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Open Request of United Nations to dismantle Safety Management Systems and reinstate regulatory oversight and confidence to Global aviation markets

Dear United Nations Secretary-General His Excellency António Guterres and Senior Management Group (SMG) members: Amina J. Mohammed, Maria Luiza Ribeiro Viotti, Ana Maria Menéndez, Vera Songwe, Rola A. A. H. Dashti, Armida Salsiah Alisjahbana, Olga Algayerova, Joyce Cleopa, Msuya Mpanju, Henrietta H. Fore, Jan Margaret Beagle, Alicia Bárcena Ibarra, Verónica Michelle Bachelet Jeria, David Muldrow Beasley, Miguel de Serpa Soares, Adama Dieng, Rosemary A. DiCarlo, Patricia Espinosa, Peter Thomas Drennan, Grete Faremo, Yury Fedotov, Oscar Fernandez-Taranco, Virginia Gamba de Potgieter, Natalia Kanem, Bience Philomena Gawanas, Liu Zhenmin, Filippo Grandi, Fabrizio Hochschild Drummond, Atul Khare, Mukhisa Kituyi, Jean-Pierre François Renaud Lacroix, Mark Lowcock, Heidi Mendoza, Mami Mizutori, Phumzile Mlambo-Ngcuka, Michael Møller, Izumi Nakamitsu, Pramila Patten, Catherine Pollard, Marta Santos Pais, Maimunah Binti Mohd Sharif, Alison Smale, Fekitamoeloa Katoa 'Utoikamanu, Achim Steiner, Vladimir Ivanovich Voronkov,

The United Nations Specialized Agency ICAO (International Civil Aviation Organization) in the 2006 ICAO Journal, Volume 61 Number 6, 2006 -SAFETY MANAGEMENT GLOBAL APPROACH UNLOCKS POTENTIAL OF SMS – PROTECTING DATA COLLECTED FOR SAFETY PURPOSES - article "ICAO initiative promotes global approach to SMS implementation" announced to the world a directive to re-direct aviation oversight and implement Safety Management Systems, in part, because:

..."a rapidly expanding industry and limited resources at oversight authorities make it increasingly difficult to efficiently and effectively sustain a prescriptive approach to the management of safety based upon regulatory compliance exclusively."
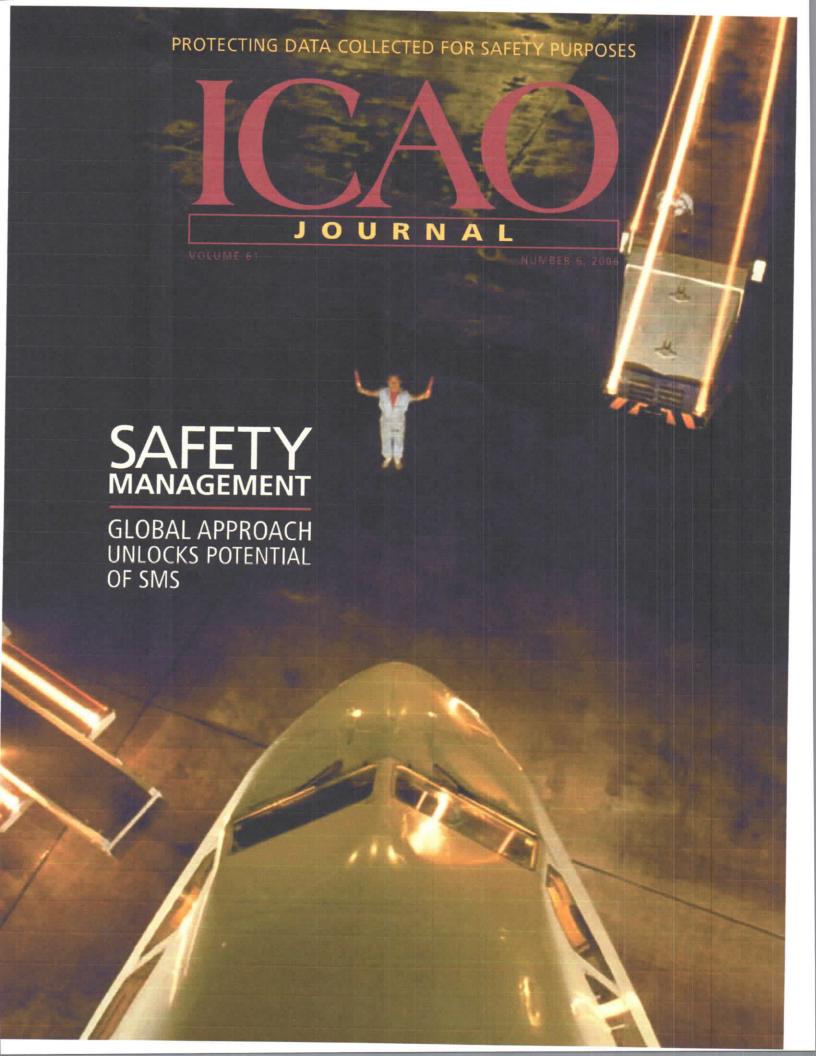
The Specialized Agency of the United Nations' decision to implement SMS to private operators and manufacturers was, and continues to be, a theoretical experiment that promotes self management systems and self regulation - both of which continue to destroy confidence and invoke turmoil throughout the aviation global industry. This directive set in motion the biggest regulatory oversight sell off the world has known.

In the interest of restoring global confidence please dismantle SMS and return oversight to world aviation inspectors and regulators.

Thank you United Nations for consideration of this request,

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*additional email attachments: SMS Parliament Hill presentation Kevin Gauthier April 21 2009, SMS Parliament Hill presentation Greg Holbrook April 21 2009

SAFETY
MANAGEMENT

GLOBAL APPROACH
UNLOCKS POTENTIAL
OF SMS

ICAO initiative promotes global approach to SMS implementation

With an emphasis on achieving worldwide harmonization, the organization's initial efforts to foster safety management have focused on the development of new regulatory provisions, guidance material and a special training programme

VINCE GALOTTI • ARUN RAO
DANIEL MAURINO
ICAO SECRETARIAT

COMPLIANCE with ICAO standards and recommended practices (SARPs) is a cornerstone of international civil aviation safety. However, a rapidly expanding industry and limited resources at oversight authorities make it increasingly difficult to efficiently and effectively sustain a prescriptive approach to the management of safety based upon regulatory compliance exclusively. This is why it is essential to complement the regulatory approach to safety management with a performance-based approach.

A performance-based approach to safety management can be presented as a three-step process. In the initial stage, oversight authorities, operators and service providers agree on the level of safety that operators and service providers are expected to achieve. This safety performance may be expressed in complex quantitative terms using collision risk modelling and associated target levels of safety. However, simpler quantitative approaches as well as qualitative methods — or even a combination of the two — are increasingly being used as effective methods for determining and measuring safety performance.

During the second step of the process, oversight authorities, operators and service providers decide on the safety requirements necessary to achieve agreed targets. These requirements usually include the array of tools and means available to operators and service providers. In the third and final step, oversight authorities ascertain whether the envisaged safety performance has been achieved, after which operators and service providers propose measures for correcting any deviations.

Senior management accountability is a fundamental component of the performance-based approach, since the frequency of prescriptive inspections and reviews by oversight authorities can conceivably decrease. In this sense, operations and safety managers assume a bigger stake in ensuring safety.

Performance-based approaches to the management of safety are best exemplified by the safety management system (SMS), and the mature concepts that form the building blocks of an SMS allow for its implementation on a global basis. Indeed, under ICAO provisions that took effect in November 2006, aircraft operators, aerodrome operators, air traffic services providers and maintenance organizations worldwide are required to implement safety management systems.

Management of safety

The efficient and effective management of any aviation organization, regardless of the nature of its functions or size, requires the management of basic business processes such as financing, budgeting, communicating, allocating resources, and so forth. In recent years, managing safety has been added to this list. Managing safety should now be as much a part of running an aviation organization as managing any other business process. Moreover, it has been well established that effective management of safety is good business.

Traditional systems for addressing safety issues are usually set in motion only after some triggering event such as

In companies where management is truly committed to enhancing safety as a core business activity, employees will not be afraid to bring forward their safety concerns

Rand K. Peck

an accident or incident discloses a safety concern. While such efforts will always serve an important purpose, identifying safety concerns through forensic means, they need an outcome in order to react and engage the safety management process. In these systems, responsibility for monitoring outcomes and reacting to the safety concerns related to outcomes may be spread around the organization depending on the type of activity involved (e.g. flight operations, maintenance, ramp and cabin). Furthermore, those accountable for monitoring safety and addressing concerns may not always be clearly identified, and often when they are readily identifiable, the individuals held accountable for safety are only at a middle management level.

The trend today is towards greater emphasis on proactive and predictive systems to manage safety. SMS involves the ongoing routine collection and analysis of safety data during the course of the activities that an organization must pursue every day while conducting its core business functions, in addition to reacting to the data collected. The SMS may be considered process-driven and proactive. It continuously collects and analyses sizable volumes of data that provide a principled basis for the definition of activities and the allocation of resources to address safety concerns in a proactive manner. The term "system" conveys the notion of an integrated set of processes aimed at managing safety that crosses intra-departmental boundaries, thus addressing safety concerns from an integrated and broad perspective.

An SMS thus comprises a systemic approach to the management of safety that puts in place the necessary organizational structure, accountability, policies and procedures. In order to reinforce the conviction that safety management is a managerial business process, basic SMS requirements should include provisions for an organization to establish lines of responsibility for safety throughout the organization, beginning with the senior management level.

In addition to the systemic and proactive nature of managing safety, which is

BUSINESS PLAN UNDERSCORES COMMITMENT TO SAFETY MANAGEMENT

THE ICAO business plan and the organization's new focus on safety management might seem as two unrelated efforts born roughly in the same timeframe. On closer inspection, however, one realizes that the two initiatives have a common conceptual anatomy: both are based on the achievement of measurable results, both emphasize accountability, and both feature a performance review process that can lead to self-improvement. This similarity is not a coincidence, but was born out of the necessity to accept two emerging realities: the limits on resources, and a shift from a reactive and prescriptive methodology towards a preventive and performance-based one.

Expeditious implementation of safety management systems is one of the key activities arising from ICAO's safety-oriented business plan. Safety management system (SMS) implementation around the world is one of the "pillars" that make up the high-level strategy through which the safety of international civil aviation is to be advanced.

The overall tactical deployment of ICAO's resources in the sphere of safety management is aligned and managed through the business plan with the goal of delivering a consistent and harmonized global approach to the concepts and implementation of SMS and the implementation of performance-based safety regulations. These anticipated results are complemented by a defined set of measurable indicators through which the effectiveness and efficiency of the ICAO initiative will be monitored.

SMS is thus firmly embedded within

the safety component of the organization's business plan, a symbiosis that is mutually beneficial. The business plan independently measures the effectiveness of the SMS programme, while the implementation of SMS by States allows better input and response to the other

Jim Jorgenson

ICAO's efforts to advance implementation of SMS across all aviation disciplines are in step with the organization's business-like approach to safety enhancement

safety strategies supported by the business plan. This input is enhanced through the collection of safety data, while response is enhanced through an improved safety culture.

The way forward for both the business plan and safety management programme demands a commitment to safety management systems from the highest levels of an organization, with transparent accountability. Just as ICAO's business plan evolved from institutional action sparked by its member States, the international standards that apply to safety will require States to implement programmes that include acceptable levels of safety as defined by authorities, operators and air navigation services providers.

For these two interlinked initiatives to survive, patient attention is required from all civil aviation stakeholders. Perhaps

relatively concrete and understandable, the evolution to a more managed approach to safety and to the SMS also requires a change in the way that people think about safety, a collective perception that may be referred to as culture. Although culture cannot be regulated or implemented in the way that more concrete systems and rules may be, manage-

In recent years safety management has been added to the list of traditional business processes that are required to run any aviation organization

ment philosophy can be transmitted in clear and unambiguous terms throughout an organization.

Once convinced that SMS is good business and that it should become an integral part of an organization, management should take definitive measures to ensure that its commitment to managing safety as a core business activity is recognized by the staff. Over a period of time, staff should feel at ease about bringing forward safety-related information. The combination of rules and regulations and concrete action — together with an explicit change in management philosophy — should result in a greatly improved safety culture.

ICAO action

ICAO's strategic objectives for the period up to 2010 include the enhancement of global civil aviation safety, a goal that calls for the organization to support implementation of safety management systems across all safety-related disciplines in all States.

While many States and organizations have been involved in implementing safety management systems over the years, ICAO has noticed some discrepancies concerning the key terms, concepts and hypotheses they appropriate. This was evident, for example, in the way that States attempted to adapt the notion of an "acceptable level of safety." Discrepancies were also apparent in the use of various terms, as well as in regulatory development and in the manner that SMS was being explained and taught.

The organization initiated a substantial effort in 2005 to harmonize these concepts and terms and to combine all of its safety management guidance into a single comprehensive document entitled the *Safety Management Manual* (ICAO Document 9859). It also began to coordinate, research and study those ideas that were vaguely understood. The result was a clear and common perception of SMS and its components, and a comprehensive guidance document for SMS implementation. The next step involved developing common material to support training and ensure that operational and safety managers, as well as operating personnel, more fully understand fundamental safety and human factors concepts such as "just" culture, the role of latent conditions, and aspects of human error.

The point of all these efforts has been to facilitate a harmonized global approach to the implementation of SMS. Harmonization will lead to a better and common understanding of SMS, extensive sharing of information and data, rapid expansion of safety management systems, common course material and readily adaptable model regulations, among other things.

Very importantly, one way ICAO has supported SMS implementation has been to amend SARPs to establish harmonized safety management requirements in specific annexes to the Chicago Convention.* The *Safety Management Manual*, a central source of safety management information, offers essential guidance material concerning these harmonized provisions. It includes a section on generic safety management concepts applicable across aviation activities, as well as sections on the specific activities of operators, maintenance organizations, ATS providers and aerodrome operators.

In continuing its initiative, ICAO will have to complete several critical tasks by the autumn of 2007. All Chicago Convention annexes, for example, will have to be assessed to determine the feasibility of developing SARPs compatible with a performance-oriented regulatory approach to safety management. Model regulations will be required to support adoption of a performance-based regulatory approach by States. Material will be needed to guide national oversight authorities in integrating safety management practices and to assist aviation organizations in applying SMS. Finally, a programme of training courses to assist

* The amended annexes are Annex 6, *Operation of Aircraft* (Part I, International Commercial Air Transport — Aeroplanes and Part III, International Operations — Helicopters); Annex 11, *Air Traffic Services*; and Annex 14, *Aerodromes* (Volume I, Aerodrome Design and Operations). In all, 18 annexes to the Chicago Convention contain provisions for the safe, secure, orderly and efficient development of international civil aviation.

All three authors are employed in the Air Navigation Bureau at ICAO headquarters, Montreal, where Vince Galotti is Chief of the Air Traffic Management (ATM) Section; Arun Rao is Chief of the Aerodromes, Air Routes and Ground Aids (AGA) Section; and Capt. Daniel Maurino, of the Flight Safety (FLS) Section, is the Coordinator of the Flight Safety and Human Factors Programme.

ICAO Council appointment

**G. Shin
(Republic of Korea)**

Ambassador Gil-sou Shin has been appointed Representative of the Republic of Korea on the Council of ICAO. His tenure commenced on 26 September 2006.

Ambassador Shin is a graduate of the Seoul National University, where he majored in economics. He joined his country's Ministry of Foreign Affairs in 1978, and served in a number of positions of increasing responsibility both at home, in different divisions of the Ministry of Foreign Affairs and Trade (MOFAT), as well as abroad, in embassies of the Republic of Korea in Africa, Asia and Europe. His most recent assignments have included those of Counsellor at the Permanent Mission of the Republic of Korea to the United Nations Secretariat and International Organization in Geneva; the Deputy Director-General for Commerce and Trade Policy at the MOFAT; and the Minister of the Embassy of the Republic of Korea in the Philippines.

In addition to his recent appointment as Representative on the ICAO Council, Ambassador Shin is currently serving as Consul General of the Republic of Korea in Montreal. □

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vide flight crews with an accurate and timely indication of inadequate take-off performance."

Comair Flight 5191. The U.S. Federal Aviation Administration (FAA) has issued a safety alert in the wake of the 27 August 2006 crash of a Comair Bombardier CRJ100 at Lexington, Kentucky Blue Grass Airport (KLEX). The safety alert for operators (SAFO), No. 06013 dated 1 September 2006, is available at the FAA's website (www.faa.gov/other_visit/avia tion_industry/airline_operators/airline_safety/safo).

The recent accident, in which a commuter jet took off from the wrong runway, "brings into focus the importance of maintaining situation awareness and adherence to CRM procedures," the FAA stated. "It is important to note than many airports are involved in construction activities that result in changing environments. This heightens the importance of pilot vigilance.

"There are many other factors that can distract a pilot and cause the loss of situational awareness. Even subtle distractions could demand a share of the pilot's workload, such as dealing with company procedures, passengers, running late and even personal issues," the SAFO stated.

"It is imperative that flight crews maintain the highest levels of airmanship discipline and crew resource management. This is especially significant during the critical phases of flight, take-off and landing."

The SAFO reminded flight crews of the following existing guidance:

• As part of pre-flight planning, review airport layouts and know airport signage.

• Review NOTAMs for information on runway and taxiway closures and construction areas.

• During taxi operations, have a current airport diagram readily available for reference and check the assigned taxi route against the diagram, paying special attention to any unique or complex intersections.

• Write down complex taxi instructions. When unsure of the taxi route, request progressive taxi instructions from Air Traffic Control (ATC).

• If the flight has more than one crew member, it is important that both fully understand taxi clearances and runway assignments.

• During taxi operations, the pilots' maximum attention should be placed on maintaining situational awareness. The pilot taxiing should have his attention focused outside the aircraft at all times while the other pilot should monitor the taxi progress by reference to the airport diagram and give guidance to the taxiing pilot.

• Apply CRM procedures to identify and resolve conflicting perceptions of ATC instructions; confirm, by using the challenge-and-response technique, proper execution of ATC instructions; and confirm, using this same technique, that the aircraft is actually positioned on the assigned runway by reference to the heading indicator.

• Use all available resources to ensure the aircraft is positioned on the proper runway. One technique for aeroplanes that are equipped with a flight management system (FMS) is to verbally announce that the proper runway and departure procedure are selected in the FMS and that the aircraft heading agrees with the assigned runway for take-off.

The U.S. NTSB is continuing its investigation of the accident, which occurred when the aircraft attempted to take-off from an inoperative 3,500-foot runway instead of the 7,000-foot runway that it had been assigned by ATC. □

Business Plan commitment

the greatest challenge is that of putting these programmes into practice. While both the business plan and SMS implementation are evolved forms of past ideas, proper execution demands that they be seen as new concepts. While seemingly a subtle distinction, this approach prepares one mentally to go beyond simple adaptation of past practices and behaviour to formulate new strategies based on the best practices and operational experience.

Over the next decade, the ICAO business plan and safety management concept will undergo a series of trials and iterations. The ICAO Assembly will streamline the organization's strategies, and the effects of this enhanced institutional efficiency will be obvious to all from the organization's updated business plan and associated performance indicators. At the same time, the governing boards of operators of countless aviation systems worldwide will periodically adjust their safety indicators and targets to meet their acceptable levels of safety.

And while the SMS and ICAO business plan will ultimately grow outdated — like all other forms of management that have preceded them — they can be expected in the meantime to provide an effective response to the safety concerns that may emerge over the coming decades. □

SMS implementation

States in implementing the harmonized provisions will be delivered in each of ICAO's seven regional offices.

While a great deal is being done to implement SMS as a tool for managing safety, it is important to bear in mind that this implementation does not obviate the need to comply with the

specifications and regulations in force.

Importance of training. Training that can assist States with the global implementation of SMS is very important, and consequently ICAO recently developed such a course. During 2006, the organization conducted three courses for different regions, and four more courses will be delivered next year.

The goals of the ICAO SMS training course, which builds upon the harmonized safety management provisions and Document 9859, are to expand the knowledge of the safety management concepts and related SARPs contained in ICAO Annexes 6, 11 and 14, as well as guidance material. Another goal is to develop States' capacity to certify and oversee the implementation of key components of a basic SMS in compliance with ICAO SARPs and national regulations.

The target audience for the courses includes civil aviation administration officials who are responsible for the implementation of safety programmes and the oversight and/or implementation of safety management systems in the areas of aircraft operations, air traffic services and aerodromes.

The ICAO SMS training course, delivered in five days, comprises 10 modules and six case studies to allow participants to apply their newly acquired knowledge in a practical setting. Topics covered include safety basics, fundamentals of safety management, hazard identification and risk management, ICAO SMS regulation, and the development, implementation and operation of an SMS. The course includes daily progress tests and a final examination.

To provide sufficient SMS training opportunities in the years ahead, ICAO plans to develop training for course instructors as this will allow States to become self-sufficient both in SMS implementation and in imparting SMS training. Moreover, as States develop these internal resources, they will be in a position to assist other States with their implementation of safety management systems, thus achieving the synergistic partnership necessary for the global execution of safety management systems.

SMS training is available from ICAO on request from individual States or groups of States. The course, designed for a maximum of 30 participants, includes study materials provided to States in electronic format. At present, it is conducted either in English or Spanish, but it is expected that availability will be expanded to other languages.

Once the training has been completed and instructors have been endorsed, States may use the ICAO training course and its materials without restrictions. From time to time, the course material may be updated by ICAO, in which case States will be provided with new material in electronic form. States may obtain further details on the SMS training programme at ICAO's website (www.icao.int/anb/safetymanagement).

ICAO's initial effort in assisting States with implementing SMS will continue for another year, at which point further activities may be undertaken. These could involve identifying a means for further pursuing safety management activities, including related training, on a regional basis. It could also entail the development of guidance material and provision of assistance for the establishment of safety data collection and analysis systems in States. Future work might involve efforts to improve safety data analysis capabilities in States, and the linking of regional systems for the exchange of safety information and analysis. Also envisioned is the development of guidance material and provision of assistance for the enactment of national legislation to protect all relevant sources of safety information.

Conclusion. Under the prevailing situation in international civil aviation, it is becoming increasingly difficult to dissociate safety from efficiency. Aviation organizations, no matter their core business activity or geographical location, must not only be safe but efficient. Even organizations that are not directly involved in a measurable production activity, such as civil aviation administrations, are under pressure to discharge their mandate in the face of ever-diminishing resources. Hence, the value and importance of SMS.

SMS presents the international aviation community with a principled, data-driven approach to determining priorities and allocating the resources required to address safety concerns that hold the greatest risk potential, and towards activities likely to produce the biggest return on resources invested. SMS also provides the means to address safety systemically and proactively through hazard analysis and risk assessment and mitigation. In this manner, SMS presents the international aviation community with clear means to achieve more, safety-wise, with less.

ICAO has worked determinedly toward harmonizing SMS concepts, guidance material and SARPs, in addition to developing a comprehensive training course, and is now preparing to deliver this course as far and wide as possible.

The full potential of SMS will be realized when the concept is adopted on a global basis, by all Contracting States and, through States, by as many aviation organizations as possible. In order for this worldwide implementation to take place, States need to be fully aware and informed about the SMS concept and the means and tools for its implementation. □

SMS standards

Another initiative is to better integrate the existing suite of advisory circulars into a comprehensive safety and quality management system concept for the aviation industry. Part of this effort will include the development of more sophisticated operational risk analysis techniques including the effects of operational changes on system safety. Particular targets for these efforts will include existing advisory circulars and other documentation for an internal evaluation programme, continuing analysis and surveillance systems and the Voluntary Disclosure Reporting Programme (VDRP). Along these same lines, future study will also explore safety management in other fields of aviation, as well as industry-developed management programmes in common use.

The FAA further plans to infuse the concepts of SMS into the agency's oversight systems. The four pillars will be applied to the processes of producing regulations, standards and policies such that these will be viewed as system risk controls. Future rulemaking will be based more on risk analysis so that the FAA can be sure that necessary controls are in place, and that obsolete regulations that no longer are needed to control risk can be eliminated.

In a similar manner, safety assurance of the overall aviation system will be based on analysis of data coming from FAA field elements as well as directly from aviation service providers. Information sharing will receive much greater emphasis than before as a fundamental part of the FAA risk management and safety assurance strategy. In this manner, the total government/industry safety management strategy can be made more effective and efficient. □