



ESTIMATES

Transportation Safety Board of Canada

**2000-2001
Estimates**

Part III – Report on Plans and Priorities

Canada

The Estimates Documents

Each year, the government prepares Estimates in support of its request to Parliament for authority to spend public monies. This request is formalized through the tabling of appropriation bills in Parliament. The Estimates, which are tabled in the House of Commons by the President of the Treasury Board, consist of three parts:

Part I – The Government Expenditure Plan provides an overview of federal spending and summarizes both the relationship of the key elements of the Main Estimates to the Expenditure Plan (as set out in the Budget).

Part II – The Main Estimates directly support the *Appropriation Act*. The Main Estimates identify the spending authorities (votes) and amounts to be included in subsequent appropriation bills. Parliament will be asked to approve these votes to enable the government to proceed with its spending plans. Parts I and II of the Estimates are tabled concurrently on or before 1 March.

Part III – Departmental Expenditure Plans which is divided into two components:

- (1) **Reports on Plans and Priorities (RPPs)** are individual expenditure plans for each department and agency (excluding Crown corporations). These reports provide increased levels of detail on a business line basis and contain information on objectives, initiatives and planned results, including links to related resource requirements over a three-year period. The RPPs also provide details on human resource requirements, major capital projects, grants and contributions, and net program costs. They are tabled in Parliament by the President of the Treasury Board on behalf of the ministers who preside over the departments and agencies identified in Schedules I, I.1 and II of the *Financial Administration Act*. These documents are to be tabled on or before 31 March and referred to committees, which then report back to the House of Commons pursuant to Standing Order 81(4).
- (2) **Departmental Performance Reports (DPRs)** are individual department and agency accounts of accomplishments achieved against planned performance expectations as set out in respective RPPs. These Performance Reports, which cover the most recently completed fiscal year, are tabled in Parliament in the fall by the President of the Treasury Board on behalf of the ministers who preside over the departments and agencies identified in Schedules I, I.1 and II of the *Financial Administration Act*.

The Estimates, along with the Minister of Finance's Budget, reflect the government's annual budget planning and resource allocation priorities. In combination with the subsequent reporting of financial results in the Public Accounts and of accomplishments achieved in Departmental Performance Reports, this material helps Parliament hold the government to account for the allocation and management of public funds.

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Transportation Safety Board of Canada

**2000-2001
Estimates**

A Report on Plans and Priorities

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Transportation Safety Board of Canada

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President
Queen's Privy Council for Canada

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Section I: Chairman's Message

The financial year 2000-2001 marks the 10th anniversary of the Transportation Safety Board of Canada (TSB). As we prepare to celebrate this important milestone for the TSB, we must take a few moments to reflect on the accomplishments of the past and to look forward at the challenges of the new millennium. Despite a few difficulties encountered along the way, I believe the TSB has been very successful in identifying safety deficiencies and in conveying key safety messages to the public, industry and regulators. Numerous safety actions have been taken to reduce risks over the past 10 years, in part as a result of the work of the TSB. The years ahead will however continue to present on-going and new challenges for the TSB.

In the aftermath of recent serious accidents, like Swissair flight 111 and Egyptair 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 agency have also increased significantly. Both the media and next-of-kin have an enormous thirst for up-to-date factual information; most wish to follow closely the progress of the investigation. Given the loss suffered by next-of-kin, great care must be exercised in communicating with them. Fulfilling these evolving needs is proving to be a major challenge.

Over the past two years I have personally participated in the presentation to the public of a number of the Board's final reports. I believe that this public presence has enhanced Canadians' understanding of the work of the TSB in addressing transportation safety issues. Over the coming year I intend to continue participating in such events.

The rapid pace of technological change in the industry also continues to represent important challenges for the TSB. Technical staff must ensure that they maintain and enhance their knowledge in order to keep up with changes in the industry. The TSB values its personnel as its most important resource and will continue to invest significantly in employee training and development. Sustained investments in the on-going review and improvement of work methodologies will also remain a priority for the organization.

The TSB has recently undertaken a number of initiatives to strengthen its management framework and to implement effective performance measurement. For example, the TSB is committed to implementing systematic quality assurance processes and the new Financial Information Strategy. Such initiatives will provide managers at all levels with more information that can be used to manage our operations effectively and efficiently.

The Swissair flight 111 investigation has underlined the vulnerability of the TSB. Much other work has been given a lower priority while resources were concentrated on this

major investigation. 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 investigation of such magnitude as the Swissair accident. I have undertaken some discussions with senior government officials on this matter. In the coming months, I will propose some options to the government to deal with these issues.

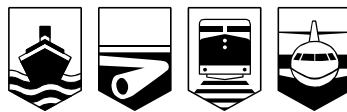
Section II: Departmental Overview

A. Mandate, Roles and Responsibilities

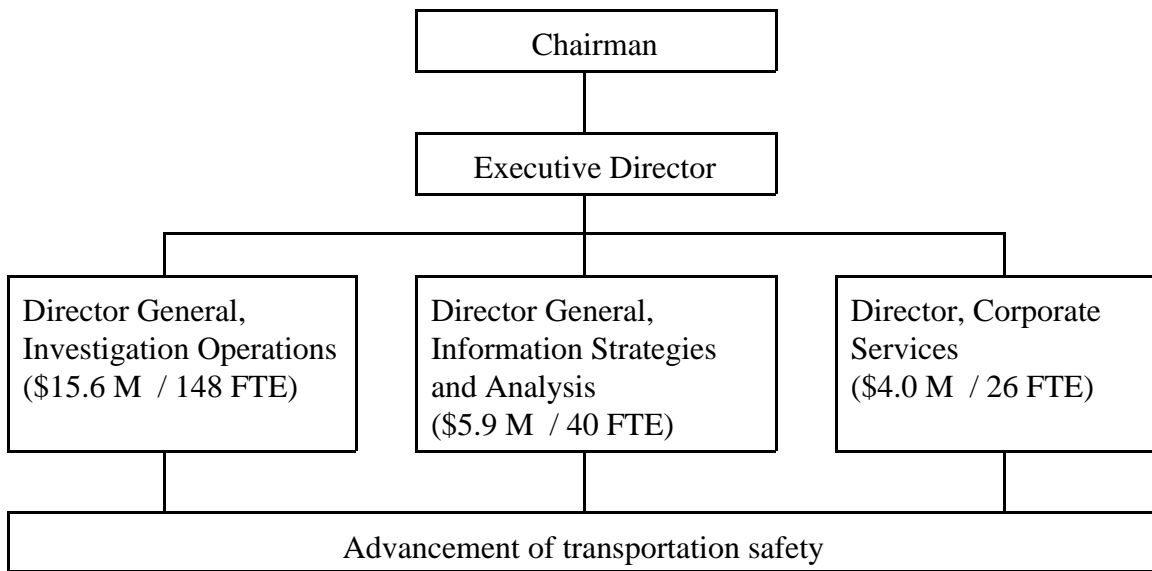
The Transportation Safety Board of Canada (TSB) is an independent agency created in 1990 by an Act of Parliament (*Canadian Transportation Accident Investigation and Safety Board Act*). It operates at arm's length from other government departments and agencies such as Transport Canada, the Canadian Transportation Agency and the National Energy Board to ensure that there are no real or perceived conflicts of interest. Under the 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.



The TSB has only one business line: the advancement of transportation safety. The Chairman, assisted by the Executive Director and three senior managers, is responsible for all activities associated with this business line.



B. Agency Objective

To advance transportation safety.

C. External Factors Influencing the Agency

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

The marine mode involves approximately 46,000 Canadian-registered vessels and some 38,000 trips by foreign commercial ships in Canadian waters annually. Commercial trade produces over 17 million vessel-kilometres in Canadian waters. Marine traffic in Canada includes the transportation of about 40 million passengers annually and over 350 million tons of cargo for domestic and international markets representing 38% of all cargo carried in Canada by all modes of transportation. In addition, the commercial fishing industry had over 25,000 licensed vessels last year.

There are some 30 federally regulated railways, operating close to 40,000 miles of track. The system generates over 360 billion 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 under federal jurisdiction 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.

In addition the TSB faces particular challenges in delivering its program:

Public Interest in Transportation Safety: Transportation safety has always been a matter of public concern in Canada. This is largely due to the significant social and economic role that the transportation system plays in this country.

Marine safety receives considerable public and media attention because of occurrences both in Canada and abroad. Capsizing of passenger ferries, groundings of large oil tankers or large cruise ships, and the losses of several large bulk carriers in foreign waters and in Canadian waters have drawn public attention to marine safety and related environmental issues. Canada is bounded by three oceans and has considerable marine passenger traffic, including extensive ferry operations and an increasing number of port calls by cruise ships. Our fishing industry, while reduced, remains considerable.

Recent accidents involving rail passenger service have increased the public expectations for a level of passenger safety commensurate with the aviation industry. In populated areas, there is always considerable concern about railway safety because trains carry dangerous commodities and toxic substances. Another ongoing public concern is safety at level road crossings. Freight train derailments on mainline tracks have also received considerable media attention.

In the area of pipeline safety, there continues to be significant interest in failures of natural gas pipelines.

In aviation, while accident rates have held steady, around the world the absolute number of major accidents is increasing with increased flying activity rates. In Canada public and industry interest has recently been focussed on a number of recent high-profile aviation accidents in Canada and the United States, the best examples of this are: the crash of Swissair flight 111 into the ocean near Peggy's Cove and the crash of the Egyptair flight off the American East coast. All of these have also raised the Canadian public's level of concern about aviation safety. The media attention and public concern about air accidents around the world is expected to continue or increase for the next few years.

Government Policy and Industry Environment: In recent years, partly as a result of government initiatives and partly in response to commercial imperatives, various changes have occurred that may influence transportation safety. Among the changes, are the privatization of Crown corporations and the commercialization of many Transport Canada operations in all modes. The highly competitive environment in all elements of the transportation industry and the demands by the public and shippers for an almost accident-free transportation system are also significant considerations. The recent turmoil associated with Canada's major air carriers has also increased public concerns about aviation safety.

Impact of Technology on Transportation: Over the last 30 years, 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.

Level of Activity: More than 3,000 transportation occurrences are reported each year in accordance with federal reporting requirements. The TSB bases its decision to investigate on its Occurrence Classification Policy (see TSB web site at <http://tsb.gc.ca> for details). The prime criterion for deciding to investigate is whether an investigation is likely to lead to a reduction in risk to persons, property or the environment. Government-wide reductions in resources over the past number of years have led the TSB to review this classification policy. The TSB has now withdrawn from investigating some accidents less likely to result in safety actions, even when they involve fatalities. This has resulted in some adverse public reaction and the TSB has come under increased public scrutiny.

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. The TSB competes in hiring these people, mostly from outside the public service, who bring the required technical skills and knowledge in a given mode and then spends two years training them to become investigators. This training, which is not available in traditional institutions of learning, combined with the experience in investigating makes our investigators in all occupational groups, at all levels, very attractive to other government departments and to the industry. Factoring in that the government has difficulty competing with the salaries and benefits offered by the industry adds another dimension to the problem. The TSB must also contend with employee insecurity resulting from limited resources and increasing workloads over the past number of years, perceived internal pay inequities, and the current implementation of the Universal Classification System.

D. Agency Planned Spending

(thousands of dollars)	Forecast Spending 1999-2000*	Planned Spending 2000-2001	Planned Spending 2001-2002	Planned Spending 2002-2003
Budgetary Main Estimates	20,294	21,025	20,811	20,811
Contributions to Employee Benefit Plans	2,986	3,061	3,038	3,038
Total Main Estimates	23,280	24,086	23,849	23,849
Adjustments to Planned Spending	15,787			
Net Planned Spending	39,067	24,086	23,849	23,849
<i>Plus:</i> Cost of services received without charge	2,489	2,392	2,392	2,392
Net Cost of Program	41,556	26,478	26,241	26,241

Full-Time Equivalent	222	230	230	230
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* Reflects best forecast of total planned spending to the end of the fiscal year and includes incremental costs of \$14,426,000 for the investigation of the Swissair flight 111 accident.

Section III: Plans, Results and Resources

The TSB's Planning, Reporting and Accountability Structure identifies a single business line: the advancement of transportation safety.

A. Business Line Objective

The business line objective is to advance transportation safety by conducting independent investigations of transportation occurrences, by analysing and identifying safety deficiencies in the system and by reporting publicly on its findings.

B. Business Line Description

The independent investigation, analysis, study, and public reporting of transportation accidents, incidents or hazardous situations/conditions involving the operation of an aircraft, ship, railway rolling stock, or pipeline in the federally regulated elements of Canada's air transportation, marine, rail and pipeline systems for the purpose of: making findings as to their causes and contributing factors, identifying safety deficiencies and, making safety recommendations designed to eliminate or reduce those transportation safety deficiencies identified.

C. Key Results Commitments, Planned Results, Related Activities and Resources

Key Results Commitment

The TSB is committed to provide Canadians with advancements in safety through independent, objective and timely analysis of safety failures in the federally regulated transportation system.

Planned Results

- 1) Identification of safety failures in the marine, rail, pipeline and air transportation systems.
- 2) Reduction in risks to persons, property and the environment through the use of investigation findings by governments and industry.

- 3) Public access to safety information and recommendations.
- 4) Satisfaction with quality and timeliness of findings and recommendations.
- 5) Awareness by Canadians of the Board's role in advancing transportation safety.
- 6) National and international recognition of the Board as an authoritative and independent resource in the area of transportation safety.

Related Activities

TSB2000 Implementation (linked to planned results 1, 2, 4 and 6)

In 1998 the TSB launched an initiative called TSB2000 to improve its operational effectiveness and efficiency. An integrated safety investigation methodology was developed to systematically integrate the TSB's efforts in determining findings as to causes and contributing factors, identifying safety deficiencies, assessing the associated risks to safety in the national transportation system, evaluating options for mitigating those risks and for communicating the resultant safety message in the most convincing way. The TSB has recently trained all investigators in this new methodology. This training will be on-going as new investigators are recruited. In addition to this training, the TSB will have training packages customized in the areas of: project management, team leading and team building. Over the upcoming year efforts will be made to fully implement this new methodology for all new investigations.

Quality assurance has been identified as a key element essential to the success of the TSB. The TSB will therefore be implementing a structured and systemic approach to quality assurance. A detailed concept of operations has been developed and implementation will start during the upcoming year. Designated managerial and staff positions will be assigned primary responsibility for quality assurance and performance measurement. Benchmarks against which performance can be monitored will be established. Quality audit processes and systems will be defined.

Performance Management Framework (linked to planned results 4, 5 and 6)

Development of a comprehensive performance management framework is well on its way. The TSB will link performance measurement to the internal quality assurance functions and will integrate performance measurement into the on-going management of operations. The TSB wants to ensure that performance measurement will first assist in the planning and management of operations, and secondly satisfy government-wide reporting requirements.

Work will be done to define qualitative and quantifiable performance indicators. However, the TSB has some difficulty in defining good performance measurement indicators as no two investigations are identical. Some lead to significant safety improvements, and some do not. Furthermore, it is virtually impossible to quantify accurately the direct or even indirect impact of the TSB on transportation safety due to the fact that it is but a single (small) player amongst many with responsibilities for advancing transportation safety.

Surveys will also be conducted to measure the degree of satisfaction with the TSB's work by specific segments of the public and industry. The first survey will be targeted to persons with a direct interest in the work of the TSB. Further surveys may then be done to assess the views of others such as: the media, other levels of government, persons associated with accidents not investigated by the TSB, unions, industry associations, etc...

The TSB is also working on the implementation of the government's new financial information strategy, the new human resources management framework, the universal classification system, and the modernization of the comptrollership function. All these government-wide initiatives have been identified as priorities for the TSB and will help in establishing a solid management framework against which performance can be measured and reported. Significant efforts will be made over the next 18 months in order to fully implement these important initiatives.

Enhanced Communications (linked to planned results 3, 4 and 5)

In conjunction with the implementation of the integrated safety investigation methodology, the TSB will make greater use of various tools such as: interim recommendations, safety advisories, communiques, safety digests, and information letters to convey important safety information on a timely basis. While final investigation reports will continue to be the TSB's main focus, these other means of communication will be used more effectively to inform the public, industry and regulators and incite them to undertake safety actions as quickly as possible.

The Chairman will continue to be visible at the beginning of investigations in explaining the role of the TSB in the wider context of transportation safety, how we carry out our work and how our mandate may differ from those of other countries. He will increasingly be present when Board reports are issued publicly to explain how the Board reached its conclusions and to explain why change is necessary and by whom it should be carried out.

Changes to the TSB web site are making the search for specific information more user-friendly, e.g. in the case of Swissair, a specific page was created and is regularly updated to allow those most interested in this accident to have the most recent information on the progress of the investigation. In this planning year further changes will be made to the web site to enhance the search capability and make it even more user-friendly.

The TSB will continue its work with key government and industry partners on the reciprocal exchange of data. The TSB plans to consolidate its role as the official Canadian repository of transportation accident/incident data by ensuring that this data can be made available to others when and as required. Effective use of technology and telecommunications systems will be key in improving accessibility to this data. The TSB also has on-going initiatives to ensure data quality and data integrity. These initiatives will be integrated into the new systematic quality assurance program.

The TSB introduced more frequent and elaborate communications with the families of the victims of the Swissair flight 111 accident (e.g. e-mail distribution lists, family briefings, family visits at the operations hangar, videos). These actions were taken as a direct result of increasing demands. More and more next-of-kin of accident victims request comprehensive and detailed information about the investigation and the investigation results. During the planning period, the TSB will review and assess the experience with the Swissair investigation and a number of other cases in order to adjust its communication strategies to better respond to the evolving needs of next-of-kin.

Improve Readiness Capacity (linked to planned results 1, 2, 3, 4 and 6)

The recent Swissair investigation has demonstrated that the TSB human resources are very thinly spread. The TSB will have to recruit additional staff in the coming years to ensure that sufficient trained staff is available to respond to a major occurrence while maintaining a reasonable level of day-to-day activity. Since newly recruited staff need approximately two years of training and on-the-job experience to perform as full-fledged investigators, this problem will only be alleviated with time. The TSB will also work on the development of a succession plan for all its executive level positions as a number of the current incumbents will be eligible for retirement in the next few years.

The TSB will begin recruiting more staff who have the knowledge, skills and abilities, and the capacity to learn in an ever-changing environment. This is particularly important as changes occur at an accelerated pace and as technology plays a more and more important role in the transportation industry. TSB investigators must constantly keep abreast of changes. The TSB current aging workforce faces an increasingly important challenge in this regard. Rejuvenation of the workforce is therefore essential in the next few years if the TSB is to remain capable of effectively fulfilling its mandate.

Over this planning period the TSB will be reviewing its resource requirements and will be discussing various options with the Treasury Board Secretariat. Key questions will have to be addressed to clearly define what is expected of the TSB and to ensure that the TSB is appropriately resourced to effectively fulfill these expectations.

Resources (\$000)

Related Activities	Dollars	% of Budget	FTEs
Investigations	\$ 18,535	70 %	159
Communication and Report Production	\$ 1,059	4 %	15
Training	\$ 1,059	4 %	2
Other Activities	\$ 5,825	22 %	54
Total	\$ 26,478	100%	230

D. Financial Information**Net Cost of Program for the Estimates Year**

(thousands of dollars)	Total
Net Planned Spending	24,086
<i>Plus: Services Received without Charge</i>	
Accommodation provided by Public Works and Government Services Canada	1,480
Contributions covering employer's share of employees' insurance premiums and expenditures paid by Treasury Board Secretariat	879
Workers' compensation coverage provided by Human Resources Development Canada	18
Audit services provided by the Office of the Auditor General	15
	2,392
2000-2001 Net Cost of Program	26,478

Section IV: Other Information

Additional information about the Transportation Safety Board of Canada and its activities is available on the TSB's Internet site at <http://tsb.gc.ca> or by contacting us at:

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