

Safety Management System (SMS)

Flight Standards Update

Presented By: Flight Standards Service



Federal Aviation
Administration



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What SMS is not and what it is...

What it isn't:

A substitute for compliance

A substitute for oversight

A replacement for system safety

A requirement for a new department

What it is:

Compliance is integral to safety management

An effective interface for safety management

SMS completes the systems approach

A set of decision making processes for senior and line management

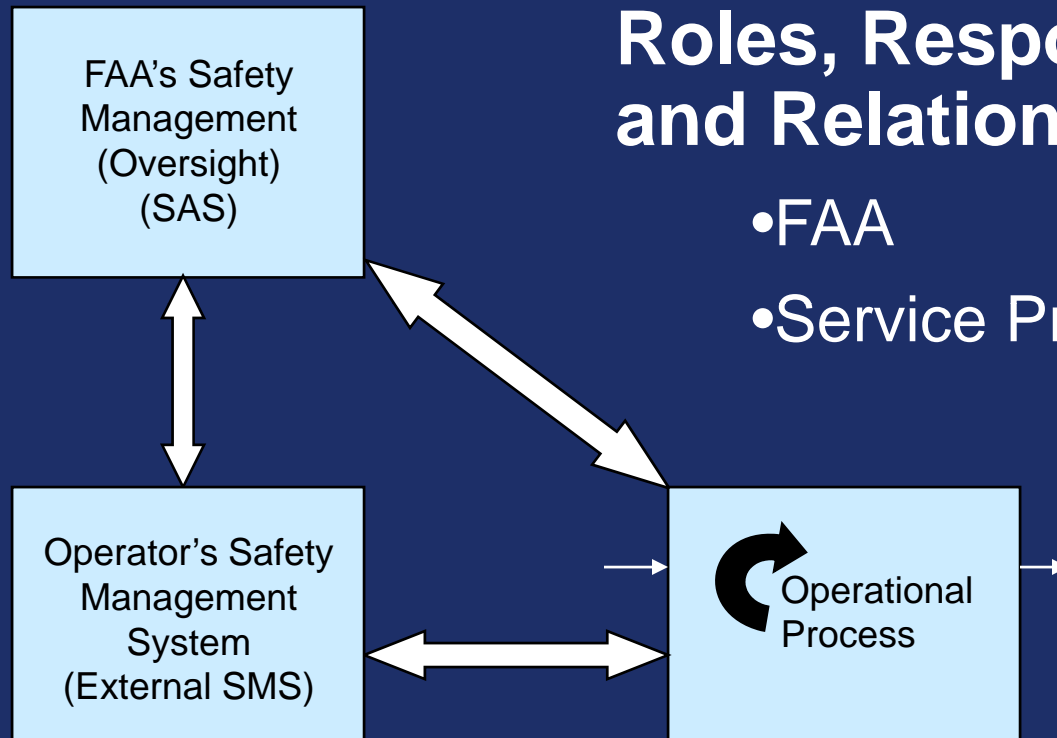


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Clarifying the “3 R’s”:

Roles, Responsibilities and Relationships:

- FAA
- Service Providers



ICAO Annex 6

- “From 1 January, 2009, **States shall require**, as part of their safety programme, **that an operator implement** a safety management system acceptable to the State of the Operator...”
- The U.S. has filed a difference with ICAO
- Currently, there are no FAA authorized procedures to accept or approve Service Providers’ SMS’s



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SMS Rulemaking

- **One rule for all types of service providers**
- **Aviation Rulemaking Committee (ARC)**
 - Associations representing industry
 - Working groups from service providers
- **Advance Notice of Proposed Rulemaking (ANPRM)**
 - Initial solicitation for information comment from public
 - No proposed rulemaking language
 - To be issued later this year



SMS Guidance and Tools



- ICAO Doc 9859: Safety Management Manual (SMM)
- FAA Order 8000.369: FAA SMS Guidance
- VS 8000.367: AVS Requirements Document
- SMS Standard: AC 120-92 Appendix 1
- Voluntary Implementation Guidance



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New Documents

- **SMS Framework**

- Supersedes Appendix 1 to AC 120-92 for SMS Pilot Project Participants
- Based on ICAO Frameworks

- **SMS Assurance Guide**

- Based on process flows
- Incorporate ATOS attributes
- Aligns with element/process structure of SMS framework



ICAO and FAA SMS Framework



Elements:

Elements:

1.1 Safety Policy

Elements:

- 4.1 Competencies and Training
 - Process 4.1.1 Personnel requirements
 - Process 4.1.2 Training
- 4.2 Communication and Awareness

3.2 Management of Change

3.3 Continual Improvement



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Start

System Analysis (Design)

Hazard Ident

Risk Analysis

Risk Assmt

Risk Control

Inputs: 2.0(B)(2)(a),(b) & (d)
•New System
•System Change
•New Operational Procedure

2.1.1

2.1.2

Inputs: 2.0(B)(2)(c)
From SA: 3.1.8(B)(3)

2.2.1

2.2.2

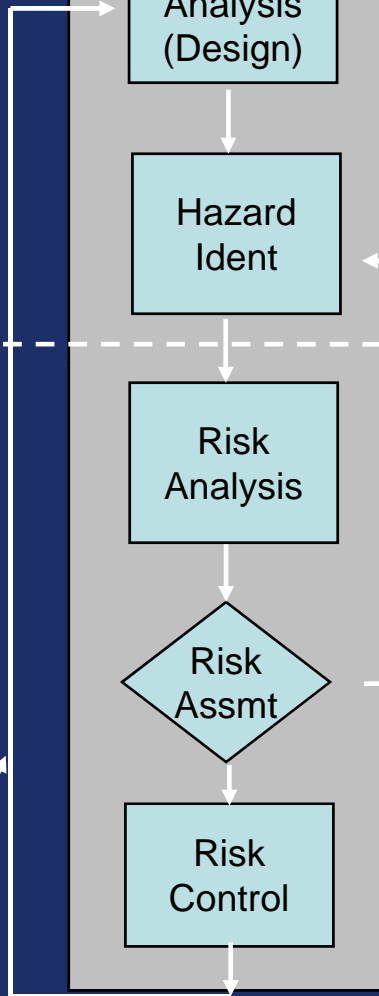
Outputs: To SA 3.0(B)(1)(b)

2.2.3

2.1 Hazard Identification & Analysis

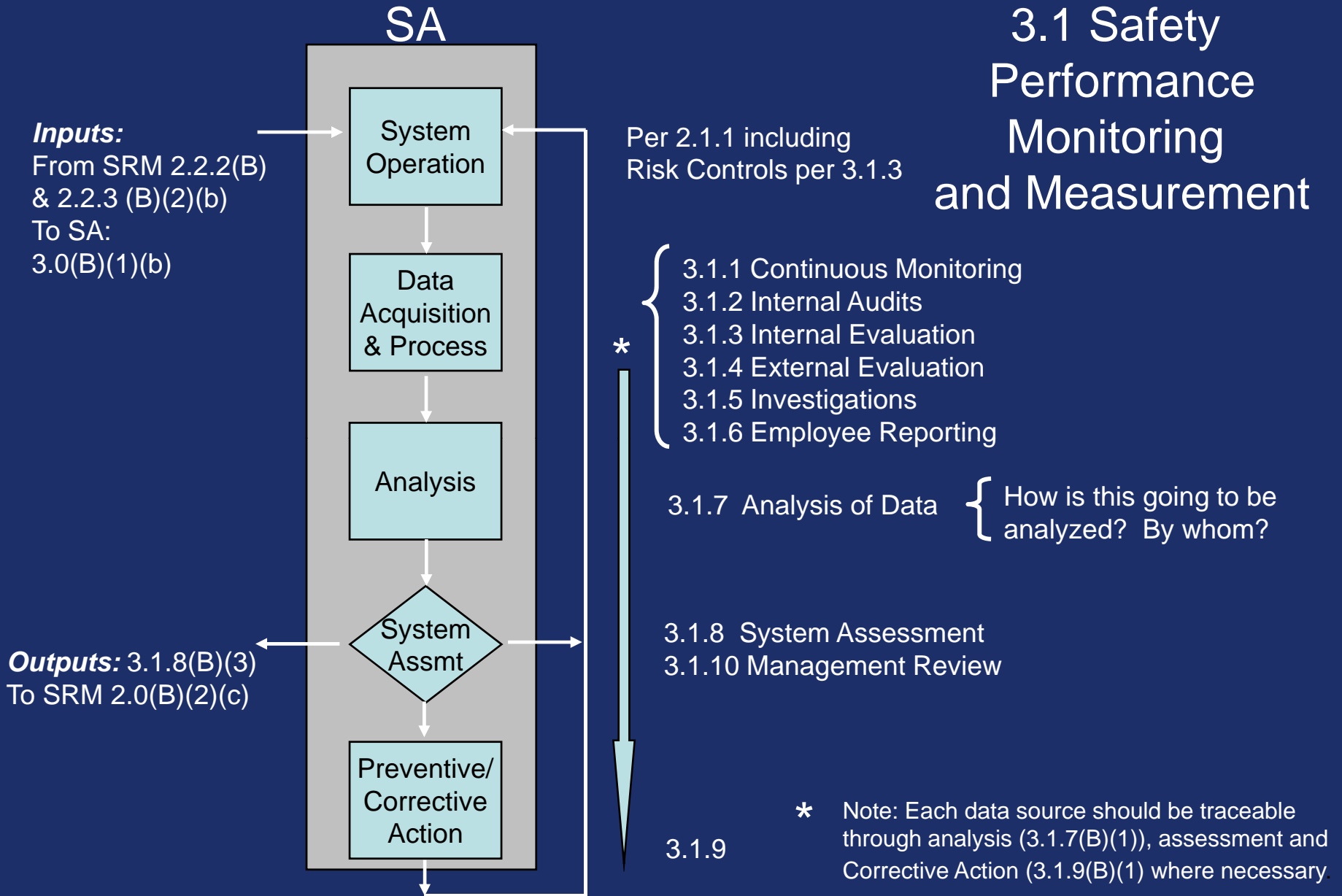
2.2 Risk Assessment & Control

Evaluate Controls
2.2.3(B)
(2) & (3)



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3.1 Safety Performance Monitoring and Measurement



SMS Voluntary Implementation: Pilot Projects

- Pilot Project activities commenced in 2007
- Voluntary SMS development
- AFS combined effort
- Objectives are to Develop:
 - Implementation strategies,
 - Oversight interfaces, and
 - Gain experience for FAA and Service Providers

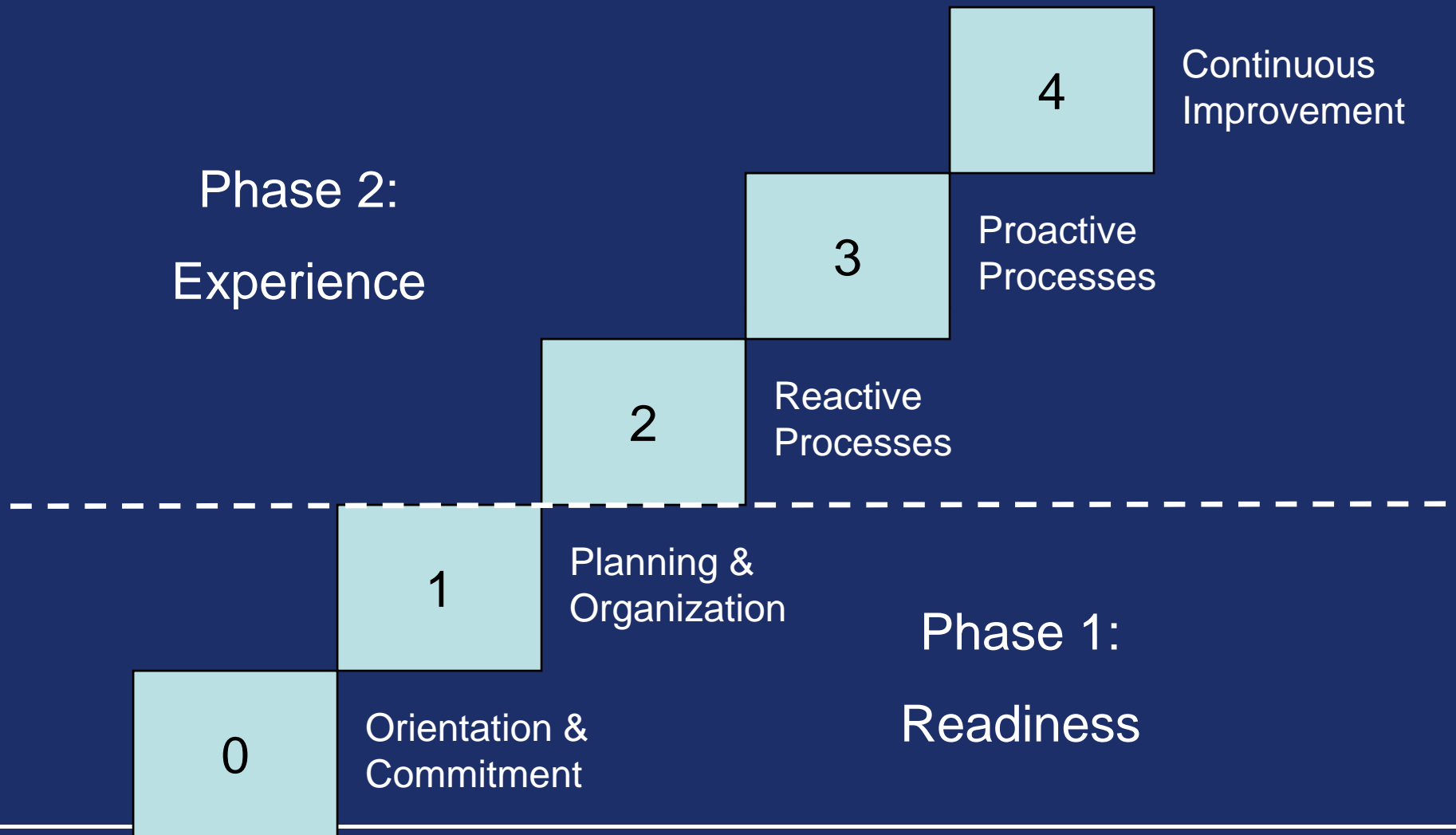


SMS Implementation Process







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SMS Studies and Analysis



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Legend:  : ≤ 29% (2/7s);  43% (3/7s) ≤  ≤ 71% (5/7s);  : ≥ 86% (6/7s)




















































































































































































AC 120-92 Standards	# Airlines w/Org-Wide Conformity	Flight Ops Conformity	Dispatch Conformity	Maintenance Conformity	Cabin Safety Conformity	Ground Ops Conformity	Cargo Ops Conformity
4. Policy							
4.1 General Requirements	0	 14%	 14%	 0%	 14%	 14%	0%
4.2 Safety Policy	1	 57%	 43%	 14%	 43%	 43%	43%
4.3 Quality Policy	1	 57%	 57%	 29%	 57%	 43%	29%
4.4 Safety Planning	1	 57%	 43%	 29%	 57%	 43%	43%
4.5 Organizational Structure & Responsibility	2	 57%	 57%	 43%	 43%	 43%	43%
4.6 Compliance with Legal and other Requirements	4	 100%	 86%	 71%	 86%	 86%	71%
4.7 Procedures and Controls	3	 86%	 86%	 71%	 71%	 86%	57%
4.8 Emergency Preparedness and Response	3	 86%	 86%	 71%	 86%	 86%	86%
4.9 Documentation and Records	2	 71%	 71%	 43%	 57%	 57%	29%
5. Safety Risk Management							
5. Safety Risk Management	1	 71%	 43%	 29%	 71%	 43%	14%
5.1 System and Task Analysis	1	 71%	 57%	 29%	 57%	 57%	29%
5.2 Identify Hazards	2	 57%	 57%	 29%	 71%	 57%	43%
5.3 Analyze Safety Risk	0	 43%	 71%	 57%	 43%	 43%	14%
5.4 Assess Safety Risk	1	 43%	 57%	 29%	 43%	 29%	14%
5.5 Control Safety Risk	1	 29%	 43%	 29%	 43%	 29%	14%
5.6 Operational Risk Management (New)	0	 43%	 43%	 14%	 0%	 14%	14%
5.7 Management of Change (New) (ICAO 3.2, AC 120-92 5.0.E)	0	 29%	 29%	 14%	 14%	 43%	29%
6.0 Safety Assurance and Internal Evaluation							
6.1 General Requirements	2	 43%	 43%	 57%	 57%	 43%	29%
6.2 System Description	2	 43%	 43%	 43%	 57%	 43%	29%
6.3 Information Acquisition	2	 43%	 29%	 43%	 43%	 43%	29%
6.3.1 Continuous Monitoring	1	 57%	 43%	 57%	 43%	 43%	29%
6.3.2 Internal Audits by Operational Departments	2	 57%	 57%	 71%	 43%	 43%	43%
6.3.3 Internal Evaluation	3	 57%	 57%	 71%	 43%	 57%	57%
6.3.4 External Auditing of the SMS	4	 57%	 57%	 71%	 57%	 57%	57%
6.3.5 Investigation	4	 100%	 86%	 71%	 86%	 86%	86%
6.3.6 Employee Reporting and Feedback System	1	 86%	 71%	 29%	 86%	 14%	29%
6.4 Analysis of Data	0	 71%	 57%	 29%	 29%	 29%	14%
6.5 System Assessment	1	 29%	 43%	 29%	 14%	 43%	29%
6.6 Preventive/Corrective Action	2	 57%	 57%	 29%	 71%	 57%	43%
6.7 Management Reviews	1	 43%	 57%	 29%	 29%	 29%	29%
6.8 Continual Improvement	1	 43%	 57%	 29%	 14%	 43%	43%
7.0 Safety Promotion							
7.1 Safety Culture	1	 43%	 57%	 14%	 43%	 29%	43%
7.2 Communication and Awareness	0	 29%	 43%	 0%	 0%	 29%	29%
7.3 Personnel Requirements (Competence)	0	 43%	 43%	 29%	 14%	 29%	29%
7.4 Training	1	 57%	 71%	 57%	 57%	 57%	43%
7.5 Safety Lessons Learned	1	 57%	 71%	 29%	 57%	 43%	29%

Figure 3. SMS Participant Scoring

“Carelessness and overconfidence are more dangerous than deliberately accepted risk”
Wilbur Wright, 1901

Contact:

SMS Program Office Manager

Don Arendt, Ph.D.

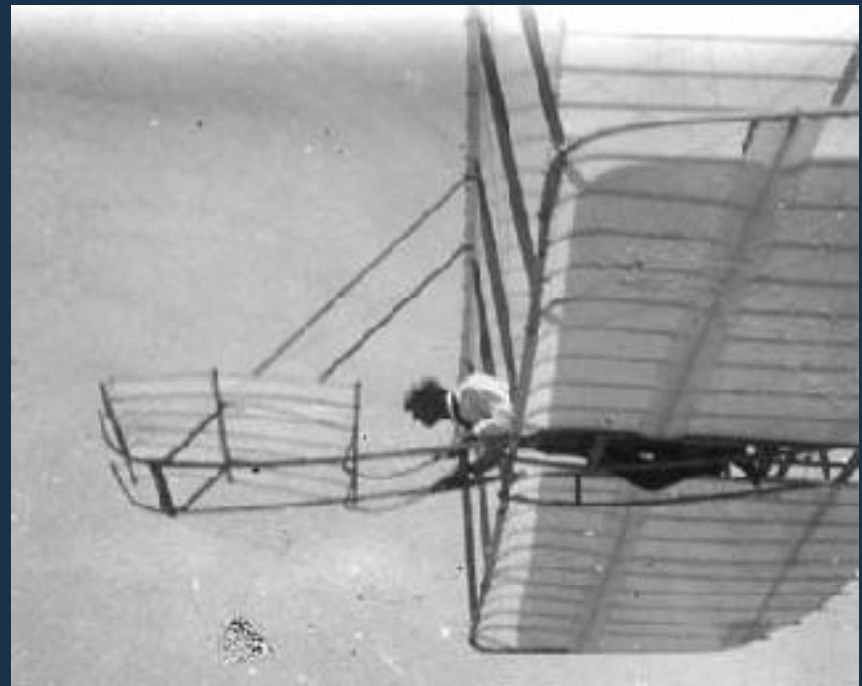
(703) 661-0516

(703) 338-7746 (c)

don.arendt@faa.gov



Wilbur Wright gliding, 1901
Photographs: Library of Congress



**Federal Aviation
Administration**