

RISK ASSESSMENT: REDUCTION OF REGULATORY AUDIT ACTIVITY DURING SMS IMPLEMENTATION

SUMMARY REPORT

1. Overview

The subject of the risk assessment is to consider what risks are involved in a reduction of regulatory audit activity (National Audit Program as per the FOIP) during the implementation of SMS over the next five years (2005-2010).

National Audit Program (NAP) consists primarily of efforts from the following branches in Civil Aviation:

Aircraft Certification, Commercial and Business Aviation (CBA), Aircraft Maintenance and Manufacturing (M&M), Aerodromes and Air Navigation (A&AN), Headquarters (HQ) and regions

Canadian Aviation Document Holders who form the NAP

Air operators (3 year cycle): Auditors of these organizations include: CBA, M&M, Aircraft Certification personnel

1. First Air (2004/05)
2. Air Canada (2004/05)
3. Aircraft Services (2005/06)
4. West Jet (2005/06)
5. Air Transat (2005/06)
6. Canadian Helicopters (2005/06)
7. Sky Service (2006/07)
8. Air Canada Jazz (2006/07)

Aerodromes (5 year audit cycle): Auditors of these organizations include: only Aerodromes personnel

9. Vancouver International Airport (2004/05)
10. Calgary International Airport (2005/06)
11. Halifax International Airport (2006/07)
12. Lester B. Pearson International Airport (2006/07)
13. Pierre Elliott Trudeau International Airport (2006/07)

Manufacturers (3 year cycle): Audits of these organizations include: M&M and Aircraft Certification personnel

14. Bombardier (2006/07) CBA might assist as well

15. Pratt & Whitney (2006/07)

16. Bell Helicopters (2005/06)

2. Hazard Statement

Hazard: The hazard is reducing the level of National Audit Program activity during SMS implementation.

Hazard Statement: Reducing the level of National Audit Program activity (as defined above) during SMS implementation has the potential to reduce safety (increase risk) to the Canadian public and the aviation industry.

3. Recommended Risk Control Option (Decision)

Focused inspection on NAP certificate holders (risk-based)

Establish the focused inspection program (for example, create specialist group(s) – HQ or Regional or both - to perform focused inspections, etc.)

Communication Plan on our Oversight Program (International and Domestic Relations)

Responsible manager/convening authority to target specific risk areas and identify underlying factors which contribute to non-compliance or safety issues

Use data and generate information from available and new sources (e.g. information from SMS certification activities, new sources such as financial information, flight operations surveillance system AID FOSS, analyse trends, etc)

Fewer than 25* FTEs used by the NAP and therefore transferable to SMS FTEs will be freed because a few resources will be required to conduct the focused inspections

Additional Mitigation

Monitor use of freed resources and if necessary, reiterate importance of focused inspection program given elimination of NAP (and distribution of resources)

Communicate the revised oversight program with our international partners and address issues as necessary

Clarify definition of audit versus inspection for international communications

Extend the focused inspection program to include all certificate holders implementing SMS

4. Identify The Authorizing Manager

Name: Merlin Preuss

e-mail: preussm@tc.gc.ca

Title: Director General Civil Aviation

Phone number: 990-1322

Date: 6 Mar 06

Given the following rationale:

I accept the risk control option recommended by the Risk Assessment Team with the following conditions.

1. Mitigations referring to technical and bilateral agreements are accepted for the long term and subject to negotiation between TC and the other implicated authorities.
2. No unilateral changes to the terms of technical or bilateral agreements are to be made, meaning the current oversight regime regarding these agreements remains until changes are successfully negotiated.
3. The additional mitigation requiring the extension of the focused inspection program to include all certificate holders implementing SMS is not accepted. The extent and type of oversight during transition is the purview of the accountable TC manager/executive who will make these decisions based on a case-by-case risk assessment.

Decision maker signature: _____ signed _____

5. Risk Management Team Leader:

Name: Jim McMenemy

e-mail: mcmenej@tc.gc.ca

Title: Manager Safety Evaluations and Standards

Phone number: 990-2142

Date: December 22, 2005 Amended March 1, 2006

Please note an appendix to the risk assessment was added January 20, 2006. It can be found on page 36.

STEP 1: INITIATE THE PROCESS

S1.1 Describe the situation/activity

Outline basic situation/activity

The subject of the risk assessment is to consider what risks are involved in a reduction of regulatory audit activity (National Audit Program as per the FOIP) during the implementation of SMS over the next five years (2005-2010).

Audit (FOIP): A formal and methodical examination of an aviation organization's conformance with current regulatory standards. An audit will normally be the composite of a series of cohesive concurrent or closely related comprehensive inspection over a short period of time. It normally results in an in-depth review of the organization. (Civil Aviation Directive 20).

Inspection (FOIP): examination of a specific item or testing of an individual against established standards. The specific item may be an individual's aviation proficiency, an aircraft, an aviation product or component, an in-flight or ramp inspection, or a certificate holder's operating standards or processes examined for conformance with regulatory standards. The term also refers to inspector tasks exercised in the performance of these activities. Inspections are conducted to determine conformance with the various standards. They may constitute the examination of a single aviation procedure or may cover an entire compendium of activities (audits). (Civil Aviation Directive 20).

National Audit Program (NAP) consists primarily of efforts from the following branches in Civil Aviation:

Aircraft Certification

Commercial and Business Aviation (CBA)

Aircraft Maintenance and Manufacturing (M&M)

Aerodromes and Air Navigation (A&AN)

Headquarters (HQ) and regions

Purpose of NAP:

To confirm certificate holders are meeting the regulatory requirements

To provide standardization of the audit process and equalize the use of regional resources

Resources:

Civil Aviation performs approximately five domestic audits per year requiring approximately 25* full time equivalents (FTEs). These resources are drawn from HQ and regions.

Inspectors who carry out NAP audit activities also carry out specialist inspection and audit activities (and will also carry out SMS assessment activities)

Canadian Aviation Document Holders who form the NAP

Air operators (3 year cycle): Auditors of these organizations include: CBA, M&M, Aircraft Certification personnel

1. First Air (2004/05)
2. Air Canada (2004/05)
3. Aircraft Services (2005/06)
4. West Jet (2005/06)
5. Air Transat (2005/06)
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Aerodromes (5 year audit cycle): Auditors of these organizations include: only Aerodromes personnel

9. Vancouver International Airport (2004/05)
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Manufacturers (3 year cycle): Audits of these organizations include: M&M and Aircraft Certification personnel

14. Bombardier (2006/07) CBA might assist as well
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16. Bell Helicopters (2005/06)

1. Associated Issues

Transport Canada's International** Commitments:

Globalization demands we have international agreements.

Canada is seen as one of the most liberal states (one audit every 3 years for aircraft operations, maintenance, and manufactures/one audit every 5 years for aerodromes in Canada versus one audit every 2 years in other countries)

In the past Transport Canada Civil Aviation has had difficulty convincing other countries that our schedule is comparable

Now we are looking at reducing the schedule further

In addition to safety oversight, we must consider the impact of this decision on international agreements (bilaterals, etc.)

Other regulators may lose confidence

Other countries may adopt our reduced audit cycle

So far we have been able to justify our cycle based on the quality and depth of our audits

TCCA's failure to honor the three-year audit interval identified in these agreements will jeopardize the agreements.

Many of our larger AMOs depend on international business for their survival and this business in turn depends on our international agreements. For example there are AMOs whose maintenance business includes domestic and foreign third party maintenance capability.

What international agreements are important for this risk assessment, what are they (references), what organizations are affected?

NAP Audit Procedures:

Prescriptive

Inspection and audit manual is being updated but not fast enough

The current procedures do not help us to know if the certificate holder is managed properly; the procedures are too focused on administrative aspects

We cannot always capture safety issues with the current procedures

NAP policies and procedures have not evolved to address the complexity of the aviation industry

In addition to the NAP audits, there are other oversight activities applied to the certificate holders covered by the NAP (inspections, special purpose, division, etc.)

NAP audits are very wide, but not as deep as necessary in some situations. Can we do it better?

SMS:

During SMS implementation it may be difficult to maintain the audit schedule mandated by the Frequency of Inspection Policy Document and our international agreements.

Those organizations affected by the SMS requirements are putting pressures on our resources (assessments will begin next year 2006)

What resource requirements have been identified for SMS implementation?

How many resources do we need to take away – alternatively – how many resources can we take away?

Effectiveness of the NAP:

The team has concerns about the effectiveness of the NAP

There is a belief that the NAP is a quality control function rather than a quality assurance function

More resources (time and people) are required for an effective audit to be performed

In some branches the managers feel the NAP is achieving the desired results

In other branches the managers feel that there are instances where the NAP is not meeting their needs

- o The NAP does not get to the heart of the matter
- o The underlying issues which have direct effects on the safety of our complex organizations today are not being identified during these audits

Effectiveness partly depends on the practices of the auditors (experience and skills) involved rather than the procedures

The sense around the table is that we do not dig deep enough

Miscellaneous Issues:

Finding resources for SMS: Non-FOIP risk assessment activity identified some, this risk assessment is asking that another be identified

Assumptions

1. Reducing NAP activities will free up resources for SMS/IMS implementation
2. SMS will be implemented at different intervals, however, all certificate holders will have it eventually
3. There will be an increase in air transportation and growth in the aviation industry in the foreseeable future
4. There is value in the NAP however there are deficiencies in the program.

Constraints

1. Scope on National Audit Program only (16 Canadian Aviation Document holders identified above). (The risk information generated by this risk assessment may be relevant to other aspects of the oversight program e.g. regional oversight).
2. An acceptable or appropriate level of regulatory oversight (definition from performance logic model) must be maintained. Two key results for TCCA must be maintained (public confidence and accident rate).
3. We must maintain our international agreements and ensure a comparable level of safety.
4. There is no data currently available on which to base an analysis of the effectiveness of the NAP. Therefore during this risk assessment we will rely on professional judgment, experience and the small amount of empirical data available when discussing the effectiveness of the NAP.
5. Current SMS Implementation schedule cannot be reduced given our rule making process.

S1.2 What is the hazard statement?

Hazard: The hazard is reducing the level of National Audit Program activity during SMS implementation.

Hazard Statement: Reducing the level of National Audit Program activity (as defined above) during SMS implementation has the potential to reduce safety (increase risk) to the Canadian public and the aviation industry.

S1.3 Identify the risk assessment team

<i>Key Competencies Needed</i>	Team Member	<i>What is the authority of that person in the RM group?</i>
Facilitation	Jim McMenemy Heather Parker	Lead Facilitator Co-facilitator
NAP M&M	Bill Fossey	Team Leader

International Agreements (M&M)	John Glavind	Team Member
CBA	Denis Guindon	Team Member
CBA	Jim King	Team Member
CBA	Robert Hannula	Team Member
A&AN	Bill Ives	Team Member
Aircraft Certification	Marcus Tittiger	Team Member
ARASS	Nahida Tannous	Observer
RMS.net	Alain Boutros	Observer

S1.4, S1.5 & S1.6 Who are the stakeholders, Is Consultation Necessary, and is the stakeholder consultation within the team’s scope?

<i>Stakeholder</i>	<i>Is consultation necessary?</i>	<i>Method of contact</i>	<i>Who is responsible?</i>	<i>When will the consultation occur?</i>
Internal NCAMX and all managers that support the NAP	Yes	Formal communication	DGCA	Once the risk assessment phase is complete
External International Partners	During implementation of the risk mitigation strategy risk control option	Formal and informal communication s as necessary	DGCA International Aviation	Once the risk assessment phase is complete / Once a risk control option is selected
Public	No			

STEP 2: PRELIMINARY ANALYSIS & ESTIMATING THE RISK

S2.1 What are the components of the hazard and the associated risks?

<i>Components of the hazard</i>	<i>Associated Risks</i>
Reducing frequency of evaluating conformance to regulation	Increased probability of not detecting non-conformance
Reducing frequency of evaluating conformance to regulation	Loss of confidence in the Canadian system by stakeholders and international regulators
Reducing frequency of evaluating conformance to regulation	Negative impact on Canadian industry (all facets)
Reducing frequency of evaluating conformance to regulation	Increased probability that a certificate holder will not comply with regulatory requirements
Reducing frequency of evaluating conformance to regulation	Increased probability that the skill set to conduct large audits will be lost due to infrequent use and reduced opportunity to train inspectors to perform large audits
Reducing frequency of evaluating conformance to regulation	Application of risk indicators (FOIP Appendix A) may be more lenient
Reducing effectiveness/comprehensiveness of evaluating conformance to regulation (that is achieved through the NAP compared to special audits or inspections, etc.)	Same as all above plus except training risk
Reducing effectiveness/comprehensiveness of evaluating conformance to regulation (that is achieved through the NAP compared to special audits or inspections, etc.)	Missing big-picture or comprehensive review of the entire certificate holder's system
Reducing effectiveness/comprehensiveness of evaluating conformance to regulation (that is achieved through the NAP compared to special audits or inspections, etc.)	Limited scope of oversight will reduce possible mitigation strategies

Reducing quantity of safety data and information (findings, audit reports, etc.)	Increased probability of applying TCCA resources in inappropriate places (not based on risk)
Reducing quantity of safety data and information (findings, audit reports, etc.)	Negative impact on Canadian industry (all facets)
Reducing quantity of safety data and information (findings, audit reports, etc.)	Loss of confidence in the Canadian system by stakeholders and international regulators
Reducing quantity of safety data and information (findings, audit reports, etc.)	Application of risk indicators (FOIP Appendix A) may be more lenient
Reducing quantity of safety data and information (findings, audit reports, etc.)	Increased probability of public safety and confidence (media) being compromised
Non-NAP certificate holders may perceive a different oversight standard	Increased probability of complaints from non-NAP certificate holders
Non-NAP certificate holders may perceive a different oversight standard	Distrust
Non-NAP certificate holders may perceive a different oversight standard	Lack of confidence in the regulator
The NAP in its current form and frequency may act as a deterrent	Increased probability that a certificate holder will not comply with regulatory requirements
Reduced communication/interaction with affected certificate holders	Misunderstandings
Reduced communication/interaction with affected certificate holders	Distrust
Reduced communication/interaction with affected certificate holders	Lack of confidence in the regulator
Reduced communication/interaction with affected certificate holders	Knowledge of certificate holder
Affected certificate holders are in transition to SMS and some risk indicators are changing	Increased probability of <i>not detecting</i> non-conformance or decrease in safety performance

S2.2 What is the exposure interval?		5 years (2006-2011)				
S2.3 Develop risk scenarios		S2.4 Establish consequences	S2.5 Assess Probability, Severity & Exposure (provide explanations as necessary)			
<i>Sequence of Events</i>	<i>Cause N E T H</i>	<i>Consequences</i>	<i>Prob</i>	<i>Sever</i>	<i>Exp</i>	<i>Risk level</i>
Risk Scenario #1: Erosion of International Confidence						
Policy change from prescriptive to performance based regulation (SMS) Resource pressure due to SMS implementation NAP activities reduced Becomes publicized that NAP program reduced Erosion of international confidence in Canadian system	Human	Loss of international revenue and business (renegotiation of contracts, etc.)	3	3	3	27
		Bilateral agreements rescinded	3	3	2	18
		Embarrassment to the minister (department)	3	3	2	18
		Pressure from international regulators to restore our oversight program	3	3	2	18
		Increased cost to certificate holders for individual agreements	3	2	3	18
		Increased resistance to SMS by Canadian industry	3	2	2	12
Notes: Loss of international revenue and business severity only deals with the consequence of that outcome.						
Risk Scenario #2: Erosion of Canadian Public Confidence						
Policy change from prescriptive to performance based regulation (SMS) Resource pressure due to SMS implementation NAP activities reduced Becomes publicized that NAP program reduced Erosion of Canadian public confidence in the regulator's safety oversight	Human	Embarrassment to the minister	2	3	1	6
		Reduced aviation activity	1	1	1	1
		Loss of revenue to foreign competitors	1	1	1	1
		Increased resistance to SMS by Canadian industry	1	2	1	2
		Pressure from industry and the public to regain confidence	1	2	1	2

S2.2 What is the exposure interval?		5 years (2006-2011)				
S2.3 Develop risk scenarios		S2.4 Establish consequences		S2.5 Assess Probability, Severity & Exposure (provide explanations as necessary)		
<i>Sequence of Events</i>	<i>Cause N E T H</i>	<i>Consequences</i>	<i>Prob</i>	<i>Sever</i>	<i>Exp</i>	<i>Risk level</i>
Risk Scenario #3: Unsafe condition develops (wilful or not)						
Policy change from prescriptive to performance based regulation (SMS) Resource pressure due to SMS implementation Reducing NAP activity Failure to detect non-compliance Unsafe condition develops from the non-compliance (wilful or not)	Human/ Tech	Injury to persons	2	3	2	12
		Loss of life	2	4	2	16
		Damage to property/equipment	2	1	2	4
		Loss of revenue	1	1	2	2
		Embarrassment to the minister (department)	2	3	2	12
<p>Notes: When we rate this we may need to scope this out more and specify based on the safety significance of the non-compliance. This scenario asks how effective is the NAP in detecting non-compliances that lead to reduction in safety</p>						
Risk Scenario #4: Conscious decision not to comply						

S2.2 What is the exposure interval?		5 years (2006-2011)				
S2.3 Develop risk scenarios		S2.4 Establish consequences	S2.5 Assess Probability, Severity & Exposure (provide explanations as necessary)			
<i>Sequence of Events</i>	<i>Cause N E T H</i>	<i>Consequences</i>	<i>Prob</i>	<i>Sever</i>	<i>Exp</i>	<i>Risk level</i>
Policy change from prescriptive to performance based regulation (SMS) Resource pressure due to SMS implementation Reducing NAP activity Conscious decision by certificate holder not to comply with regulatory requirements	Human	Injury to persons				
		Loss of life				
		Damage to property/equipment				
		Potential embarrassment to the minister				
		Increased Crown liability				
		Loss of public and international confidence				
Notes: Perceptions by the non-NAP organizations that the big certificate holders are not being audited. Upon rating this scenario the team decided they could not separate the good certificate holders from the bad in terms of changes in behaviour. Therefore the team decided to reword Scenario 3 and include both aspects of Scenario 3 and Scenario 4 in Scenario 3. The team was unable to judge the effectiveness of the NAP as a deterrent.						
Risk Scenario #5: Large Audit Skill Loss						

S2.2 What is the exposure interval?		5 years (2006-2011)				
S2.3 Develop risk scenarios		S2.4 Establish consequences	S2.5 Assess Probability, Severity & Exposure (provide explanations as necessary)			
<i>Sequence of Events</i>	<i>Cause N E T H</i>	<i>Consequences</i>	<i>Prob</i>	<i>Sever</i>	<i>Exp</i>	<i>Risk level</i>
Policy change from prescriptive to performance based regulation (SMS) Resource pressure due to SMS implementation Change from compliance audits to SMS assessments Reducing NAP activity Skill at conducting large audits erodes	Human	Inability to conduct effective large audits	3	2	1	6
		Difficult to meet TC auditing commitments				
		Reduced pool of individuals capable of conducting large audit	3	2	1	6
		Minister (department) loses a resource that allows him to see the overall health of a certificate holder during SMS implementation	3	2	1	6
<p>Notes: When SMS is fully functioning it will address the loss of a resource for determining overall health of a certificate holder. If we bring in an entirely new set of inspectors (given demographics) they will not be able to do the audits. New staff will be trained as assessors not as auditors. DGCA may require the audit tool as an oversight option in the future.</p>						
Risk Scenario #6: Missing comprehensive review of entire certificate holder's safety state (no action taken under reacted)						

S2.2 What is the exposure interval? 5 years (2006-2011)

S2.3 Develop risk scenarios	S2.4 Establish consequences	S2.5 Assess Probability, Severity & Exposure (provide explanations as necessary)
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<i>Sequence of Events</i>	<i>Cause N E T H</i>	<i>Consequences</i>	<i>Prob</i>	<i>Sever</i>	<i>Exp</i>	<i>Risk level</i>
Policy change from prescriptive to performance based regulation (SMS) Resource pressure due to SMS implementation Reducing NAP activity Functions are surveyed independently Lack of TCCA team approach Unable to determine the overall safety state of the organization No administrative actions against the certificate Unsafe condition exists	Human / technical	Damage to property environment	1	2	1	2
		Embarrassment to minister	1	2	1	2
		Increased liability to the crown	1	2	1	2
		Loss of public confidence	1	2	1	2
		Increased liability to the crown	1	2	1	2
		Loss of public confidence	1	2	1	2

Notes: Aircraft Certification has no other surveillance activities for manufacturers aside from the NAP on NAP certificate holders. Doing independent functional inspections eliminates the team aspect of looking at a certificate holder comprehensively. Exposure in this scenario was based on the difference between the current situation with the NAP and the future situation without or with a reduced NAP.

S2.2 What is the exposure interval?		5 years (2006-2011)				
S2.3 Develop risk scenarios		S2.4 Establish consequences	S2.5 Assess Probability, Severity & Exposure (provide explanations as necessary)			
<i>Sequence of Events</i>	<i>Cause N E T H</i>	<i>Consequences</i>	<i>Prob</i>	<i>Sever</i>	<i>Exp</i>	<i>Risk level</i>
Risk Scenario #7: Missing comprehensive review of entire certificate holder's safety state (Inappropriate action / overreacted)						
Policy change from prescriptive to performance based regulation (SMS) Resource pressure due to SMS implementation Reducing NAP activity Functions are surveyed independently Lack of TCCA team approach Unable to determine the overall safety state of the organization Unsafe condition exists Inappropriate administrative actions taken against the certificate	Human / technical	Negative media attention that erodes public confidence	1	1	1	1
		Embarrassment to the minister (department)	1	2	1	2
		Financial hardship to specific certificate holder, industry, and traveling public	1	2	1	2
		Outcry and pressure from specific certificate holder	1	2	1	2
Notes:						

S2.2 What is the exposure interval?		5 years (2006-2011)				
S2.3 Develop risk scenarios		S2.4 Establish consequences	S2.5 Assess Probability, Severity & Exposure (provide explanations as necessary)			
<i>Sequence of Events</i>	<i>Cause NETH</i>	<i>Consequences</i>	<i>Prob</i>	<i>Sever</i>	<i>Exp</i>	<i>Risk level</i>
Risk Scenario #8: Increased probability of applying TCCA resources in inappropriate places (not based on risk)						
Policy change from prescriptive to performance based regulation (SMS) Resource pressure due to SMS implementation Reducing NAP activity Information traditionally available through NAP reports no longer available Resource allocation not based on risk due to lack of information Resources allocated to certificate holders or issues not in need of additional oversight / and not to those in need of additional oversight	Human / technical	Loss of life	1	4	1	4
		Injury	1	3	1	3
		Damage to property environment	1	2	1	2
		Embarrassment to minister (department)	1	2	1	2
		Increased liability	1	1	1	1
		Negative media attention that erodes public confidence	1	2	1	2

S2.2 What is the exposure interval?	5 years (2006-2011)
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S2.3 Develop risk scenarios		S2.4 Establish consequences	S2.5 Assess Probability, Severity & Exposure (provide explanations as necessary)			
<i>Sequence of Events</i>	<i>Cause N E T H</i>	<i>Consequences</i>	<i>Prob</i>	<i>Sever</i>	<i>Exp</i>	<i>Risk level</i>

Notes: There is no available evidence that the NAP supports the risk-based allocation of resources to focus activities after the audit.

Risk Scenario #9: Increased probability of complaints from certificate holders who are not in the NAP but who are implementing SMS

Policy change from prescriptive to performance based regulation (SMS) Resource pressure due to SMS implementation Reducing NAP activity Audit activity and SMS implementation continues for non-NAP certificate holders Those certificate holders complain Complaints received expressing unfair treatment	Human	Loss of confidence in the regulator by those being audited Negative media attention and erosion of public confidence Additional workload to address ministerial inquires Perceived and real double standard	2	2	3	12
			2	2	3	12
			2	1	3	6
			3	1	3	9

Note: Certificate holders not under NAP still under regional audit program.

S2.2 What is the exposure interval?		5 years (2006-2011)				
S2.3 Develop risk scenarios		S2.4 Establish consequences	S2.5 Assess Probability, Severity & Exposure (provide explanations as necessary)			
<i>Sequence of Events</i>	<i>Cause NETH</i>	<i>Consequences</i>	<i>Prob</i>	<i>Sever</i>	<i>Exp</i>	<i>Risk level</i>
Risk Scenario #10: Distrust and misunderstanding resulting from less communication						
Policy change from prescriptive to performance based regulation (SMS)						
Resource pressure due to SMS implementation						
Reducing NAP activity						
Notes						
After consideration, this was deemed not valuable to the risk assessment.						

Summary of Risks and Risk Level:

Minimum Risk Level:

1. Erosion of Canadian Public Confidence
2. Large Audit Skill Loss
3. Missing comprehensive review of entire certificate holder's safety state (no action taken under reacted)
4. Missing comprehensive review of entire certificate holder's safety state (inappropriate action / overreacted)
5. Increased probability of applying TCCA resources in inappropriate places (not based on risk)

Moderate Risk Level:

1. Erosion of International Confidence
2. Unsafe condition develops (wilful or not)
3. Increased probability of complaints from certificate holders who are not in the NAP but who are implementing SMS

High Risk Level:

1. No high-risk scenarios (greater than risk level score of 30) were identified

STEP 3: EVALUATING THE RISK ACTIVITY

S3.1 What is the activity that exposes Transport Canada to risk?

Reduction of the NAP during SMS Implementation

S3.2 Assess the possible cost and benefits to Transport Canada

<i>Quantitative</i>			
<i>Cost</i>		<i>Benefits</i>	
		Freeing up to 25* FTES to be applied to SMS	
		Cost saving in overtime and travel	Up to 1.5 million
<i>Qualitative</i>			
<i>Cost</i>		<i>Benefits</i>	
Morale issues		Support for SMS/IMS implementation	
Opportunity to share audit best practices across the country and have standardized practices		Demonstration of commitment of senior management to the new program	
Reduction in oversight in some areas		Opportunity to improve our future oversight program	
Reduction in audit skills			

S3.3 Summarize the costs/benefits in terms of impact

There are clear quantitative benefits.

The team could not weigh the qualitative costs against the benefits but decided to continue.

STEP 4: CONTROL THE RISK

S4.1 What are the possible methods for controlling risks identified in step 2 ?

Methods of Controlling Risk

- Clearly discuss with our international partners the benefits of TCCA's implementation of SMS
- Demonstrate to our international partners that there will be no decrease in safety/increase in risk with this decision
- Obtain buy-in from international partners
- Consult with international partners to gain buy-in
- Explain the detail and level of our inspections
- Implement new inspection policy during implementation (e.g. focused inspections, enhanced inspections, etc.)
- Continuing the audit schedule for certificate holders that have no other oversight requirements
- Describe oversight activities in details
- Reduction of audit to some other level (not zero)
- Use a risk-based approach to focus inspections to ensure over time that areas in need of attention are audited (use a matrix, small teams, etc.)
 - Use a risk-based approach to focus inspections to ensure over time that areas in need of attention are audited (use a matrix, small teams, etc.) and apply across all certificate holders in implementation phase of SMS (those not part of the NAP that are in SMS implementation phase)
 - Identify additional data and information sources and use these in the risk-based decision (e.g. information from SMS certification activities, new sources like financial information, flight operations surveillance system AID FOSS, etc. – including methods to create risk information).
 - Analyse trends from existing data (if possible)
 - Findings database
 - SMS Assessment database

Keep some of the freed resources to use in focused oversight activities to maintain the pulse
Completely replace the audit activity with a new focused inspection activity
Write procedures to get to the underlying issues associated with findings
Use focused inspections as a transition step during implementation to SMS assessments once SMS is fully implemented
Encourage internal/3rd party audits (IOSA, LOSA, etc.)
Have portions of the TCCA audit program taken over by another organization
Setting up specialist groups that perform the focused inspections
Higher risk indicator threshold to trigger audit and inspections

Risk Control Options

1. Status Quo Current under FOIP
2. Remove NAP without any additional mitigation and accept risk
3. Focused inspection on NAP certificate holders (risk-based)
 - a. Create specialist group(s) – HQ or Regional or both - to perform focused inspections
 - b. Communication Plan on our Oversight Program (International and Domestic Relations)
 - c. Responsible manager/convening authority to target specific risk areas and identify underlying factors which contribute to non-compliance or safety issues
 - d. Use data and generate information from available and new sources
 - e. Fewer than 25* resources will be freed because a few resources will be required
4. Reduce the NAP frequency but not to zero; use risk-based allocation
 - a. Communication Plan on our Oversight Program (International and Domestic Relations)
 - b. Use data and generate information from available and new sources
 - c. Fewer than 25* resources will be freed because a few resources will be required
5. Recognize certificate holder internal audits or third party audits
 - a. Communication Plan on our Oversight Program (International and Domestic Relations)

6. Replace the entire audit program with a focused inspection program (risk-based)
 - a. Communication Plan on our Oversight Program (International and Domestic Relations)
 - b. Responsible manager/convening authority to target specific risk areas and identify underlying factors which contribute to non-compliance or safety issues
 - c. Use data and generate information from available and new sources

Note: The following is a list of suggested criteria and associated weights. This list was established to help ensure national consistency and facilitate the process. It is not exhaustive and does not preclude the use of other criteria.

S4.2 Complete the Criterion/Weighting Matrix to determine preferred option		
<i>What are the criteria for choosing the most appropriate option?</i>	<i>What is the weight of each criterion? (1-10)</i>	<i>Why?</i>
Protects life, health, the environment and property	10	NCAMX requested risk assessment
Promotes domestic (public) and international confidence in the safety and security of our transportation system	8	NCAMX requested risk assessment
Promotes economic efficiency, accessibility, and sustainability of the national transportation system	6	NCAMX requested risk assessment
Promotes efficient use of Transport Canada's human and financial resources	5	NCAMX requested risk assessment
Promotes stakeholder satisfaction and the principles of shared commitment and partnerships with industry	4	NCAMX requested risk assessment

How do the options compare to each criterion?		Options											
Against the criteria	With this weight	Status Quo			Remove NAP			Focused Inspection NAP			Reduce NAP but not 0		
		Score	Weighted Score	Why?	Score	Weighted Score	Why?	Score	Weighted Score	Why?	Score	Weighted Score	Why?
Protects life, health, the environment and property	10	8	80		1	10		10	100		5	50	
Promotes domestic (public) and international confidence in the safety and security of our transportation system	8	10	80		1	8		8	64		5	40	
Promotes economic efficiency, accessibility, and sustainability of the national transportation system	6	10	60	International cost and business	1	6		9	54		7	42	
Promotes efficient use of Transport Canada's human and financial resources	5	3	15		4	20		8	40		5	25	
Promotes stakeholder satisfaction and the principles of shared commitment and partnerships with industry	4	9	45		1	4		10	40		8	32	
Sum			280			48			298			189	
What are the total weighted scores			2			6			1			4	

How do the options compare to each criterion?		Options											
Against the criteria	With this weight	Certificate holder Internal audit			Replace with inspection								
		Score	Weighted Score	Why?	Score	Weighted Score	Why?						
Protects life, health, the environment and property	10	2	20		6	60							
Promotes domestic (public) and international confidence in the safety and security of our transportation system	8	2	16		6	48							
Promotes economic efficiency, accessibility, and sustainability of the national transportation system	6	2	12		4	24							
Promotes efficient use of Transport Canada's human and financial resources	5	2	10		10	50							
Promotes stakeholder satisfaction and the principles of shared commitment and partnerships with industry	4	5	20		7	28							
Sum			78			210							
What are the total weighted scores			5			3							

S4.3 What is the preliminary choice (option with the highest weighting)

Focused inspection on NAP certificate holders (risk-based)

Create specialist group(s) – HQ or Regional or both - to perform focused inspections

Communication Plan on our Oversight Program (International and Domestic Relations)

Responsible manager/convening authority to target specific risk areas and identify underlying factors which contribute to non-compliance or safety issues

Use data and generate information from available and new sources

Fewer than 25* FTEs will be freed because a few resources will be required

S4.4 What are the residual risks associated with this option and are they acceptable?

<i>What are the residual risks associated with this option</i>	<i>What is the level of residual risk (P x S x E = Risk)</i>	<i>Is the level of risk acceptable? Can it be managed? How?</i>
If the NAP ceases, certificate holders who were under the NAP will have focused inspections and SMS implementation activities. Certificate holders not under the NAP but implementing SMS will have audits and SMS implementation activities – this is a double standard.	Minimum	Accept
Resources freed from the NAP reduction are insufficient for SMS implementation to all affected certificate holders	High	As certificate holders begin SMS implementation, move these certificate holders to a focused inspection program

Some managers will not apply available resources to the focused inspection program	Moderate	Accept Monitor and negotiate if necessary
International parties may not accept our justification	Unknown	Obtain agreements from key players before implementation Clarification of lexicon audit versus inspection
Lost comprehensive review of the certificate holder	Minimum	Accept
Large audit skill loss	Minimum	Accept
If the recommendation is implemented those certificate holders under the NAP but not implementing SMS yet may have no or minimal oversight (i.e. 5 aerodromes, 3 manufacturers) until they begin implementation	Minimum	Accept OR Maintain NAP audits for these certificate holders until SMS implementation begins (i.e. 5 aerodromes, 3 manufactures)

S4.5 Select final option/risk control measure

Focused inspection on NAP certificate holders (risk-based)

Establish the focused inspection program (for example, create specialist group(s) – HQ or Regional or both - to perform focused inspections, etc.)

Communication Plan on our Oversight Program (International and Domestic Relations)

Responsible manager/convening authority to target specific risk areas and identify underlying factors which contribute to non-compliance or safety issues

Use data and generate information from available and new sources (e.g. information from SMS certification activities, new sources such as financial information, flight operations surveillance system AID FOSS, analyse trends, etc)

Fewer than 25* FTEs will be freed because a few resources will be required to conduct the focused inspections

Additional Mitigation

Monitor use of freed resources and if necessary, reiterate importance of focused inspection program given elimination of NAP (and distribution of resources)

Communicate the revised oversight program with our international partners and address issues as necessary

Clarify definition of audit versus inspection for international communications

Extend the focused inspection program to include all certificate holders implementing SMS

STEP 5: TAKE ACTION

S5.1 Develop implementation plan, as required

Activity	Start date	Due date	Person accountable	Monitoring measure (milestone or deliverables)	Method of follow-up
Define focused inspection program	Jan to Mar 2006	Mar 31 2006	Implementation Team	Program documented	Team updates
Develop communication strategy for communicating new focused inspection program with international partners	Jan to Mar 2006	Mar 31 2006	Implementation Team	Communication strategy	Team updates
Cancel current NAP audits and certificate holder audits who are implementing SMS exception: audit(s) planned for FY 05/06	Jan to Mar 2006	Mar 31 2006	Implementation Team	Notice of changes to NAP	Team updates
Implement communication strategy	Jan to Mar 2006	Mar 31 2006	Implementation Team	Feedback from international partners	Team updates
Begin focused inspection program	Apr 1 2006	Once SMS in place	Implementation Team	Selection and completion of focused inspections	Team updates

STEP 6: MONITOR IMPACT/FOLLOW UP

S6.1, S6.2 & S6.3 What activities should be monitored (measured), when should they be monitored (measured) and what method should be used to monitor (measure)?

Activity	When	By whom?	Method
SMS Implementation milestone completion	April 2007	PMI/POI	Qualitative assessment
Focused Inspection findings and corrective action Implementation	Frequently	Implementation team	Benchmark before program begins and measure change
Occurrences (Incidents and accidents)	Monthly	Implementation team	Benchmark before program begins and measure change
Certificate holder health (risk Indicators - e.g. Ontario Region's database)	April 2007	Implementation team	Benchmark before program begins and measure change
Industry complaints	April 2007	Implementation team	Benchmark before program begins and measure change
International agreements	Frequently	Implementation team	Survey international response to our changes.

S6.4 Assess the effectiveness of the risk control measures on the activities given the measures listed above.		
What worked well	What concerns	Recommended corrective action
To be completed after implementation April 2007		

S6.5 Evaluate the effectiveness of the risk analysis process		
What worked well	What concerns	Recommended corrective action
Being new to the process and fresh from the RMOT course, thought the process regarding the first 4 steps went very well, with both Jim's and Heather's professional guidance. From my perspective, the process appeared to work well.	Not necessarily being able to see the assessment through to its complete conclusion, i.e. the completion of the remaining parts.	
Good working relationships with other members of the team	Some data and general information not available	Improved data our data and statistics collection information.

Facilitators tried to kept team focused on problems	Team was required to make assumptions on what was required.	Provide teams with clear policies. What exactly is managements position. Examples: (TC has decided to disband the NAP? TC has decided to reduce the NAP by xx%.) What are the risks?
Good use of computer systems and the ability for team to make changes	Statements indicating no NAP to full NAP leave the impression that the team was providing justification for a conclusion already decided or make a decision by committee.	Better risk assessments will be created if clear statements are provided. The feeling that a resolution had been made and the exercise was to verify or give credence to the process would have been avoided.
Excellent collaboration between branch representatives		
Right people at the table		

Appendix to Risk Assessment on Reduction of Regulatory Audit Activity during SMS Implementation

Comments from AARP January 16, 2006

* *FTEs used by the NAP and therefore transferable to SMS*

Actual FTEs utilized by the NAP on a yearly basis are approximately 8.2 (2004 5.2 + 2005 11.2 = 8.2)

“These figures are actual, individual inspectors would have calculated their overtime against the NAP ARASS task probably increasing the FTE numbers to 10” [for the NAP activity]

** *International Agreements*

“Jeopardizing our international agreements would leave over 137 foreign approved organizations (not counting the U.S.) that would require either our oversight or an extension of the approved organization certifying the product. TC would incur an increased cost in FTE just to maintain the status quo by approving and conducting oversight on these organizations (i.e. JAA, Singapore, Brazil, etc.)”

EASA	113 organizations approved with different expiry dates
Singapore	17 organizations with no expiry date
New Zealand	1 organization which expires April 14, 2006
Brazil	1 organization expired, renewal needed every 12 months
Israel	5 organizations with no expiry date
China	1 organization which will expire January 30 th 2006