

OmnisMS™

Omnis: word-forming element meaning "all," from Latin omni-, combining form of omnis "all, every, the whole, of every kind,"



Aviation Management System

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Foreword

OmniSMS™v4 represents the latest refinement of Omni Air Group's award-winning SMS database. From its humble beginnings in 2007 as Incident Reporter v1 (created to help FedEx manage events on their feeder ramps), IR versions 2.0 - 2.3 incorporated ICAO, Transport Canada and FAA requirements for risk assessment, accountability, documentation and controls. IR versions 3.0 - 3.4 aligned ICAO/FAA SMS Frameworks and provided a web accessible reporting interface.

Today's OmniSMS™ is a true web application designed for iPad / tablet and mobile devices. Operational Risk Assessments (aka FRATs / GRATs) are configurable for any type of flight mission or ground activity, and easily completed using a mobile phone.

- **Reactive safety risk management** is now barrier-based and uses the [ARMS Working Group's Event Risk Classification \(ERC\)](#) methodology to more accurately assess risk associated with occurrences.
- **Proactive risk management** begins with a 'system description' (which can range from a simple description for a procedure change to a comprehensive initial system description), and permits analysis of more than one 'top event' (risk) as well as multi-dimensional risk assessments.
- **Predictive risk management** programs such as FDM / FOQA and LOSA-Flight / [LOSA-Mx / LOSA-Ramp](#) are also supported, using Threat and Error Management (TEM) taxonomies and a 'Safety Trend' issue type.

Customer service, quality and safety-related issues of any kind can now be effectively managed using this powerful and flexible system. Taxonomies that support air operators, airports, air traffic service organizations, maintenance/repair organizations, manufacturers, flight schools, fixed base operators and emergency medical service providers are all fully configurable and scalable, while remaining sufficiently structured to properly organize and trend data.

OmniSMS™ v4 is not backwards-compatible with previous versions of Incident Reporter, due to significant changes in design and functionality. However, Omni staff supports users of IR and migration of their data into the OmniSMS database, with recommendations regarding which data and how much previous data clients should retain. Omni currently recommends that 2 years' worth of past data* be retained, for purposes of baseline performance measurement, safety KPIs, and the setting of safety and operational performance improvement goals.

Perhaps the two most significant improvements made to OmniSMS™ v4 are:

1. The move to a barrier-based view of occurrences and safety issues through the application of [positive interventions](#) and the Flight Safety Foundation's [Basic Aviation Risk Standard](#); and
2. The integration of industry-proven occurrence reporting, risk assessment, and root cause analysis methods. These methods utilize:
 - a. ICAO/CAST [hazard](#) and [occurrence](#) taxonomies;
 - b. US DOD's [Human Factors Analysis and Classification System](#) (HFACS and HFACS ME);
 - c. Boeing's [MEDA](#) and [REDA](#) event investigation methodologies;
 - d. Omni's proprietary root cause analysis method, which originated with the [Safety through Organizational Learning \(SOL\)](#) model.

These time-tested and proven methods of identifying errors and the human and organizational factors that contribute to unwanted events are brought together within OmniSMS™ to produce a powerful and effective management system that remains configurable, scalable, and user-friendly.

**Civil Aviation Authority requirements vary, and may require longer term data storage.*

Every effort has been made to make OmniSMS™ intuitive. We've built guidance into the application itself through the use of 'life rings' tooltips, and information icons. Omni also offers SMS eLearning courses that are aligned with the concepts and terminology used herein. ICAO's *Safety Management Manual* (Document 9859), Transport Canada's *Advisory Circular AC 107-001*, FAA's *Advisory Circular AC 120-92B* and *SMS Voluntary Program Guide (SMSVP)* are further sources of information for those wishing to learn more about SMS and current North American risk management requirements.

As always, we welcome your input as to how we can improve our products and services. Please email or call with your requests and we will do our best to respond promptly. We trust your use of OmniSMS™ v4 will make your job a little easier, your operations run smoother, and your employees and customers safer.

Sincerely,

Paul Salerno

Paul Salerno, Pres.
Omni Air Group, Inc.

Acknowledgements

Airline Risk Management Solutions (ARMS) Working Group

Boeing Commercial Airplane Company

CAST/ICAO Common Taxonomy Team

Commission on Accreditation of Medical Transport Systems

European Aviation Safety Agency

Federal Aviation Administration

Flight Safety Foundation

International Air Transport Association

International Civil Aviation Organization

Transport Canada

United Kingdom Civil Aviation Authority

United States Department of Defense

United States Coast Guard

Our thanks to the organizations above and the many individuals involved for their development of aviation safety / quality management concepts and guidance for industry.

1. OMNISMS™ OVERVIEW

A. SYSTEM DESIGN

OmniSMS™ is intended to be used as a combined safety and quality management system for managing safety risks, quality assurance, environmental protection, occupational health, and customer service issues. Using structured data sets from global aviation sources, the system permits effective data collection, trending and reporting, in full compliance with current global standards for aviation safety management systems.

Key elements of the OmniSMS™ aviation management system include:

- OmniSMS web application – Mobile-optimized, configurable and scalable, with compliant processes;
- SMS Manual - Comprehensive, editable, aligned with, and delivered within the web application;
- Emergency Response Plan – Editable and delivered within the application;
- Internal Evaluation Program – Editable, aligned with SMS requirements, and with audit checklists included;
- SMS e-Learning courses - For personnel and managers, initial and recurrent, generic or bespoke;
- Free SMS consulting and implementation assistance.

Together, these elements produce one of the most comprehensive and effective aviation safety and quality management systems available today.

B. DEVELOPMENT GUIDANCE

OmniSMS™ was developed in accordance with guidance contained in:

- ICAO Document 9859: **Safety Management Manual**;
- IBAC's IS-BAO: **International Standard for Business Aviation Operations**;
- Transport Canada's AC 107-001: **Guidance on Safety Management Systems Development**;
- FAA Order 8900.1 Volume 17, Chapter 4: **Safety Management System Voluntary Program**.

When properly implemented, the OmniSMS system meets all regulatory requirements of the standards above as they apply to safety management systems.

2. SMS MANUAL & PROGRAMS

The OmniSMS Manual, ERP and IEP are aligned with FAA's SMS Voluntary Program standard, to produce standardized and auditable documents that are familiar to regulators. The SMS Manual contains a detailed table of contents (TOC) with links to all paragraphs and includes specific regulatory references (SRRs). These features make finding information fast and easy, in addition to facilitating design validation by regulators.

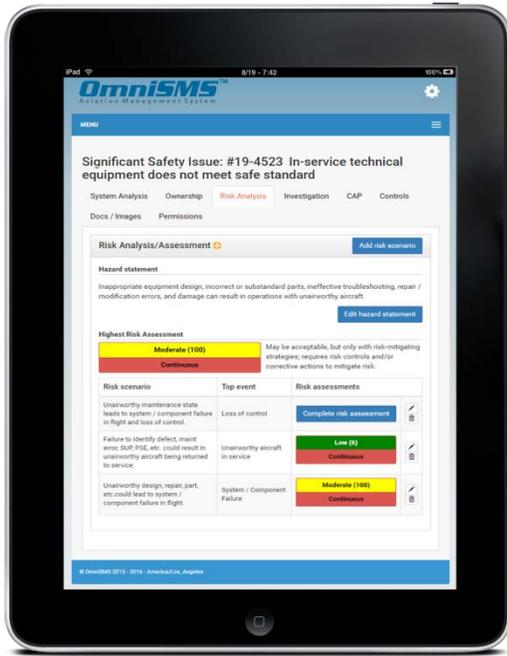
The SMS Manual provides guidance and procedures for many processes which are performed within the OmniSMS web application. It is delivered within the application in MS WORD format for editing by system administrators. Upon editing and review, the admin user converts the document to .pdf format and uploads the document back into the application for web delivery to users as a non-editable PDF document.



3. OMNISMS WEB APPLICATION

A. UNIQUE AND CONFIGURABLE

Each client organization is provided with its own unique instance of the application, which is tied to a central database. This allows each instance to be branded, configured, scaled and customized to meet each client’s needs. Your system administrator begins this process with **system configuration**, whereby administrators hide terms that do not apply to their operations, and create their own terms for the many hazard, occurrence, barrier, and other taxonomies provided.



Job titles, employee groups, locations and bases are further created, functional areas are aligned with organizational structure, and equipment / ATA codes are configured to match the organization’s needs.

System configuration produces an **initial system description**, which is reviewed by management (at least annually) as part of the required management review process. During system configuration (which should be done in a group setting with appropriate functional area managers present), the many taxonomy terms presented stimulate thought processes and brainstorming, enabling effective identification of hazards throughout the system. These hazards form the basis of the organization’s **significant safety issue list** (aka Safety Risk Profile). Decisions are also made at this time regarding what types of occurrences will be presented on the employee reporting form, and the level of granularity desired in occurrence reporting.

B. OPERATIONAL RISK ASSESSMENTS

Operational risk assessment (aka a Flight Risk Assessment Tool, or FRAT) is not mandated by Transport Canada SMS requirements nor FAA’s SMSVP standard. Such a tool is however required by the IS-BAO SMS standard and others.

OmnisMS addresses this requirement by allowing administrators and department managers to create operational risk assessment (ORA) templates for any type of activity or mission. Each template is named and the type of ORA is defined either as: **Flight** (or) **Non-flight**. Like the rest of the OmnisMS application, ORA templates are fully customizable, including hazard groupings, hazard / threat terms, weighted values, and mitigation thresholds.

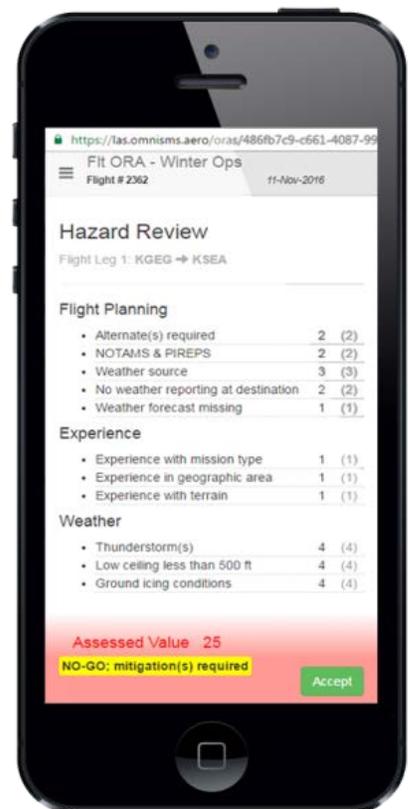
ORAs are mobile-optimized for convenience when used by flight crews in the field. A wifi signal or cell phone data connection is required to use this feature.

For more detailed information, please see the documents:

*Inside the OmnisMS™ Web Application**

*Online Reporting with OmnisMS**

[OmnisMS Data Security Policy](#)



*Under revision

4. SMS E-LEARNING

A. E-LEARNING CENTER

The [OmnSMS e-Learning Center](#) is accessed from within the OmnSMS application with single sign-on ease, and courses may be taken at the learner's convenience using an iPad, laptop, or desktop workstation. Professionally developed courses teach the practical application of SMS in short, 15-30 minute modules with a quiz at the end of each module. Progress is saved and a certificate of completion is provided to the learner promptly upon completion.

Courses include initial and recurrent SMS training for personnel, and initial / recurrent training for managers and safety staff. Topics covered include building a positive safety culture, roles & responsibilities, hazard identification, confidential reporting of errors, human factors, organizational safety, risk management, event investigation and analysis techniques, audit principles, and others.

All courses are included with your OmnSMS subscription, and are made continuously available throughout the year. Utilizing the system's manager role, managers may enroll their group members, track progress, and access student transcripts and training certificates for individual training files.

[Sample an SMS eLearning course for managers](#)



B. BRANDING AND BESPOKE COURSES

OmnSMS subscription clients may request a branded eLearning portal with their name and company logo. Customized and bespoke courses are also available for an additional charge, such as those that Omni has developed for [Thai Airways'](#) Flight Safety Department and [Jet Aviation AG](#) of Zürich, Switzerland.

5. RELIABILITY, SECURITY, AND LIABILITY PROTECTION

Professional system development and infrastructure provide OmniSMS clients with high reliability, maximum security, and protection from potential liability.

A. RELIABILITY

OmniSMS employs the same state-of-the-art co-location facilities used by financial institutions to ensure your sensitive safety data is secure and delivered at 99.9% uptime reliability. All servers have redundant power supplies and multiple redundant drives. Your data is automatically backed up every hour, and the system is backed up every night.



B. PRIVACY AND SECURITY

All communications with your OmniSMS application use SSL (Secure Socket Layer) protocol to ensure the highest level of security. Security is further enhanced with intrusion detection / protection, anti-virus software, and access logs at the user level. Omni's formal data security policies are strictly enforced. This includes procedures for classification of data, access control, use of authentication devices, and the application of RSA Keys encryption @ 128 bits. Additional safeguards include:

- Multifactor facilities authentication via electronic key, PIN access, and biometric scan;
- Redundant and diverse UPS systems with multiple on-site diesel generators;
- Advanced fire detection & suppression;
- Temperature controlled environment;
- Unparalleled fiber infrastructure;
- Closed-circuit surveillance
- Zone 4 earthquake rated
- Raised anti-static floors



C. LIABILITY PROTECTION

A Safety Management System requires, among other things, the identification of hazards through continuous monitoring of daily activities and system / task analysis, internal auditing, a method for employees to report hazards, errors and events, and procedures for managing risk and following up to ensure that implemented risk controls remain effective. When the SMS reveals systemic deficiencies or other problems within your organization, potential liability exists if these issues are overlooked or not handled properly. This is why OAG designed **controls** into the system, to ensure that nothing “slips through the cracks”. These controls include email reminders of event investigations, Corrective Action Plan development, risk controls, and follow-up audit due dates. Additional controls prevent the closing of risk management records until all risk controls and follow-up audits have been satisfactorily performed. **Controls not only assure task completion, they also help to reduce any potential liability that may exist when organizational or systemic deficiencies are reported.**

6. MORE ABOUT THE OMNISMS™ WEB APPLICATION

A. ONLINE REPORTING AND ASAP

OmniSMS includes an optional Aviation Safety Action Program (ASAP) feature. System administrators activate the feature, define employee groups covered by the ASAP and edit message(s) delivered to employees on the web-based reporting form. The ASAP feature was built in accordance with FAA [Advisory Circular AC 120-66B](#) and guidance contained in the American Institutes for Research document: [Best Practices for Event Review Committees](#).

Integrating ASAP with your organization’s hazard / occurrence reporting system has several advantages:

- A single point for reporting is provided for all employee groups;
- Investigations of occurrences and potential violations are performed concurrently within the application;
- Identified violations can be counted toward safety performance indicators;
- Limited FAA access to your SMS can be provided under conditions that you formally specify in your Memorandum of Understanding.

B. VDRP REPORTING

The OmniSMS Manual contains guidance regarding Voluntary Disclosure Reporting Program (VDRP) submissions. When a violation is disclosed, the required comprehensive fix can be created within OmniSMS, including assignment and tracking of risk controls, corrective actions, monitoring, and follow-up activities. By providing FAA principal inspectors with access only to ASAP and VDRP reports, investigation forum results can be shared, corrective action(s) agreed upon, and a relationship of mutual trust is retained with principal inspectors that extends to the SMS database itself.

C. SMS PROCESS GUIDANCE AND CONTROLS

The OmniSMS application offers many features and controls which ensure quality process outputs and retention of records. One key element of OmniSMS’ efficacy is the program’s integration of *‘liferings’*, which provide guidance to users and managers.

For example, **Event Risk Classification** is a relatively new concept in reactive risk management. It requires analysis of the effectiveness of the barriers and controls which prevented the actual event from escalating into an incident or accident scenario. By analyzing the barriers and controls that worked and remained in place (as opposed to those that failed), faster and more accurate risk assessments can be made.

In another example, supervisors and managers are provided with guidance on how to develop more effective risk controls using a **preferred order of controls**. An understanding of this principle also improves managers’ ability to assess and critique contractors’ proposed risk controls and corrective actions regarding safety concerns for which contractors or vendors are responsible.

An online demonstration of how these processes work within the OmniSMS application is available on request.

The screenshot shows the 'Risk Management > Reports' interface for an occurrence report titled 'Occurrence (Ramp Safety Report): #220518 Fuel spill'. The report is categorized under 'ERC / Outcomes'. The main section is 'Interventions / Barriers / Controls', which includes an 'Add barrier' button and a table with the following data:

Control / barrier	Description
Emergency shutoff	Was not needed.
Stopped work / operations	No vehicles were allowed to move until spill contained.
Environment observation	When spill was detected, further access to area was restricted and monitored.
Visual detection	Fuel spill was detected visually before it became hazardous.
Monitoring	Monitoring of fueling operations.

A tooltip is displayed over the table with the text: 'What was the effectiveness of the remaining controls / barriers between this event and the most credible accident scenario? To understand the remaining "safety margin", consider both the number and robustness of remaining barriers. Barriers that failed are ignored (they will be analyzed during investigation). Only the barrier which worked and any subsequent barriers still in place should be taken into account.'

Below the table is a section for 'Flight delay/interrupt' with a '+' button and a table:

Type	Cause	Description
Flight delay	Ground servicing	Delay of 30 minutes as the area was cleaned up before moving the aircraft.

On the right side of the interface, there are sections for 'Event Risk' and 'Outcomes'.

7. OMNISMS SETUP AND SUPPORT

A. ON-SITE ASSISTANCE

Jump-start your SMS effort with a 2-day on-site setup and support workshop from one of Omni Air Group's principles, each with more than 30 years' experience in the airline industry. As the system is configured and stakeholders offer their input regarding reportable occurrences, hazards / threats and barriers / controls, your initial system description is built; key safety performance indicators are established; a safety risk profile is created; and tasks are agreed upon. SMS implementation is a big job, and we are here to support you.

B. CONSULTING

Omni Air Group's principal managers have more than 60 years of combined experience as owners, operators, and key managers of various aviation enterprises, including airline operations under Parts 135 and 121 of the Federal Aviation Regulations. We have real world, hands-on experience with growth, safety culture development, downsizing, acquisitions, certificate actions, incidents, and accidents. We are also SMS experts, and offer our free telephone consulting advice at no charge to those clients who wish to consult with us. All information shared is kept strictly confidential.

C. TECHNICAL SUPPORT

Omni Air Group provides technical support via telephone and email. We are a relatively small company, and pride ourselves on prompt response times and customer satisfaction. If we don't know the answer to your question, we'll find out, fast.

8. ORDERING

A. TERMS AND CONDITIONS

Year 1 of your OmniSMS subscription is paid in advance, and includes license to use the SMS Manual template, supporting programs, audit checklists and SMS eLearning courses as end-user only. Thereafter, subscriptions are renewable on a monthly basis by placing a major credit card on file with us. Clients may also choose to pay their subscription fees annually and receive a 5% discount for annual payment. Your company check and all major credit cards are accepted. Returns are cheerfully accepted in accordance with our [Return Policies](#). All orders are typically processed in less than a week, depending on complexity and office workload.

B. PRIVACY

Omni Air Group treats all customer information as highly confidential. We do not provide information to third parties. For privacy and data security policies, please visit us on the web at [OmniSMS.aero](#).

For more information, please contact Omni Air Group:

Paul Salerno, President (or) Cheryl Bzdawka, Office Manager

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Omni Air Group's mission is to promote positive safety cultures by delivering the highest quality systems, services and training to our global aviation industry.