International Civil Aviation Organization

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Agenda Item 5: Presentations – State / Industry / ICAO

THE REGULATOR AS A PROFESSIONAL NEW CAPABILITIES FOR NEW CHALLENGES

(Presented by New Zealand Civil Aviation Authority)

SUMMARY

A State's aviation regulator has a vital role to play in implementing an effective national and organisational safety management framework. This paper tackles an important subset of organisational safety culture, namely the capability of its workforce, and assumes that culture is determined by the behaviour of its people.

To help create the right organisational safety culture the New Zealand Civil Aviation Authority (the CAANZ) has defined the requisite workforce capability (including behaviours), which is presented in this paper for discussion.

To embed and sustain the right behaviours the CAANZ is also advocating treating the role of an aviation safety regulator as a profession in its own right by fusing aviation skills or knowledge with regulatory craft.

1. INTRODUCTION

1.1 This paper focuses on describing the capabilities that the Civil Aviation Authority of New Zealand (CAANZ) requires in its regulatory work force to optimise its ability to generate an effective organisational safety culture. These capabilities form an integral part of CAANZ's work force strategy and will inform the basis of CAANZ's decisions to meet emerging business needs.

1.2 This paper does not advocate a particular organisational behaviour model or even attempt to tackle all the components of a good organisational safety culture. This paper assumes the following:

- Organisational 'success' is delivered by a set of shared beliefs and associated behaviours
- The organisational safety culture needs to be understood by all
- Organisational safety culture needs to be actively managed
- That different levels of an organisational hierarchy have different influences on the safety culture, i.e. senior managers are the organisation's safety culture custodians and shapers
- Organisational culture arises from the organisational shared beliefs
- Shared beliefs mould staff behaviours
- Beliefs, and hence culture, can only be assessed through observing human behaviour.

1.3 The premise is that organisational safety culture is determined by the behaviour of its people, and it is therefore vital to define the workforce capabilities (including behaviours) required.

2. THE REGULATOR AS A PROFESSION

2.1 To achieve its objective the CAANZ has developed a principles based Regulatory Operating Model (RoM)[1] to guide the way it performs its regulatory functions. The RoM describes how the CAANZ works with the aviation community to sustain and improve safety performance, and recognises that most participants are willing – and have strong incentives – to undertake their activities safely. It embodies a risk-based and proportionate approach which enables the CAANZ to target its interventions more effectively and efficiently.

2.2 To effectively carry out the RoM, the CAANZ must have the capability within its workforce to make appropriate regulatory decisions to protect the public interest. To help achieve this objective the CAANZ identified the required capabilities (see Attachment One), and recognised that the role of an aviation safety regulator is a profession in its own right.

2.3 Effective risk-based regulation relies on the regulator dealing with high levels of ambiguity in the constantly changing environment and handling a vast array of information in different forms. The quality of decision making is dependent on balancing the information and data available to a regulator with a level of skill, with current knowledge and the appropriate behavioural style.

2.4 The CAANZ, like many other regulators, is facing a number of challenges that can be summarised as:

- The emergence of risk-based regulation
- Increased complexity of regulatory decision making
- Increased expectations of performance from the public, central government, and participants
- Rapidly changing and evolving technologies such as satellite based navigation
- Introduction of safety management systems within aviation.

2.5 To meet these challenges the CAANZ needs to have capability across all levels of the organisation and a purposeful structured and integrated approach to achieving a professional workforce.

2.6 Professionalisation[2] involves a workforce where staff:

- Possess a core set of theoretical, practical and contextual knowledge
- Are recognized and respected by others in the profession and by the broader community for the knowledge they hold
- Have opportunities to meet, network with and learn from others undertaking similar tasks
- Are continually challenged to stay up to date with the latest development in their field
- Share a world view about the role and purpose of their profession and are guided by a common code of professional conduct and beliefs
- Share a professional language belonging to the regulatory profession.

[1] https://www.caa.govt.nz/Policy_ops/Regulatory_Op_Model.pdf
[2] Regulatory institutions and practices Summary Version, NZ Productivity Commission June 2014

2.7 As a professional aviation regulator the required capabilities exceeds the technical requirements of a professional aviator and extend to the broader practice of regulation. It is the fusing of aviation skills or knowledge with craft of regulation.

3. DISCUSSION

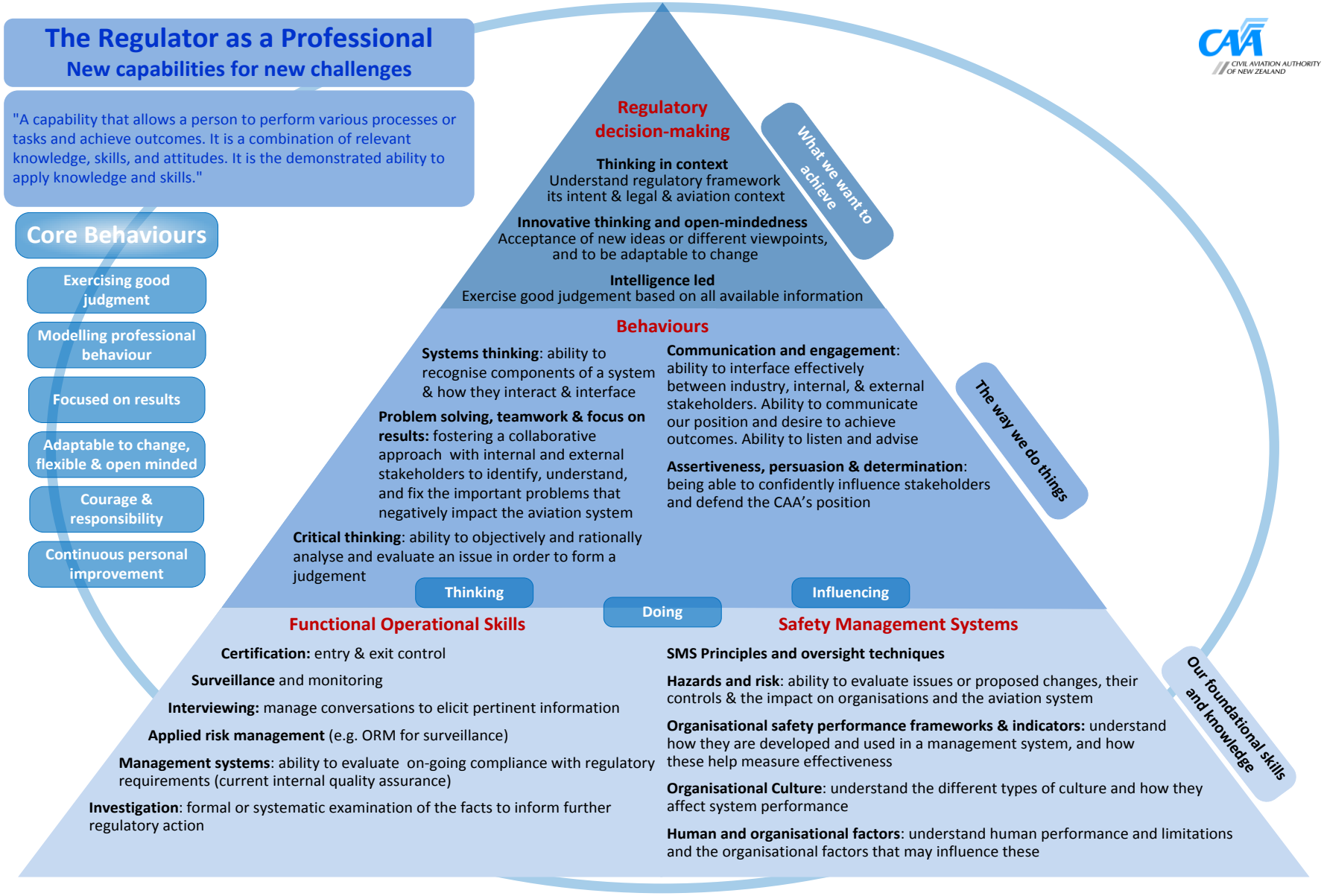
3.1 The CAANZ has defined the capabilities of the professional aviation regulator using a pictorial representation. The following model recognises best practice[3] and has been tailored to meet the CAANZ's requirements for building a corps of professional aviation safety regulators.

3.2 This representation is intended to be dynamic and evolve over time as CAANZ's business needs change. This capability framework recognises that not all staff can be expected to have specialised knowledge in all areas, and that the skill set will be dependent on specific needs of a particular role.

3.4 The model places the capabilities in the context of the wider core behaviours required of the workforce in the CAA (see Attachment Two) and represents the collective capabilities required of our regulatory staff.

3.5 Attachment three uses symbols to depict the regulator as a professional.

[3] Utilises work from the Safety Management International Collaboration Group (SMICG).



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3.6 **Regulatory decision making – what we want to achieve.** Exercising good judgement and decision making is considered a critical capability that underpins our ability to be an effective aviation regulator, and is depicted at the top of the triangle. Staff will be required to understand the context in which they are making decisions with knowledge on aviation, systems, risk, and business, and supported by knowledge of regulatory theory. The thinking style adopted must be able to manage complexity, and be able to cope with change by being open-minded and innovative.

3.7 **The Behaviours - the way we do things.** The way we do things is equally as important as the decisions we take. Five behaviours are identified to enhance the core behaviours of the CAANZ. They articulate the way that the regulator should carry out its role.

3.8 **Foundational capabilities.** Underpinning the behaviours required and what we want to achieve are a series of foundational capabilities. These are based on a series of operational skills and an understanding of safety management principles.

4. ACTION BY THE MEETING

4.1 The Meeting is invited to:

a) Note the work underway by the CAANZ; and

b) Discuss the merits of focusing on workforce capability as foundational (in particular the requisite behaviours) to help create an appropriate organisational safety culture.

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ATTACHMENT ONE: THE CAPABILITIES DESCRIBED

Better regulatory decision-making *What we want to achieve*	
Thinking in context	Understands the Regulatory Operating Model (ROM) regulatory framework, and applies its intent in the legal & aviation context Understands applicable state legislation and regulations (international/national) Understands the background/intent of legislation and regulations Understands legislation and regulations regarding use of safety information, data disclosure and protection Understands corporate business structures and operating practices Understands acceptable means of compliance and their assessment Can evaluate the acceptability of implementation of an organisation with regard to legislation and regulations Can assist an organisation in the understanding of applicable regulatory requirements
Innovative thinking and open-mindedness	Accepts new ideas or different viewpoints, and adapts readily to change Can assess whether a management system is appropriate to the operations of the organisation Understands the criteria for differentiating the size and complexity of organisations, taking into account their type(s) of certificate. Is skilled in recognising that different processes and procedures may lead to the same result Can listen to and understand what the organisation does to achieve an effective management system
Intelligence-led decision-making	Exercises good judgement based on all available information Can justify and document major decisions based on observable signals Establishes objective evidence where possible and applies subjective judgments where necessary Uses logic and analysis to arrive at appropriate conclusions from relevant information and assumptions Can infer, categorise, organise, and connect related concepts.

	Can exercise judgment, intelligence, and discretion in making decisions Possesses skills that can help identify alternative decisions Can envision possible future consequences of alternative solutions Can discern what factors contribute to a situation so that an appropriate solution is applied Recognises and mitigates personal biases and emotional involvement when performing regulatory tasks Is skilled in managing emotions and perception issues to ensure objectivity in stressful decision situations
Behaviours *The way we do things*	
Systems thinking	Recognises components of a system including how they interact and interface with practice Can identify indicators of a systemic failure in addition to indications of a single point failure Has experience of and the ability to understand a complex technical operating environment. Demonstrates clear understanding and application of accident causality models. Understands the potential impact of interactions (both positive and negative) between systems and at interfaces within a system (e.g., Quality Management Systems (QMS), maintenance control systems, error management systems, Air Traffic Control (ATC) systems)
Problem identification, solving, teamwork & focus on results	Fosters a collaborative approach with internal and external stakeholders to identify, understand and address /fix the important problems that impact the aviation system
Critical thinking	Can objectively and rationally analyse and evaluate an issue in order to form a judgement Can verify that the organisation data collection processes capture appropriate information Can verify the effectiveness of the risk analysis process Can use causal analysis methods Can evaluate trends in safety and compliance issues

	Can assess the service provider's safety accomplishments against its safety performance objectives Understands the limitations of data and how it can be used in analysing safety performance Critically and accurately analyses trends, problem situations, and issues
Communication skills **Engagement** **Collaboration**	Can interface effectively between industry, internal, & external stakeholders. Includes the ability to communicate the CAA's position and CAA's desire to achieve common outcomes Can listen and advise Has highly developed written communication skills including the ability to write detailed technical reports Has experience in, and can communicate effectively in a complex technical environment Demonstrates a high level of interpersonal, oral, and written skills, including the ability to liaise effectively at a senior level and influence outcomes both internally and with external organisations Can adequately manage conflict and confrontation Can collaborate, communicate, cooperate, learn, negotiate, and listen to ensure effective group decision making Collaborates and cooperates to achieve a common goal Employs cooperative behaviour to resolve interpersonal problems and optimise team member interaction Builds trust and respect among team members Receives and offers constructive feedback to other team members Works effectively with specialists from other disciplines Uses the appropriate form of engagement so that the regulator and service providers can meet mutual safety objectives
Assertiveness, persuasion & determination	Can confidently influence stakeholders and make the case for CAA's position Is rigorous and tenacious in finding proof or objective evidence Can state opinions firmly without either aggressively threatening or submissively accepting the opinions of others

Specialist functional areas and operational skills *Our core skills and knowledge*	
Safety Management System principles and oversight techniques	Understands and applies principles of performance based oversight Can plan, conduct and debrief compliance- and performance-based audits and inspections Can identify significant safety deficiencies in a system Includes performance-based elements in routine oversight activities Understands the difference between compliance- and performance-based oversight
Hazards and risk	Can evaluate issues or proposed changes, their controls & the impact on organisations and the aviation system in a dynamic context Understands the relationships between hazards and their consequences and how they contribute to accidents and incidents Can identify the precursors to safety issues and use and promote hazard identification tools that are appropriate to the size and complexity of organisations Can assess factors contributing to risk, and evaluate the effectiveness of implemented mitigation strategies Can share data and work cooperatively to determine risks Recognises technical issues that may have safety-critical implications Can assess the effectiveness of a safety reporting system and how it links to safety performance measures (inspired by UK CAA SMS for non-complex organisations guidance)
Organisational safety performance frameworks & indicators	Understands how performance indicators are developed and used in a management system, and how they help measure effectiveness Understands different types of indicators and their use and needs. Differentiates between effective and ineffective indicators Understands how data is collected and analysed in the organisation

	Can evaluate effectiveness of indicators and review as necessary Has knowledge of target setting and its limitations Is aware of best practices with measuring performance in the same aviation sector Is aware of major risk areas/concerns at the national/regional level and how the organisation may contribute to them Can translate the information obtained from the safety performance into messages that are suitable for various audiences (e.g., accountable executive, national safety teams, staff) Is familiar with State safety performance indicators and expectations of how organisations are to consider them
Organisational Culture	Understands the different types of culture and how they affect system performance Recognises different types of national, ethnic, and professional cultures and how they may affect the safety culture of an organisation Recognises the different types of organisational culture and their impact on personnel at various levels of the organisation Can assess whether, and to what extent, a safety culture exists in an organisation Recognises the importance of an open reporting environment and its impact on the effectiveness of a management system
Human and organisational factors	Understands human performance and limitations and the organisational factors that may influence these Recognise weak risk mitigations, processes, and procedures that are open to human errors Can analyse incidents/events using human factors models (e.g. SHELL, HFACS) Can identify and articulate the effects of organisational culture on operational safety Can identify human factor related risks within an organisation’s SMS Understands how the study and practical application of human factors is central to the CAA’s safety regulation approach

Certification **Control of entry into and exit of the civil aviation system**	Understands CAA's role as per the Civil Aviation Act and the eight ICAO critical elements of a safety oversight system Contributes to civil aviation safety objectives through • the consistent application of policy, procedures and practice • the strict application of entry controls • the positive influence of applicant/participant behaviour • good decision-making Ensures the documentation and recording of certification assessments and decisions is complete and accurate
Surveillance and monitoring	Can tailor audit programmes and schedules according to risk information, resulting in CAA resources being appropriately targeted at aviation safety risk Understands the use of a Quality Management System and regulatory compliance Can describe the process approach in an aerospace application Applies process audit techniques to CAA surveillance audits Can develop process audit tools and demonstrate their use Demonstrates auditing techniques that test the effectiveness of processes Accurately documents findings and identifies appropriate corrective actions Understands root cause analysis (RCA) and can demonstrate the use of tools to assist in RCA
Interviewing	Manages conversations to elicit pertinent information Demonstrates sound interviewing skills such as being an active listener, speaking clearly, and being able to articulate thoughts and formulate questions appropriately
Applied risk management	Applies risk methodologies that are appropriate to the context (e.g. CAA ORM for planning and preparation of surveillance activities)
Management systems	Can evaluate on-going compliance with regulatory requirements, and assess how the strengths of a quality management systems – in particular management review – are used by organisations to

	improve safety performance Understands the role of the accountable manager (See SM ICG pamphlet The Senior Manager's Role in SMS). Understands the basic components of a management system Understands the need for management system components to be integrated and operate as one system Recognises whether management systems are appropriate for the type, size and operating environment of the organisation Understands change management principles Understands best practices for continuous improvement
Investigations	Understands the need to monitor regulatory compliance and consider interventions to achieve and improve compliance Understands best practice for investigations Understands the need to create and manage regulatory compliance investigation files Understands and applies a recognised interviewing model Understands the need to gather and manage exhibits and information using a range of investigative practices and techniques Analyses information to arrive at outcome supported by evidence

ATTACHMENT TWO: THE CAANZ'S CORE BEHAVIOURS

The above capabilities are supported by the core behaviours the CAANZ expects all its employees to demonstrate. The behaviours described above are designed to complement CAANZ core behaviours described below.

Exercising good judgment	Uses rigorous logic and honest analysis to solve problems, makes well-reasoned evidence-based decisions, does not make hasty assumptions, considers the implications of decisions and actions, is always aware of effect of his/her actions on the Authority's reputation.
Modelling professional behaviour	Delivers on promises, acts with integrity at all times, looks for ways to improve internal and external relationships, makes timely decisions, ensures own area of expertise and knowledge is up to date and provides a service that adds value to the Authority and stakeholders.
Focused on results	Measures own progress against goals and objectives, balances analysis with action, delegates where appropriate, manages time effectively, doesn't get diverted by trivia, is focused on the bottom line to deliver value, delivers results in a timely manner to internal and external customers.
Adaptable to change, flexible and open minded	Adjusts flexibly to each situation; reads situations and approaches each one with an open mind. Engages with others to ensure cooperative relations. Takes a systems-based approach.
Courage and responsibility	Engages others in a constructive manner, does not indulge in hearsay and gossip, delivers information to the person who can do the most about it, uses appropriate language that does not demean others, understands what is really happening and does not assume he/she knows what the customer, colleague or team wants. Builds trust with internal and external customers. Shows respect to others even when opinions differ, looks for a win/win.
Continuous personal improvement	Picks up on the need to change personal, interpersonal (and where applicable) managerial behaviours quickly; seeks and accepts feedback; admits mistakes and shortcomings; is open to suggestions; seeks out and accepts formal and informal professional development opportunities.

ATTACHMENT THREE: THE REGULATOR AS A PROFESSIONAL