

INTERNATIONAL CIVIL AVIATION ORGANIZATION'S ROLE IN DISASTER PLANNING, PREPAREDNESS & RESPONSE: A FUNDAMENTAL UNDERSTANDING OF THE INTERNATIONAL SCENARIO

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INTRODUCTION

The International Civil Aviation Organization (ICAO) is a specialized agency of the United Nations (UN) devoted to the safety efficiency and regularity of international aeronautical transportation. The governing protocols of ICAO are the Articles of the Convention on International Civil Aviation signed at Chicago on December 7, 1944 (the Chicago Convention).¹²⁸

ICAO is charged with the administration of the principles laid out in the Convention. In ICAO Headquarters, Montreal, Search and Rescue (SAR) is the responsibility of the Air Traffic Management Section of the Air Navigation Bureau and, specifically, 30% of one person's time.¹²⁹

The reason for ICAO coming into being is to be found in the events of the 1940s. The Second World War was a powerful catalyst for the technical development of the airplane. At the end of the war, a vast network of passenger and freight operations had been set up but it lacked high level, organizational structure, especially in its International dimension. Just as the airplane had been a devastatingly effective instrument of war, it was realized that it could be outstandingly effective in supporting and benefitting a world at peace.¹³⁰

The Chicago Convention has 96 Articles. The Fundamental principle underwriting the Convention is that “*every state has complete and exclusive sovereignty over the airspace above its territory*”. The Convention also provides that no scheduled international air service may operate over or into the territory of a Contracting State without its previous consent.¹³¹

THE FUNDAMENTAL STANDARDS AND THE COOPERATIVE PROVISION:

A BRIEF

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¹²⁸ Brian Day, 'ICAO's Role In Disaster Preparedness, Planning And Response' Available At [Http://www.aai.aero/Seminar_Presentation/ICAO_Disaster.Jsp](http://www.aai.aero/Seminar_Presentation/ICAO_Disaster.Jsp) (Last Visited On August 4, 2014).

¹²⁹ Available At [Www.icao.int/Publications/Pages/Doc7300.aspx](http://www.icao.int/Publications/Pages/Doc7300.aspx) (Last Visited On August 4, 2014)

¹³⁰ *Ibid*

¹³¹ *Supra* Note 1

SAR features as a legal obligation in Article 25 of the Chicago Convention which states that “ *each contracting State undertakes to provide such measures of assistance to aircraft in distress in its territory as it may find practicable ... each, contracting State, when undertaking search for missing aircraft, will collaborate in coordinated measures which may be recommended from time to time..* ”.¹³²

These coordinated measures are expressed as Standards and Recommended Practices (SARPs) in *Annex 12* to the Convention.¹³³ They cover matters of establishment, maintenance and operation of SAR services both in territories of Contracting States and over the high seas.¹³⁴

The first Standard articulated in the Annex requires that “Contracting States shall arrange for the establishment and provision of search and rescue services within their territories. Such services shall be provided on a 24- hour basis.”¹³⁵

The Annex goes on with SARPs that provide for delineated areas of responsibility, Rescue Coordination Centers (RCCs), communications facilities, rescue units and rescue equipment. These make up some of the fundamentals of an organization. Third chapter in the Annex, is headed “Co-operation”. The fact that an entire chapter in this Annex is dedicated to cooperation is indicative of its importance. The researcher would like to focus on some aspects of this vital concept of cooperation, particularly cooperation between States within a region and cooperation between administrators (by which is meant planners, regulators and managers) and RCC operations personnel.¹³⁶

Unlike other aviation services, which are examples of physical sciences designed to meet both a commercial end, SAR requires the exercise of some highly refined social sciences and has as its end the preservation of endangered human life. The specialness of SAR, then, lies in its humanitarian ethic, as distinct from other services commercial imperative.¹³⁷

Annex 12 is extensively expanded upon in the International Aeronautical and Maritime Search and Rescue (IAMSAR) Manual, a joint publication of ICAO and the International Maritime Organization (IMO).¹³⁸

At its outset, the IAMSAR Manual acknowledges the impracticality of State SAR administrations taking sole responsibility for the provision of all the resources necessary to conduct SAR operations. For some

¹³² International Civil Aviation Organization (ICAO), *Convention On Civil Aviation (“Chicago Convention”)*, 7 December 1944, 15 U.N.T.S. 295, Available At [Http://Www.Unhcr.Org-/Refworld/Docid/3ddca0dd4.html](http://www.unhcr.org/refworld/docid/3ddca0dd4.html) (Last Visited On August 5, 2014)

¹³³ *Ibid*

¹³⁴ *Ibid*

¹³⁵ *Infra* Note 10 At 69

¹³⁶ *Ibid*

¹³⁷ Michael Milde, *International Air Law And ICAO 70* (Eleven International Publishing, 2008)

¹³⁸ *Ibid*

states, not a few, it is impossible for them to do so; it is simply beyond their financial capacity to provide every necessary resource. This is the primary reason for the development of co-operative policies between agencies within States and between States themselves: to make provision for the shared use of assets. There are many other benefits that are to be derived from cooperation at various levels and the IAMSAR manual expounds on these. It encourages cooperation between government and industry, civilian and military, aeronautical and maritime, air traffic control and SAR.¹³⁹

Cooperation, in short, is the key to each State meeting its obligations under the Chicago Convention. In isolation, few States could meet their obligations; in cooperation, almost every State can satisfy its own SAR needs effectively and affordably and, at same time, assist other neighboring States to meet theirs.¹⁴⁰

THE GLOBAL CONCEPT AND CONCEPT OF SERVICES

From an organizational viewpoint, the contemporary application of this principle of cooperation is spelt out in the IAMSAR manual under the heading “The Global Concept”. The Manual defines the ICAO’s goal as being “to provide a world-wide SAR system that will provide assistance to all persons in distress regardless of nationality or circumstance.”¹⁴¹ It goes on to observe that the fastest, most effective and practical way to achieve this goal is to develop regional systems associated with each ocean area and continent.¹⁴²

Aviation organizations have a particular characteristics that set them apart from organizations in general. They are part of a sub-set referred to as high technology and reliability organizations that provide goods and services deemed to be critical to society. Nuclear energy and defense are cases in point. Defense is high risk because of the venturous nature of military activities and because a mistake may lead to unacceptable consequences.¹⁴³

International aviation still enjoys low levels of risk but the accidents that do occur emphasize how the industry is associated with extremely high stakes.¹⁴⁴ Aeronautical SAR, risk wise, is set somewhere between defense activity and regular aviation operations but is firmly placed in the context of extremely high stakes. Within all these types of organizations, it is reliability rather than productivity that is the overriding goal. The focus in these organizations- the focus in the provision of SAR – must be on extremely reliable operations.¹⁴⁵

¹³⁹ *Ibid* At 71

¹⁴⁰ *Ibid*

¹⁴¹ *Supra* Note 1

¹⁴² International Maritime Organization, *Iamsar Manual: International Aeronautical And Maritime Search And Rescue Manual* 2001 (O.M.I, 2002)

¹⁴³ *Supra* Note 10 At 72

¹⁴⁴ Ruwantissa Indranath Ramya Abeyratne, *Aviation In Crisis* 117 (Ashgate Publishing Ltd., 2004)

¹⁴⁵ *Ibid*

There is a tension in the contemporary circumstances. At the same time as the nature of the SAR task is demanding organizational stability and reliability, society is a subject to unprecedented and continuous change. There is change technically, change socially, change economically and change politically. There is only, ever, it seems, change. There have been dramatic improvements to the technical aspects of both aircraft and air traffic management systems over the past few decades. At the same time, satellite technology has gone a long way to minimizing the search element of search and rescue. The technology being brought to bear is at once smart and complex. But while it has the potential for wide application and greatly improving system effectiveness, it introduces a new realm for error in which cause and effect are much more difficult to find out.¹⁴⁶

In that regard, while there have been constant improvements in technology and management practices, it is significant that human errors are remaining constant over time, as a result, accidents continue to happen and the requirement for an effective SAR service will continue into the foreseeable future. Within the SAR system itself, risk of operational error remains real, not least because of the sweeping changes in the environment in which SAR is provided and the impact of these changes on the SAR work force.¹⁴⁷

Some SAR organizations have responded decisively to contemporary pressures. With changes in the demands on the service, some providers have reorganized to react more flexibly. They have, for example, commissioned joint maritime and aeronautical RCCs and established work forces of multi-skilled operators.¹⁴⁸ But as RCCs have responded to external forces, internal pressures have grown in turn and introduced scope for errors of a different magnitude and type. This new circumstance has been brought about by changes to job functions, responsibilities, and skill and knowledge requirements within the RCC.¹⁴⁹

An increased reliance on IT has resulted, along with several benefits, in new challenges within the RCC. The ever-greater capabilities of IT have been accompanied by increased complexities.¹⁵⁰

Skill demands have grown and the cycle of change betting has been reinforced. Indeed, in the RCC, as in every modern workplace, new technology and the demands of industry and society have led to the very re-conceptualization of work. As new work practices have evolved, those practices have spawned a covering policy and that policy has given rise to expectations of ever-higher levels of service.¹⁵¹

¹⁴⁶ *Ibid* At 118

¹⁴⁷ ICAO/IMO Joint Working Group On Harmonization Of Aeronautical And Maritime Search And Rescue Available At [Http://Legacy.Icao.Int/Icao-Imo-Jwg/Meetings/Jwg-14/-Do-Cs/JWG_SAR14wp01.Pdf](http://Legacy.Icao.Int/Icao-Imo-Jwg/Meetings/Jwg-14/-Do-Cs/JWG_SAR14wp01.Pdf) (Last Visited On August 7, 2014)

¹⁴⁸ *Ibid*

¹⁴⁹ Federal Aviation Administration, *Federal Aviation Regulations/ Aeronautical Information Manual 2009* (Skyhorse Publishing Inc., 2008)

¹⁵⁰ *Ibid*

¹⁵¹ *Supra* Note 20

This has happened almost incidentally. All this has occurred in an environment of organizational transition. Traditional organizational boundaries have become blurred, fused and uncertain.¹⁵² As a result, there is a threat of SAR services being driven more by change and technology than by carefully considered Standards developed in anticipation of the industry's needs. Standards should be proactive, not reactive. It is now time for planners and managers to catch this tiger by the tail and reassert their authority.¹⁵³

On the one hand, the pressures of user requirements, technological innovation and social change are demanding that the SAR system becomes more adaptable, innovative and sophisticated. On the other hand, the establishment of standards ever further beyond the reach of some States is to guarantee weak sections in the fabric of the global system. There is, then, a risk that the intervention of chance will exploit system weakness and culminate in catastrophe. A regional organizational strategy can, however, strengthen the weak links and lead to a more effective worldwide service coverage.¹⁵⁴

THE PERSONAL DIMENSION: FOCUSING ON THE BIG PICTURE

There is another perspective that cannot be neglected. It takes us to the junction of organizational change and workplace performance. It has to do with the impact of change on personal wellbeing. The steep learning curves, the constant re-structuring and the high stakes of SAR activity are making RCC environments characteristically volatile. The on-going volatility impacts on staff create stress, disillusionment, fear of jobless and a general lack of uncertainty.¹⁵⁵

After years, there is a growing realization that what is needed in high reliability systems is not just technical investment but socio-technical investment. This requires, at the start, an acknowledgement that at the core of operations, still and for the foreseeable future, are the humans.¹⁵⁶

To advance this approach, we must come to a fundamental understanding of the nature of human needs, of personality and motivation. Researchers agree that it is highly likely that motivation, to some extent, is a product of and individual's personality. Personality, further, will change, with the environment within which persons function. Managers can strongly influence that environment.¹⁵⁷

Workers, especially high achievers, seek after power, not so much power over others but opportunity to give expression to their own potential, over tasks and over challenges. It's for managers to so empower them. There is, then, a substantial role for managers to play in facilitating frontline operator's high

¹⁵² *Ibid*
¹⁵³ *Supra* Note 22
¹⁵⁴ *Supra* Note 17 At 120
¹⁵⁵ *Supra* Note 1
¹⁵⁶ *Ibid*
¹⁵⁷ *Supra* Note 10 At 78

performance. By doing this, managers can both satisfy workers aspirations and proactively guard against human error.¹⁵⁸

It might be then that in hearing of human errors, managers detach a little and think of the source of errors as the aircraft cockpit, the ship bridge or, in the case of SAR mission coordination, the RCC alone. That would be a serious mistake. Some findings of accident investigations have highlighted the ineptitude of managers and planners more than the front line personnel and exposed their procedures, arrangements and system construction as primary accident causal factors.¹⁵⁹

In summarizing the events leading to the capsizing of the Herald of Free Enterprise, and after acknowledging the active errors of the ferry crew, Mr. Justice Sheen said, "... *the underlying faults lay higher up in the company ...from top to bottom, the body corporate was infected with the disease of sloppiness ...*"¹⁶⁰

The principle is clear. Error attributable to human factors should be of as much concern to managers as it is to front line operators. Both managers and staff, officers and men, have direct responsibility for safe practice. Underpinning all safe practice must be a sound organization, sufficient training, proper procedures and a lively, health work ethic.

In this connection, ICAO has recently produced a document entitled Human Factors Guidelines for Air Traffic Management Systems,¹⁶¹ some of the content of which would be helpful to SAR managers. It gives guidance on how a proactive approach to safety can assist in accident prevention. This, of course, is the mainstay of preventive SAR.

CONCLUSION

In an aviation environment in which so much is changing: technology, organization and traffic density, and yet much of consequence remains the same, the human factor being the most important, the challenge to States is to apply the proven elements of the *Chicago Convention* in a way most relevant to contemporary needs.¹⁶²

This, in short, means to uphold the Standards of *Annex 12* in a spirit of cooperation, with a vision that extends beyond insular practices and geographic boundaries and as a willing participant in the global SAR

¹⁵⁸ *Ibid*

¹⁵⁹ M.A Butler And Verschoor-Diederiks, *An Introduction To Air Law* (Kluwer Law International, 2006)

¹⁶⁰ Sheen, 1 Maurino, Reason, (Johnston & Lee, 1995)

¹⁶¹ Gorton Slade, *Air Traffic Control Modernization* 29, (Diane Publishing, 1998)

¹⁶² *Supra* Note 10 At 80

plan.¹⁶³ With the challenges faced by State authorities are increasing in number and complexity, the provisions of the *Chicago Convention* stand on a foundation of long and satisfactory service provision.

The researcher is of the opinion that these would continue to stand out the test and give lead in the delivery of the special service of Search and Rescue well into the 21st century. Being partially correct in the hypothesis, the researcher would like to conclude that the best strategy for optimizing work place performance in the SAR domain and, at the same time, minimizing the incidence of operational errors, is to design systems that are human-centered, make plans that are responsive to human capabilities and limitations, and give encouragement for the full expression of workers potential.



The LAW BRIGADE

¹⁶³ *Supra* Note 34 At 30