin has also been very intense and constant, understandingly, but the response to their demands has added to the time of the investigation process and will undoubtedly create a precedent for future investigations.

Overall, recognition of the TSB’s name by the media and the public is increasing and this recent accident has increased the knowledge of the TSB and its operations exponentially. More and more Canadians now recognize the distinction between the TSB and Transport Canada.

The TSB Chairperson was present at the site of two aircraft accidents, one at Mirabel Airport in Québec and of course at the Swissair accident near Peggy’s Cove in Nova Scotia.

The TSB Chairperson attended the public release of high-profile occurrence reports in Biggar, Saskatchewan, and Montreal, Quebec. The release of the Board’s report on the VIA Rail Canada Inc. train derailment in Biggar gave the Chairperson and the TSB the opportunity to meet with regional council and those involved with the rescue and evacuation after the derailment. During this release, meetings were held with representatives from labour unions and the Royal Canadian Mounted Police (RCMP). These meetings were well received by the community and the media. These occurrence reports are available on the TSB Internet site.

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| 1.6 | National and international recognition of the Board as an authoritative and independent resource in the area of transportation safety. |  |
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Our Approach:

In order to be recognized as an authoritative and independent resource in the area of transportation safety the TSB pursues a three pronged approach:

- hire and retain qualified, skilled staff;
- produce quality reports; and
- cooperate with other organizations.

Our Accomplishments:

The TSB is very well recognized at both the national and international levels. A number of Memoranda of Understanding have been negotiated to facilitate cooperation with other Canadian organizations (see Appendix B). These organizations recognize the professionalism and expertise of the TSB in its field of competence and have come to rely on the TSB’s findings. This recognition transcends the federal and provincial

The TSB provides accident investigation services relating to short-line railways to some provinces.

jurisdictions. The province of Ontario has signed an agreement with the TSB, and four other provinces have informal arrangements with the TSB, to obtain accident investigation services related to the short-line railways under provincial jurisdiction. Rather than developing their own expertise, these provinces have chosen to seek assistance from the TSB on a cost-recovery basis. These arrangements provide the provincial governments with a cost-effective and efficient response to their needs.

The TSB's engineering facilities continue to be of particular interest to officials from government, industry and academia. A number of visits and briefings were provided to enhance awareness and understanding of how scientific methods and technology are used during TSB investigations. In particular, the TSB's flight recorder playback capabilities attract world-wide attention. The *Recorder Analysis and Presentation System* (RAPS) developed by the TSB is currently in use under licensing agreement by five other countries and negotiations are on-going with other countries, the USA, Germany, France, Australia and Finland. A total of eight foreign government safety agencies currently contribute to a cost sharing agreement to further enhance and develop this system. This initiative has permitted a much bigger investment in the improvement of this system than the TSB alone could afford.

Foreign country contributions have increased fourfold the TSB investment in the enhancement of the RAPS used to analyse the black boxes retrieved from aircraft accidents.

The TSB actively supports the work of two organizations of the United Nations: the International Maritime Organization (IMO) and the International Civil Aviation Organization (ICAO).

The TSB also participates in such international associations as the Marine Accident Investigators International Forum, the International Society of Air Safety Investigators (ISASI), the International Ergonomics Association and the Flight Safety Foundation. The TSB also actively participates in and currently chairs the international flight recorder working group in ISASI.

At the request of the TSB, a working group was created at the IMO to produce a statement of requirements for voyage data recorders (VDR) for marine vessels. Utilizing the considerable recorder experience gained by the TSB over the years, a draft statement of requirements for VDR was prepared, based on the airline industry's standard for flight data recorders (FDR). The draft statement of requirements was informally presented at

an IMO meeting in London, England. After much technical discussion between the 18 interested member states and industry representatives, a draft working paper outlining the minimum requirements was produced. This draft was presented to the plenary session, and after some discussion, it was accepted and circulated to all member states.

2. Good Internal Management of the Agency

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| 2.1 | Achievement of the Program Review II resource reductions. | U |
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Our Approach:

The TSB has only one program. Program Review reductions could therefore only be achieved by streamlining operations and by making more selective decisions on which occurrences to investigate or not.

Our Accomplishments:

All Program Review reductions were achieved. As expected, by using a risk management approach, the TSB now conducts fewer investigations. The number of investigations dropped considerably as the TSB decided to make most of the reductions in the area of small investigations. This also resulted in the reduction of data used by the regulators to carry out their safety oversight role and for the TSB to conduct safety studies. The timeliness of TSB reports was also negatively affected. In previous years steady progress had been made to achieve the one-year standard for the completion of investigations. However, once the Program Review reductions were made the timeliness of reports slipped. This has had an impact on how Canadians perceive the TSB in the execution of its mandate.

From a financial perspective, the TSB has met its reduction targets. Furthermore, all work force adjustment costs related to the early departure incentive programs were entirely absorbed within the TSB budgets. The Treasury Board guidelines and standards relating to the pay back period for departure incentive programs were all met.

The TSB has met its reduction targets.

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| 2.2 | Implementation of a new performance management framework providing a clearer focus on results. | 9 |
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Our Approach:

The TSB’s Senior Management has been leading this exercise. Through structured workshops and brainstorming sessions the group has been refining both its long-term and short-term outcomes. An initial set of indicators was established at the end of the fiscal year, along with the activities and outcomes that will help the TSB achieve its desired results.

Our Accomplishments:

First the TSB refined its key results commitments and has undertaken to make itself better known to Canadians. Many efforts have been made to explain to Canadians the role of the TSB in advancing transportation safety. The media coverage of the Swissair accident certainly helped to bring the message to many more Canadians. The development of a comprehensive performance management framework is in hand but has not progressed as quickly as planned. It was one of the projects that had to be slowed down as Senior Managers were and are still heavily involved in the Swissair investigation and in the Universal Classification System (UCS) implementation. The next steps are: to develop a time reporting system linked to our financial system to allow the TSB to measure the costs of various activities and results; and to survey the majority of the persons who have a direct interest in the TSB’s findings to gain a better understanding of the strengths and weaknesses of the organisation. It is expected that 2 or 3 years may be required to fully implement and to report on the basis of the new performance management framework. The TSB wants to ensure that performance measurement is done not only to satisfy government requirements, but also to assist in the planning and management of operations.

The TSB is encountering some difficulty in defining good performance measurement indicators due to the fact that it is but a single (small) player among many with responsibilities for advancing transportation safety. It is virtually impossible to measure accurately the impact of the TSB on transportation safety. No two investigations are identical. Some lead to significant safety improvements, and some do not. There is no good way to link costs incurred by the TSB directly to specific improvements in transportation safety. More work is needed in this area for the TSB be able to meaningfully report on its performance.

More work is needed in this area for the TSB be able to meaningfully report on its performance.

| | | |
|-----|----------------------------------------------------------------------|---|
| 2.3 | Implementation of government-wide strategies and initiatives. | ✓ |
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Our Approach:

The TSB constantly monitors government priorities, strategies and initiatives. The TSB participates in all mandatory government-wide initiatives. The TSB also joins other government initiatives whenever opportunities for increased efficiency arise. The TSB also includes innovation and a measured risk taking approach in its management style.

Our Accomplishments:

The implementation of UCS began in earnest in August of 1998 with training sessions for managers and employees on the new classification standard, both on how to write and evaluate positions. With the advent of the Swissair accident, all the planning for UCS had to be re-designed. More managers and staff had to be trained to replace those that were assigned to the investigation, trained consultants had to be brought in to write descriptions for managers who no longer had time to concentrate on the exercise. The TSB knew that costs would be much higher than the Treasury Board Secretariat estimations but did not foresee how significant those costs would be for an organisation of its size. Contrary to many other small agencies, the TSB is very operational and has many specialized positions (21 groups under the current classification regime) that are difficult to describe to an outsider. The cost to the TSB for the implementation of UCS till the end of fiscal year 1998-1999 is in the area of \$334,000 not including the salary costs of managers and employees involved. Notwithstanding the many challenges the TSB has had to face, it has met the deadlines imposed by the TBS and plans to continue to do so. In the exercise, employees were trained to participate in writing their job descriptions and they and their unions were kept up to date on developments through a series of newsletters.

The TSB is still an active proponent of local shared support services but has not had time to pursue any new endeavours in this area. The TSB continues to contract out the management of its library services to the satisfaction of its clients.

The TSB actively participates in the government shared systems initiative. The TSB currently utilizes three of the approved shared systems for the management of its human resources and finances. The TSB is also an active member of the inter-departmental cluster groups for these systems.

| | | |
|-----|----------------------------------------------------------------------------------------|---|
| 2.4 | Recruitment and on-going development of suitably skilled and experienced staff. | □ |
|-----|----------------------------------------------------------------------------------------|---|

Our Approach:

The TSB has defined competency profiles for key positions. Personnel are hired on the basis of skills and abilities. Considerable training and development is provided through outside sources although some small portion is done in-house due to the unique and specialized nature of the work to be performed. On-going training is provided to ensure that employees maintain and develop their knowledge and skills as the industry changes.

Our Accomplishments:

In 1998-1999 the TSB invested \$583,000 in training and development activities; an average of \$2,687 per full-time employee. In accordance with the TSB 2000 project, the TSB also established clear and specialize training needs for employees to better grasp the investigative process through all its stages. Work that was fragmented into different units will now be done by teams working together with a methodology developed by its staff called Integrated Safety Investigation Methodology (ISIM). Having developed the framework the TSB hired consultants to develop a training package for all current and future employees. Training in this, in project management and team leadership as they related to investigations are planned for the coming fiscal year.

Employee retention is a significant problem for the TSB. The generally lower government salary scales for specialists compared with industry makes it difficult for the TSB to recruit and retain highly skilled professionals. The TSB must therefore constantly renew itself and develop new personnel. This problem will require particular attention over the next few years if the TSB is to increase its overall skill levels and maintain its readiness to respond to occurrences. The need to have back up capacity has been felt particularly with massive resource requirements for the Swissair investigation and in some measure with UCS.

The ability to recruit and retain staff has been curtailed by increased workloads and reduced levels of resources in both the operations areas and in the Human Resources area. In 1998-99 the TSB recruited 18 investigators and 13 left to pursue other career alternatives.

In 1998-1999 the TSB recruited 18 investigators and 13 left to pursue other career alternatives.

Section IV: Consolidated Reporting

IV.1 Year 2000 Readiness

The TSB has a year 2000 steering committee, with three teams to coordinate its year 2000 readiness efforts. The steering committee meets regularly to monitor progress with respect to the plans. The first team is responsible for all computer hardware, software and networks. The second team is responsible for all embedded systems and office equipment. The third team is responsible for all engineering equipment and applications. As of August 20th, 1999, the TSB completed the compliance testing/verification of all computer hardware, software and networks, as well as all embedded systems and office equipment. No major problems have been identified. A detailed plan has been prepared to address the situation. Five out of seven of the mission critical departmental systems have been verified fully compliant. The other two will be verified fully compliant by 30 September 1999. All other systems have been tested and minor fixes will also be completed by 30 September 1999. Work on engineering equipment and applications is progressing more slowly. The Year 2000 Steering Committee will continue to review progress. An independent audit has been completed on the TSB's readiness for Year 2000. This audit has confirmed only minor issues need further action. The TSB is at this time completing a detailed contingency plan.

IV.2 Statutory Annual Reports and Other Departmental Reports

Under its legislation the TSB must report to Parliament on its activities, findings and recommendations for each fiscal year (this is a change brought about in 1998 by changes to the TSB enabling legislation; the previous legislation stipulated a calendar year). The *1998-1999 Annual Report to Parliament* is available from the TSB upon request. The legislation also requires that the Auditor General of Canada conduct an annual audit of the TSB's accounts and transactions and that the audit report be laid before each House of Parliament. The 1998-1999 financial statements and audit report are also available from the TSB upon request.

The TSB reports publicly on all its investigations. All TSB investigation reports since 1995 are available on the TSB web site. The TSB also publishes periodic statistical reports for each one of the four transportation modes. These reports are also available on the TSB web site. Finally, the TSB publishes a periodic safety magazine titled *Reflexions*.

Section V: Financial Performance

V.1 Financial Performance Overview

The TSB started the year with authorities of \$18.9 million. Supplementary Estimates in the amount of \$36.9 million were then approved for the carry-forward of the previous year's lapse, collective bargaining adjustments and the bulk for the extraordinary costs of the Swissair Flight 111 investigation thereby increasing total authorities to \$55.8 million. The Supplementary Estimates approved for the Swissair investigation covered the incremental costs for all federal departments involved in the investigation at the behest of the TSB. In 1998-1999, the TSB spent \$54.0 million of its \$55.8 million total authorities. The lapse is due to \$1.5 million not spent as anticipated on the Swissair investigation and a lapse of approximately \$0.240 million due primarily to delays in other activities as a result of the Swissair investigation and UCS implementation.

The total expenditures of the TSB, minus Swissair, represent an approximative cost of \$0.66 per Canadian citizen. With Swissair investigation costs included, for all departments, the number rises to \$1.78 per Canadian citizen. Still a small price to pay for maintaining the capability to investigate major failures in four different modes of the national transportation system.

V.2 Financial Summary Tables

The following tables are the only ones that apply to the TSB:

Table 1: Voted Appropriations

Table 2: Comparison of Planned to Actuals

Table 3: Historical Comparison of Planned to Actuals

Table 10: Capital Spending

Financial Table 1: Voted Appropriations

| Financial Requirements by Authority (millions of dollars) | | | | |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------|------------------------------------------------|--------------------------------------------|----------------------------------|
| Vote | | 1998- 1999 Planned Spending | 1998-1999 Total Authorities | 1998- 1999 Actual |
| Canadian Transportation Accident Investigation and Safety Board | | | | |
| 15 | Operating expenditures | 18.9 | 55.8 | 54.1 |
| (S) | Contributions to Employee Benefit Plans | 3.1 | 3.2 | 3.2 |
| Total Department | | 22 | 59 | 57.3 |
| <p>Total Authorities are Main Estimates plus Supplementary Estimates plus other authorities. Note: Total Authorities and Actual expenditures are significantly higher than Planned Spending due to the Swissair accident investigation and new collective bargaining obligations.</p> | | | | |

Financial Table 2 : Comparison of Planned to Actuals

| Departmental Planned versus Actual Spending (millions of dollars) | | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|--------------------------|---------------|
| Business Line | 1998-1999 | | |
| | Planned Spending | Total Authorities | Actual |
| FTEs | 229 | 224 | 217 |
| Operating | 21.5 | 57.2 | 54.9 |
| Capital | 0.5 | 1.8 | 2.4 |
| Voted Grants & Contributions | - | - | - |
| Subtotal: Gross Voted Expenditures | 22 | 59 | 57.3 |
| Statutory Grants and Contributions | - | - | - |
| Total Gross Expenditures | 22 | 59 | 57.3 |
| Less: | | | |
| Respendable Revenues | - | - | - |
| Total Net Expenditures | 22 | 59 | 57.3 |
| Other Revenues and Expenditures | | | |
| Non-Respendable Revenues | - | - | - |
| Cost of services provided by other departments | 2.6 | 2.6 | 2.7 |
| Net Cost of the Program | 24.6 | 61.6 | 60 |
| <p>Notes: 1) Total Authorities and Actual expenditures are significantly higher than Planned Spending due to the Swissair accident investigation and new collective bargaining obligations. 2) For Respendable Revenues: <i>These revenues were formerly called "Revenues Credited to the Vote"</i> 3) For Non-Respendable Revenues: <i>These revenues were formally called "Revenues credited to the (CRF)"</i></p> | | | |

Financial Table 3: Historical Comparison of Planned to Actuals

| Historical Comparison of Departmental Planned versus Actual Spending (millions of dollars) | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------|-----------------------------|------------------------------|---------------|
| | Actual 1996- 1997 | Actual 1997- 1998 | 1998-99 | | |
| | | | Planned Spending | Total Authorities | Actual |
| Canadian Transportation Accident Investigation and Safety Board | 23.3 | 22.7 | 22 | 59 | 57.3 |
| Total | 23.3 | 22.7 | 22 | 59 | 57.3 |
| <p>Total Authorities are Main Estimates plus Supplementary Estimates plus other authorities. Note: Total Authorities and Actual expenditures are significantly higher than Planned Spending due to the Swissair accident investigation and new collective bargaining obligations.</p> | | | | | |

Financial Table 10: Capital Spending

| Capital Spending (millions of dollars) | | | | | |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------|----------------------------------|-----------------------------|------------------------------|---------------|
| | | | 1998-1999 | | |
| | Actual 1996- 1997 | Actual 1997- 1998 | Planned Spending | Total Authorities | Actual |
| Canadian Transportation Accident Investigation and Safety Board | 1.3 | 1.1 | 0.5 | 1.8 | 2.4 |
| Total | 1.3 | 1.1 | 0.5 | 1.8 | 2.4 |
| <p>Total Authorities are Main Estimates plus Supplementary Estimates plus other authorities. Note: Total Authorities and Actual expenditures are significantly higher than Planned Spending due to the Swissair accident investigation and new collective bargaining obligations.</p> | | | | | |

Section VI: Other Information

VI.1 Contact for Further Information and Departmental Web Site

For further information you may contact:

Gertrude René de Cotret
Director, Corporate Services
Transportation Safety Board of Canada
Place du Centre
200 Promenade du Portage
4th Floor
Hull, Quebec
K1A 1K8

E-Mail:

gertrude.rene_de_cotret@tsb.gc.ca
Telephone: (819) 994-8001
Facsimile: (819) 997-2239

Jean L. Laporte
Chief, Finance, Planning and
Administration
Transportation Safety Board of Canada
Place du Centre
200 Promenade du Portage
4th Floor
Hull, Quebec
K1A 1K8

E-Mail: jean.laporte@tsb.gc.ca
Telephone: (819) 994-8004
Facsimile: (819) 997-2239

Additional information is also available on the TSB departmental web site at:
<http://bst-tsb.gc.ca>

VI.2 Legislation and Associated Regulations Administered by the Transportation Safety Board of Canada

| | |
|--------------------------------------------------------------------------------------------------|---------------------|
| The TSB has sole responsibility to Parliament for the following Acts and associated Regulations: | |
| <i>Canadian Transportation Accident Investigation and Safety Board Act</i> | R.S.C., 1998, c. 20 |

VI.3 Statutory Annual Reports and Other Departmental Reports

Under its legislation the TSB must report to Parliament on its activities, findings and recommendations for each fiscal year (this is a change brought about in 1998 by changes to the TSB enabling legislation, the previous legislation stipulated a calendar year). The *1998-1999 Annual Report to Parliament* is available from the TSB upon request. The

legislation also requires that the Auditor General of Canada conduct an annual audit of the TSB's accounts and transactions and that the audit report be laid before each House of Parliament. The 1998-1999 financial statements and audit report are also available from the TSB upon request.

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Appendices

A - Description of TSB Investigation Process

B - TSB Cooperation Agreements (MOUs)

C - Internet Addresses for Other Organizations

Appendix A

Description of TSB Investigation Process

The TSB has the discretion to choose which occurrences to investigate. In essence, the TSB's policy is to investigate the occurrences which have a reasonable potential to result in safety action or which generate a high degree of public concern for transportation safety.

The TSB's operating philosophy is one of openness, fairness, competence and integrity. Thus, investigations and public reports are designed to maximize information to advance safety while respecting the rights of those involved.

Occurrence Classification Policy

Approximately 3,500 transportation occurrences are reported to the TSB each year in accordance with its reporting requirements. Practical considerations dictate that only a small proportion of these be investigated. Numerous occurrences warrant a TSB investigation in that they offer potential for acquiring new knowledge of the underlying safety deficiencies compromising safe transportation operations. But most reported occurrences by themselves offer little scope for adding to the TSB's knowledge of the underlying safety deficiencies. However, a broad examination of sets of such occurrences involving similar phenomena or contributory factors is at times warranted.

Effective resource management and the advancement of transportation safety will depend upon the TSB's timely identification of individual occurrences, as well as unsafe situations or conditions, with potential for significant safety payoff. To this effect, the TSB has developed a five level classification system. Each occurrence is classified based on a risk assessment process and a decision is made whether to investigate or not.

The primary criterion for determining if an occurrence in any mode will be investigated is whether or not such analysis is likely to lead to a reduction of risk to persons, property, or the environment. Other criteria include:

- consideration of any TSB obligations or commitments under international agreements, assistance to the provinces or other nations, etc.
- consideration of the degree of public expectation of a TSB investigation.

The complete occurrence classification policy and the detailed considerations for the assessment of risk are described on the TSB Internet site.

Investigation Process

Field Phase

The number of investigators deployed to an occurrence site to conduct an investigation varies from one investigator for a relatively straight forward investigation to upwards of 20 to 30 for a major investigation*. The field phase can last from one day to several weeks or more. In all cases, an investigator-in-charge is appointed to lead the investigation. Generally, the field phase includes examination of the occurrence site, field examination of the equipment, vehicle or wreckage, witness interviews, the collection of pertinent documents and the selection and removal of specific wreckage items for further examination.

Post-Field Phase

A large number of activities take place from the time that the investigation team returns from the occurrence site until the investigator-in-charge produces the initial draft report. This phase can take up to six months depending on the size and complexity of the investigation. Some of the activities which may be conducted during this phase are collection and examination of all pertinent Transport Canada / National Energy Board, company, vehicle and other records, interviews with company and Transport Canada / National Energy Board personnel, laboratory examination of selected wreckage, readout and analysis of recorders, simulation work and review of autopsy and toxicology reports. The investigator-in-charge, with the support of other investigators on the team, is responsible for collating and analysing all the information collected and for producing a draft report.

Report Production

The draft investigation report is reviewed by the Board and may be accepted as the Board's draft report, amended or returned for further staff work. Once approved the Board's draft report is sent on a confidential basis to "persons with a direct interest in the findings" for review and comment. Comments received from persons with a direct interest are considered by the Board and may result in changes to the report. This process ensures both fairness and the accuracy of the report. The occurrence report is then finalized, printed and released to the public. The TSB performance standard is to release reports within one year of the date of the occurrence. However, occurrence reports for major, very complex or unusual investigations may take longer.

* Note: Swissair is outside the scope of the normal process and at the height of the activity, the TSB investigator-in-charge was directing or coordinating the efforts of approximately 4,000 government employees, contractors and volunteers. The field phase for this investigation is continuing beyond the one year mark.

Key Safety Issues List

The TSB investigates and analyses specific accidents and incidents. It also monitors general trends and emerging safety issues, and maintains lists of significant safety concerns. There are a number of areas where the risk to safety is sufficient to warrant extra efforts by the transportation industry and government, to address these risks and reduce further accidental losses. The TSB believes that working together, participants in the Canadian transportation community can reduce or eliminate the safety deficiencies associated with these key safety issues. Each year, in conjunction with its Annual Report, the TSB reports this list of significant safety issues to Parliament. The most recent list of key safety issues is accessible on the TSB Internet site.

Appendix B

TSB Cooperation Agreements

| Cooperation With: | Area of Cooperation: |
|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Coroners (all 10 provinces and 2 territories with 5 signed agreements and the rest on an informal basis) | - Coordination of investigation activities |
| National Defence | - Coordination of investigation activities - Provision of services by Quality Engineering Test Establishment |
| Air Alliance, Air BC, Air Canada, Air Transat, Canada 3000, Canadian Airlines, First Air, Royal Air, Westjet | - Provision of cockpit familiarization training on large aircraft |
| Royal Canadian Mounted Police | - Coordination of investigation activities - Police protection of some sites |
| Transport Canada | - Exchange of information - Coordination of safety related activities |
| National Research Council | - Collaboration on flight recorder software development and engineering analysis |
| Human Resources Development Canada | - Exchange of information - Coordination of investigation activities (re: Labour Code) |
| National Energy Board | - Exchange of information - Coordination of investigation activities |
| St. Lawrence Seaway Authority | - Exchange of information |
| Canada-Nova Scotia Offshore Petroleum Board | - Exchange of information - Coordination of investigation activities |
| Canada-Newfoundland Offshore Petroleum Board | - Exchange of information - Coordination of investigation activities |
| International Civil Aviation Organization | - Provision of TSB services for international investigations |

| Cooperation With: | Area of Cooperation: |
|------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
| Canadian Heritage / Canadian Conservation Institute | - Provision of emergency treatment services for the preservation of documents |
| Fisheries and Oceans | - Exchange of information |
| Environment Canada | - Provision of meteorological services for TSB investigations |
| Health Canada | - Provision of medical assessments for TSB investigators - Provision of investigation support services |
| Natural Resources Canada | - Provision of geological survey and terrain sciences services |
| Transportation Development Centre | - Use of TSB flight recorder playback and analysis software |
| Ministry of Transportation - Province of Ontario (Negotiations currently underway with Quebec, Nova Scotia, New Brunswick, and Manitoba) | - Provision of short line railway accident investigation services by the TSB |

Appendix C

Internet Addresses of Other Organizations

More information on transportation safety in Canada is available from other federal government agencies who also play a role in this area. The Internet addresses for the main organizations are as follows:

| | |
|---------------------------------------------------|---------------------------------------------------------------------|
| Transport Canada | http://www.tc-gc.ca |
| National Energy Board | http://www.neb.gc.ca |
| Fisheries and Oceans - Canadian Coast Guard | http://www.ccg-gcc.gc.ca |
| Canadian Transportation Agency | http://www.cta-otc.gc.ca |
| Royal Canadian Mounted Police | http://www.rcmp-grc.gc.ca |
| Human Resources Development Canada | http://www.hrdc-drhc.gc.ca |
| National Defence | http://www.dnd.ca |

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