

1. Record Nr.	UNINA9910830259303321
Autore	Seabridge A. G (Allan G.)
Titolo	Aircraft systems classifications : a handbook of characteristics and design guidelines // Allan Seabridge and Mohammad Radaei
Pubbl/distr/stampa	Hoboken, New Jersey : , : Wiley, , [2022] ©2022
ISBN	1-119-77187-0 1-119-77185-4
Descrizione fisica	1 online resource (387 pages)
Collana	Aerospace
Disciplina	629.13334
Soggetti	Aeronautics - Systems engineering Airplanes
Lingua di pubblicazione	Inglese
Formato	Materiale a stampa
Livello bibliografico	Monografia
Nota di bibliografia	Includes bibliographical references and index.
Nota di contenuto	Cover -- Title Page -- Copyright -- Contents -- About the Authors -- Acknowledgements -- Sources of Background Information -- Glossary -- Chapter 1 Introduction -- Chapter 2 The Airframe and Systems Overview -- 2.1 Introduction -- 2.2 The Airframe -- 2.2.1 Impact on the structure -- 2.2.2 Impact on Atmosphere -- 2.2.3 Atmosphere Impact on Structure -- 2.2.4 The Crash Case -- 2.3 The Aircraft Systems -- 2.3.1 System Diagram -- 2.3.2 Key Characteristics of Systems -- 2.4 Classification of Aircraft Roles -- 2.4.1 Commercial -- 2.4.2 General Aviation -- 2.4.3 Regional -- 2.4.4 Long Haul -- 2.4.5 Military -- 2.4.6 Air Superiority -- 2.4.7 Ground Attack -- 2.4.8 Strategic Bombing -- 2.4.9 Maritime Patrol -- 2.4.10 Battlefield Surveillance -- 2.4.11 Airborne Early Warning (AEW) -- 2.4.12 Electronic Warfare -- 2.4.13 Photographic Reconnaissance -- 2.4.14 AirtoAir Refuelling -- 2.4.15 Troop and Materiel Transport -- 2.4.16 Training Aircraft -- 2.4.17 Unmanned Air Vehicles -- 2.4.18 Special Roles -- 2.4.19 Law Enforcement and Civilian Agencies -- 2.5 Classification of Systems -- 2.6 Stakeholders -- 2.7 Example Architectures -- 2.8 Data Bus -- 2.9 Summary and Conclusions -- References -- Exercises -- Chapter 3 Vehicle Systems -- 3.1 Propulsion System -- 3.1.1 Purpose of System -- 3.1.2 Description -- 3.1.3 Safety/Integrity Aspects -- 3.1.4 Key Integration Aspects -- 3.1.5

Key Interfaces -- 3.1.6 Key Design Drivers -- 3.1.7 Modelling -- 3.1.8
References -- 3.1.9 Sizing Considerations -- 3.1.10 Future
Considerations -- 3.2 Fuel System -- 3.2.1 Purpose of System -- 3.2.2
Description -- 3.2.3 Safety/Integrity Aspects -- 3.2.4 Key Integration
Aspects -- 3.2.5 Key Interfaces -- 3.2.6 Key Design Drivers -- 3.2.7
Modelling -- 3.2.8 References -- 3.2.9 Sizing Considerations -- 3.2.10
Future Considerations -- 3.3 Electrical Power Generation and
Distribution.
3.3.1 Purpose of System -- 3.3.2 Description -- 3.3.3 Safety/Integrity
Aspects -- 3.3.4 Key Integration Aspects -- 3.3.5 Key Interfaces --
3.3.6 Key Design Drivers -- 3.3.7 Modelling -- 3.3.8 References --
3.3.9 Sizing Considerations -- 3.3.10 Future Considerations -- 3.4
Hydraulic Power Generation and Distribution -- 3.4.1 Purpose of the
System -- 3.4.2 Description -- 3.4.3 Safety/Integrity Aspects -- 3.4.4
Key Integration Aspects -- 3.4.5 Key Interfaces -- 3.4.6 Key Design
Drivers -- 3.4.7 Modelling -- 3.4.8 References -- 3.4.9 Sizing
Considerations -- 3.4.10 Future Considerations -- 3.5 Bleed Air
System -- 3.5.1 Purpose of the System -- 3.5.2 Description -- 3.5.3
Safety/Integrity Aspects -- 3.5.4 Key Integration Aspects -- 3.5.5 Key
Interfaces -- 3.5.6 Key Design Drivers -- 3.5.7 Modelling -- 3.5.8
References -- 3.5.9 Sizing Considerations -- 3.5.10 Future
Considerations -- 3.6 Secondary Power Systems -- 3.6.1 Purpose of
System -- 3.6.2 Description -- 3.6.3 Safety/Integrity Aspects -- 3.6.4
Key Integration Aspects -- 3.6.5 Key Interfaces -- 3.6.6 Key Design
Drivers -- 3.6.7 Modelling -- 3.6.8 References -- 3.6.9 Sizing
Considerations -- 3.6.10 Future Considerations -- 3.7 Emergency
Power Systems -- 3.7.1 Purpose of System -- 3.7.2 Description --
3.7.3 Safety/Integrity Aspects -- 3.7.4 Key Integration Aspects -- 3.7.5
Key Interfaces -- 3.7.6 Key Design Drivers -- 3.7.7 Modelling -- 3.7.8
References -- 3.7.9 Sizing Considerations -- 3.7.10 Future
Considerations -- 3.8 Flight Control System -- 3.8.1 Purpose of System
-- 3.8.2 Description -- 3.8.3 Safety/Integrity Aspects -- 3.8.4 Key
Integration Aspects -- 3.8.5 Key Interfaces -- 3.8.6 Key Design Drivers
-- 3.8.7 Modelling -- 3.8.8 References -- 3.8.9 Sizing Considerations
-- 3.8.10 Future Considerations -- 3.9 Landing Gear -- 3.9.1 Purpose
of System -- 3.9.2 Description.
3.9.3 Safety/Integrity Aspects -- 3.9.4 Key Integration Aspects -- 3.9.5
Key Interfaces -- 3.9.6 Key Design Drivers -- 3.9.7 Modelling -- 3.9.8
References -- 3.9.9 Sizing Considerations -- 3.9.10 Future
Considerations -- 3.10 Brakes and Antiskid -- 3.10.1 Purpose of
System -- 3.10.2 Description -- 3.10.3 Safety/Integrity Aspects --
3.10.4 Key Integration Aspects -- 3.10.5 Key Interfaces -- 3.10.6 Key
Design Drivers -- 3.10.7 Modelling -- 3.10.8 References -- 3.10.9
Sizing Considerations -- 3.10.10 Future Considerations -- 3.11
Steering System -- 3.11.1 Purpose of System -- 3.11.2 Description --
3.11.3 Safety/Integrity Aspects -- 3.11.4 Key Integration Aspects --
3.11.5 Key Interfaces -- 3.11.6 Key Design Drivers -- 3.11.7 Modelling
-- 3.11.8 References -- 3.11.9 Sizing Considerations -- 3.11.10
Future Considerations -- 3.12 Environmental Control System -- 3.12.1
Purpose of System -- 3.12.2 Description -- 3.12.3 Safety/Integrity
Aspects -- 3.12.4 Key Integration Aspects -- 3.12.5 Key Interfaces --
3.12.6 Key Design Drivers -- 3.12.7 Modelling -- 3.12.8 References --
3.12.9 Sizing Considerations -- 3.12.10 Future Considerations -- 3.13
Fire Protection System -- 3.13.1 Purpose of System -- 3.13.2
Description -- 3.13.3 Safety/Integrity Aspects -- 3.13.4 Key
Integration Aspects -- 3.13.5 Key Interfaces -- 3.13.6 Key Design
Drivers -- 3.13.7 Modelling -- 3.13.8 References -- 3.13.9 Sizing
Considerations -- 3.13.10 Future Considerations -- 3.14 Ice Detection

-- 3.14.1 Purpose of System -- 3.14.2 Description -- 3.14.3 Safety/Integrity Aspects -- 3.14.4 Key Integration Aspects -- 3.14.5 Key Interfaces -- 3.14.6 Key Design Drivers -- 3.14.7 Modelling -- 3.14.8 References -- 3.14.9 Sizing Considerations -- 3.14.10 Future Considerations -- 3.15 Ice Protection -- 3.15.1 Purpose of System -- 3.15.2 Description -- 3.15.3 Safety/Integrity Aspects. 3.15.4 Key Integration Aspects -- 3.15.5 Key Interfaces -- 3.15.6 Key Design Drivers -- 3.15.7 Modelling -- 3.15.8 References -- 3.15.9 Sizing Considerations -- 3.15.10 Future Considerations -- 3.16 External Lighting -- 3.16.1 Purpose of System -- 3.16.2 Description -- 3.16.3 Safety/Integrity Aspects -- 3.16.4 Key Integration Aspects -- 3.16.5 Key Interfaces -- 3.16.6 Key Design Drivers -- 3.16.7 Modelling -- 3.16.8 References -- 3.16.9 Sizing Considerations -- 3.16.10 Future Considerations -- 3.17 Probe Heating -- 3.17.1 Purpose of System -- 3.17.2 Description -- 3.17.3 Safety/Integrity Aspects -- 3.17.4 Key Integration Aspects -- 3.17.5 Key Interfaces -- 3.17.6 Key Design Drivers -- 3.17.7 Modelling -- 3.17.8 References -- 3.17.9 Sizing Considerations -- 3.17.10 Future Considerations -- 3.18 Vehicle Management System (VMS) -- 3.18.1 Purpose of System -- 3.18.2 Description -- 3.18.3 Safety/Integrity Aspects -- 3.18.4 Key Integration Aspects -- 3.18.5 Key Interfaces -- 3.18.6 Key Design Drivers -- 3.18.7 Modelling -- 3.18.8 References -- 3.18.9 Sizing Considerations -- 3.18.10 Future Considerations -- 3.19 Crew Escape -- 3.19.1 Purpose of System -- 3.19.2 Description -- 3.19.3 Safety/Integrity Aspects -- 3.19.4 Key Integration Aspects -- 3.19.5 Key Interfaces -- 3.19.6 Key Design Drivers -- 3.19.7 Modelling -- 3.19.8 References -- 3.19.9 Sizing Considerations -- 3.19.10 Future Considerations -- 3.20 Canopy Jettison -- 3.20.1 Purpose of System -- 3.20.2 Description -- 3.20.3 Safety/Integrity Aspects -- 3.20.4 Key Integration Aspects -- 3.20.5 Key Interfaces -- 3.20.6 Key Design Drivers -- 3.20.7 Modelling -- 3.20.8 References -- 3.20.9 Sizing Considerations -- 3.20.10 Future Considerations -- 3.21 Oxygen -- 3.21.1 Purpose of System -- 3.21.2 Description -- 3.21.3 Safety/Integrity Aspects -- 3.21.4 Key Integration Aspect -- 3.21.5 Key Interfaces. 3.21.6 Key Design Drivers -- 3.21.7 Modelling -- 3.21.8 References -- 3.21.9 Sizing Considerations -- 3.21.10 Future Considerations -- 3.22 Biological and Chemical Protection -- 3.22.1 Purpose of System -- 3.22.2 Description -- 3.22.3 Safety/Integrity Aspects -- 3.22.4 Key Integration Aspects -- 3.22.5 Key Interfaces -- 3.22.6 Key Design Drivers -- 3.22.7 Modelling -- 3.22.8 References -- 3.22.9 Sizing Considerations -- 3.22.10 Future Considerations -- 3.23 Arrestor Hook -- 3.23.1 Purpose of System -- 3.23.2 Description -- 3.23.3 Safety/Integrity Aspects -- 3.23.4 Key Integration Aspects -- 3.23.5 Key Interfaces -- 3.23.6 Key Design Drivers -- 3.23.7 Modelling -- 3.23.8 References -- 3.23.9 Sizing Considerations -- 3.23.10 Future Considerations -- 3.24 Brake Parachute -- 3.24.1 Purpose of System -- 3.24.2 Description -- 3.24.3 Safety/Integrity Aspects -- 3.24.4 Key Integration Aspects -- 3.24.5 Key Interfaces -- 3.24.6 Key Design Drivers -- 3.24.7 Modelling -- 3.24.8 References -- 3.24.9 Sizing Considerations -- 3.24.10 Future Considerations -- 3.24.11 Best Practice and Lessons Learned -- 3.25 Antispin Parachute -- 3.25.1 Purpose of System -- 3.25.2 Description -- 3.25.3 Safety/Integrity Aspects -- 3.25.4 Key Integration Aspects -- 3.25.5 Key Interfaces -- 3.25.6 Key Design Drivers -- 3.25.7 Modelling -- 3.25.8 References -- 3.25.9 Sizing Considerations -- 3.25.10 Future Considerations -- 3.26 Galley -- 3.26.1 Purpose of System -- 3.26.2 Description -- 3.26.3 Safety/Integrity Aspects -- 3.26.4 Key Integration Aspects -- 3.26.5

Key Interfaces -- 3.26.6 Key Design Drivers -- 3.26.7 Modelling --
3.26.8 References -- 3.26.9 Sizing Considerations -- 3.26.10 Future
Considerations -- 3.27 Passenger Evacuation -- 3.27.1 Purpose of
System -- 3.27.2 Description -- 3.27.3 Safety/Integrity Aspects --
3.27.4 Key Integration Aspects -- 3.27.5 Key Interfaces.
3.27.6 Key Design Drivers.
