



PARE

PERSPECTIVES FOR AERONAUTICAL RESEARCH IN EUROPE

Perspectives for Aeronautical Research in Europe

2018 Report

REFERENCES

Final Version



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Chapter 2

"DATASET2050 -Data driven approach for a Seamless Efficient European Travelling in 2050", December 2014-December 2017, Grant Agreement no: 640353, https://cordis.europa.eu/result/rcn/190323_en.html

"Comparison of ATM-related performance: U.S. – Europe"

2007, Eurocontrol trends in air traffic, volume 3-A place to stand: airports in the European air network. Eurocontrol, Brussels.

2016, Eurocontrol ANS performance monitoring, <http://www.eurocontrol.int/prudata/dashboard/rp2_2016.html>.

A. Baron, M. Mączka, K. Piwek, 2010, Transactions of the Institute of Aviation, The Challenge of mobility in Europe, Scientific Quarterly 3

Abbott K & Thompson D, 1990, Deregulating European aviation: the impact of bilateral liberalisation, International Journal of Industrial Organisation 9: 125–140 and Barrett S (1989) Deregulating European aviation: a case study. Transportation 16: 311–327

AFRA Best Management Practice, 2016. *Best Management Practice for Management of Used Aircraft Parts and Assemblies and for Recycling of Aircraft Materials*. Aircraft Fleet Recycling Association, Version 3.2 (March 8, 2016).

Airport Collaborative Decision Making, 2010, Eurocontrol, Brussels.

Aruba, Aruba Airport, KLM, VISION-BOX and Schiphol Group, 2017, *Aruba Happy Flow*, viewed 27 November 2017, <www.arubahappyflow.com>.

ASSET (Aeronautical Study on Seamless Transport), 2011, *Final Report*, viewed 27 November 2017, <<http://www.asset-project.eu/>>.

ATAG, 2016, Aviation benefits beyond borders, viewed on January 2018 <https://aviationbenefits.org/downloads/>

BEUMER Group, *Assessing the impact of ECAC3 on baggage handling systems*, viewed 18 December 2017,



<https://www.beumergroup.com/uploads/tx_bbbrochures/BEUMER_ECAC_Standard_3.pdf>.

Boonstra J., Turkenburg J., de Wit J.C., 2016, Airport Capacity - Looking Beyond the Runway, *Luchtvaartfeiten.nl & AviationFacts.eu*.

Bowen, J. 2010, The Economic Geography of Air Transportation: Space, Time, and the Freedom of the Sky. Routledge, London, UK

Brasseur, G. P., M. Gupta, B. E. Anderson, S. Balasubramanian, S. Barrett, D. Duda, G. Fleming, P. M. Forster, J. Fuglestedt, A. Gettelman, R. N. Halthore, S. D. Jacob, M. Z. Jacobson, A. Khodayari, K.-N. Liou, M. T. Lund, R. C. Miake-Lye, P. Minnis, S. Olsen, J. E. Penner, R. Prinn, U. Schumann, H. B. Selkirk, A. Sokolov, N. Unger, P. Wolfe, H.-W. Wong, D. W. Wuebbles, B. Yi, P. Yang, and C. Zhou, Impact of aviation on climate: FAA's Aviation Climate Change Research Initiative (ACCRI) Phase II, Bull. Amer. Met. Soc., 91, 461, doi: 10.1175/2009BAMS2850.1, 2015.

Brueckner J.K., 2003, Airline Traffic and Urban Economic Development

Brusow W., Klepacki Z., Majka A., 2007, Airports and Facilities Data Base, EPATS technical report, Project no: ASA6-CT-2006-044549, Rzeszow, Poland

Burghouwt G., Boonekamp T., Volta N., Pagliari R., Mason K., 2017, The impact of airport capacity constraints on air fares, Final report, *SEO Amsterdam Economics*.

CAEP/8-WP/10. 2010. Report of the Independent Experts to CAEP/8 on the second NO_x review & long-term technology goals. London, 2009.

CLEAN SKAY, 2014, Clean Sky socio-economic study - powering a stronger Europe <http://www.cleansky.eu/news/clean-sky-socio-economic-study-powering-a-stronger-europe>, viewed 6 january 2018.

CODA Digest: Delays at Airports in Europe, 2010, Eurocontrol, Brussels.

Collin D. 2016. *Overview of overview of aviation noise research effort supported by the European Union* // ICAO Environmental Report 2016, p 38-41

Comparison of Air Traffic Management-Related 2015 Operational Performance: U.S./Europe, 2016, Federal Aviation Administration, European Commission, Eurocontrol.



CORE-JETFUEL Report Summary. http://cordis.europa.eu/result/rcn/192392_en.html

DATASET2050 - Data driven approach for a Seamless Efficient Travelling in 2050, 2016, Deliverable 4.1, "Current Supply Profile", DATASET2050 Horizon 2020, Grant Agreement no: 640353

Detandt Y. *Aeroacoustics research in Europe: The CEAS-ASC report on 2014 highlights* // Journal of Sound and Vibration Volume 357, 24 November 2015, Pages 107-127

DLR, 2010, Airport Accessibility in Europe, Analyses of the European air transport market, Topical Report, contract TREN/05/MD/S07.74176

Dobrzynski W. M., Schoning B., Leung Choi Chow, Wood C. and C.Seror. 2005. Design and testing of low noise landing gears. AIAA 2005-3008, 11th Aeroacoustics Conference, Monterey, May 2005.

Dodgson, J. S., 1994, Kluwer Academic Publishers, Competition policy and the liberalisation of European aviation, Transportation 21: 355-370

EASA, 2017, *Certification Specifications and Acceptable Means of Compliance for Large Aeroplanes CS-25*, Amendment 19, Annex to ED Decision 2017/015/R.

EC, 2008, Directive 2008/101/EC of the European Parliament and of the Council of 19 November 2008 amending Directive 2003/87/EC so as to include aviation activities in the scheme for greenhouse gas emission allowance trading within the Community (OJ L 8, 13.01.2009, p. 3).

EEA, 2014, Focusing on environmental pressures from long-distance transport — TERM 2014: transport indicators tracking progress towards environmental targets in Europe, EEA Report No 7/2014, European Environment Agency.

EEA, 2014, Transport and Environment Reporting Mechanism 2014.

Eighth USA/Europe Air Traffic Management Research and Development Seminar (ATM2009) Airport CDM Network Impact Assessment, Eduardo GOÑI MODREGO, Mihai-George IAGARU, Marc DALICHAMPT, Roger LANE EUROCONTROL Experimental Centre, Bretigny s/ Orge, France.

Eurocontrol Statistics and forecasts (STATFOR), <<http://www.eurocontrol.int/statfor>>.



EUROCONTROL, 2007, A Place to Stand: Airports in the European Air Network, Trends in Air Traffic, Volume 3, *European Organisation for the Safety of Air Navigation*, Brussels, Belgium

EUROCONTROL, 2009, Mitigating the Challenges for Air Transport 2030, *European Organisation for the Safety of Air Navigation*, Brussels, Belgium.

EUROCONTROL, 2010, Planning for Delay: influence of flight scheduling on airline punctuality, EUROCONTROL Trends in Air Traffic, Volume, *European Organisation for the Safety of Air Navigation*, Brussels, Belgium.

EUROCONTROL, 2013, Challenges of Growth 2013. Task 6: The Effect of Air Traffic Network Congestion in 2035, *European Organisation for the Safety of Air Navigation*, Brussels, Belgium.

Eurocontrol, 2013, *Challenges of growth 2013-task 7: European Air traffic in 2050*. Eurocontrol, Brussels.

EUROCONTROL, 2014, *Framework for the analysis of Operational ANS Performance at airports*, viewed 18 December 2017, <<https://eurocontrol.int/sites/default/files/events/presentation/140219-ans-ops-performance-framework.pdf>>.

EUROCONTROL, 2015, *European ATM Master Plan*, viewed 18 December 2017, <<https://www.atmmasterplan.eu/downloads/202>>

EUROCONTROL, 2016, Closing the gaps: a report on what still needs to be done for the Single European Sky, viewed 6 January 2018, <http://www.eurocontrol.int/news/closing-gaps-report-what-still-needs-be-done-single-european-sky>

EUROCONTROL, 2016, Flight Movements and Service Units 2016-2022, EUROCONTROL SEVEN-YEAR FORECAST FEBRUARY 2016, *European Organisation for the Safety of Air Navigation*, Brussels, Belgium.

EUROCONTROL, 2017, CODA DIGEST 2016, All-Causes Delay and Cancellations to Air Transport in Europe – 2016, *European Organisation for the Safety of Air Navigation*, Brussels, Belgium.

EUROCONTROL, 2017, *EUROCONTROL Annual Report 2016*, viewed 18 December 2017, <<http://www.eurocontrol.int/sites/default/files/publication/files/eurocontrol-annual-report-2016.pdf>>



EUROCONTROL, 2017a, CODA DIGEST Q3 2017, All-Causes Delay and Cancellations to Air Transport in Europe – Q3 2017, *European Organisation for the Safety of Air Navigation*, Brussels, Belgium.

EUROCONTROL, *ANS performance monitoring*, viewed 18 December 2017, <http://www.eurocontrol.int/prudata/dashboard/rp2_2017.html>

EUROCONTROL, SESAR, 2009, *European Air Traffic Management Master Plan*, viewed 18 December 2017, <https://ec.europa.eu/transport/sites/transport/files/modes/air/sesar/doc/1-european_atm_master_plan.pdf>.

EUROCONTROL, SESAR, *ATM Master Plan monitoring*, viewed 18 December 2017, <https://www.atmmasterplan.eu/depl/essip_objectives/monitoring>

Eurocontrol, viewed December 2017, <<http://www.eurocontrol.int>>

Eurocontrol. (2010). What is Airport CDM.

EUROPEAN COMMISSION, Europe's Vision for Aviation-Flightpath 2050, viewed January 2018, <https://ec.europa.eu/>

Eurostat, viewed December 2017, <<http://ec.europa.eu/eurostat>>

Eurostat, viewed December 2017, <<http://ec.europa.eu/eurostat>>

EY, 2016, Airport Capacity Programme, Global Comparison of Airport Mitigation Measures, *Ernst & Young LLP*, London, United Kingdom.

Fleming G.G., Ziegler U. Environmental trends in aviation to 2050. // ICAO Environmental Report 2016, p 16-22.

Fleuti E., 2014, Aircraft Ground Handling Emissions, Methodology and Emission Factors Zurich Airport, *Zurich Airport*, Zurich, Switzerland

FORUM-AE, 2015. Mid-Term Synthesis. D4.14, Forum-AE Coordination & Support Action, FP7 – 605506.



Germa Bèl, Xavier Fageda, 2008, Getting there fast: globalization, intercontinental flights and location of headquarters, *Journal of Economic Geography*, 72, 18

Gleave, S.D., 2015, Study on employment and working conditions in air transport and airports, Brussels, Belgium

Honeywell and Safran, EGTS - electric taxiing system. Introducing the future of aircraft taxiing, (2014).

Hong Kong Airport, 2016, *Introducing advanced technologies and new facilities in the airport experience*, viewed 27 November 2017, <http://www.hongkongairport.com/eng/sustainability_report/pdf/creating_a_seamless_passenger_experience.pdf>.

<https://www.eurocontrol.int/articles/coda-publications>

Hudda, N., Gould, T., Hartin, K., Larson, T. V., Fruin, S.A. 2014. Emissions from an international airport increase particle number of concentrations 4-fold at 10 km downwind. *Environ. Sci. Technol.* 48, 6628–6635. doi:10.1021/es5001566

IATA, ACI, *Smart Security Project*, viewed 27 November 2017, <<http://www.iata.org/whatwedo/security/Documents/smart-security-brochure.pdf>>.

IBERIA, 2017, *Hora límite*, viewed 27 November 2017, <<http://www.iberia.com/es/hora-limite/>>.

ICAO CAEP/7-IE/WG/3. 2007. Long Term Technology Goals for CAEP/7. WG3 and IE Chair presentation to CAEP/7, February 2007.

ICAO CAEP/8-IP/11. 2010. Update on advances in emissions reduction technology: NOX // Committee on Aviation Environmental Protection (CAEP), 8TH MEETING, Montréal, 1 to 12 February 2010.

ICAO Circular 303, Operational Opportunities to Minimize Fuel Use and Reduce Emissions

ICAO Document 9888, 2007. Review of Noise Abatement Procedure Research & Development and Implementation Results.

ICAO Resolution A39-1. 2016. Consolidated statement of continuing ICAO policies and practices related to environmental protection – General provisions, noise and local air quality



ICAO Resolution A39-2. 2016. Consolidated statement of continuing ICAO policies and practices related to environmental protection – Climate change

ICAO Resolution A39-3. 2016. Consolidated statement of continuing ICAO policies and practices related to environmental protection – Global Market-based Measure (MBM) scheme

ICAO Secretariat. 2016. *Local Air Quality – Overview* // ICAO Environmental Report 2016, p 73-74

ICAO, 2017, Airbus Global Market Forecast, Growing_Horizons, viewed 6 January 2018, <https://www.icao.int/Pages/default.aspx>

ICAO, 2017, Aviation Benefits 2017, viewed January 2018, <https://www.google.com/search?q=aviation+benefits+2017&ie=utf-8&oe=utf-8&client=firefox-b>

INE (Instituto Nacional de Estadística), viewed 27 November 2017, <<http://www.ine.es>>.

INTERACTION (INnovative TEchnologies and Researches for a new Airport Concept towards Turnaround coordinatION) project web page, <<http://www.interaction-aero.eu/>>.

International Civil Aviation Organization (ICAO), 2016, *DOC 9626: Manual on the Regulation of International Air Transport*, Third Edition, ICAO Edition.

Jiříček O. Aeroacoustics research in Europe: The CEAS-ASC report on 2015 highlights // *Journal of Sound and Vibration*, Volume 381, 27 October 2016, Pages 101-120

Keuken, et al. 2015. Total and size-resolved particle number and black carbon concentrations near an industrial area. *Atmospheric Environment*, Volume 122, Pages 1-900 (December 2015), Pp. 196-205

Lee, D. S., D. W. Fahey, P. M. Forster, P. J. Newton, R. C. N. Wit, L. L. Lim, B. Owen, and R. Sausen, Aviation and global climate change in the 21st century, *Atmos. Environ.*, 43, 3520-3537, 2009.

Maertens,S. ,Wolfgang,G., 2015,Institute for Air Transport and Airport Research, How to assess the percentage of transfer passengers at airports?,15,1-15



META-CDM project web page, Multimodal, Efficient Transportation in Airports and Collaborative Decision Making, <<http://www.meta-cdm.org/>>.

Miake-Lye R. Et al. 2016. White Paper on air quality aviation impacts on air quality: state of the science // ICAO Environmental Report 2016, p 75-80

ModAir project web page, <<https://www.indracompany.com/en/indra/modair-intermodal-airport>>.

Munich Airport. (2010). Collaborative Decision Making (CDM) - a new concept.

NASA, 2015, NASA UTM, viewed 27 November 2017, <<https://utm.arc.nasa.gov/index.shtml>>.

Nieße, Hendrik and Grimme, Wolfgang, 2014, Minimum Travel Times between European Regions - An assessment of the ACARE 4h-Goal, Air Transport Research Society World Conference, Bordeaux, Frankreich.

Nolte P. 2012, Quantitative Assessment of Technology Impact on Aviation, in Proceedings of the Third International Conference in Air Transport and Operations (published by R. Curran and L. Fischer), June 2012, Delft, Netherlands (page 525)

Norin A., 2008, *Airport Logistics – Modelling and Optimizing the Turn-Around Process*, LiU-Tryck, Linköping, Sweden.

Performance Review Report 2010-An Assessment of Air Traffic Management in Europe during the Calendar Year 2010, 2011, Eurocontrol, Brussels.

Potential Strategies Would Redefine Federal Role in Developing Airport Intermodal Capabilities, 2005, GAO.

Reichmuth, J., 2010, Topical Report Airport Accessibility in Europe, Air Transport and Airport Research, 1-32, Köln Germany

Report prepared by Oxford Economics for ATAG, 2017, Aviation: Benefits Beyond Borders

SESAR JU, viewed December 2017, <<https://www.sesarju.eu>>



SITA, *Orlando International Airport first to adopt facial recognition technology at border*, viewed 18 December 2017, <<https://www.sita.aero/pressroom/news-releases/orlando-international-airport-first-to-adopt-facial-recognition-technology-at-border>>

Soepnel S.M.L. 2015. Impact of electric taxi systems on airport apron operations and gate congestion at AAS // Msc. Thesis Study, Delft University of Technology

Suomalainen E., Celikel A., Vénuat P. 2014. Aircraft metals recycling: process, challenges and opportunities <http://www.env-isa.com>

The Association of European Research Establishments in Aeronautics (EREA), 2012, *From Air Transport System 2050 Vision to Planning for Research and Innovation*.

The International Air Transport Association (IATA), 2013, *TECHNOLOGY ROADMAP*, 4th Edition, 13-19.

The International Air Transport Association (IATA), 2017, *Future of the airline industry 2035*, School of International Futures.

TITAN project web page, <<http://www.titan-project.eu/>>.

U.S./Europe Comparison of 2010 ATM-Related Operational Performance, 2010, Federal Aviation Administration, Eurocontrol.

UBER, 2016, *Fast-Forwarding to a Future of On-Demand Urban Air Transportation*, UBER Elevate.

UBER, 2016, *UBER Elevate*, viewed 27 November 2017, <<https://www.uber.com/elevate.pdf>>.

WheelTugPLC, *WheelTug: Driving Aerospace*, (2014).

X-NOISE 2015 Evaluation of Progress Towards ACARE Noise Targets // Aviation Noise Research Network and Coordination, X-NOISE EV, Project Number 265943, Deliverable D06.31, Date of preparation: June 2015



Chapter 3

19th International Congress for Battery Recycling, ICBR 2014, September 24–26, 2014, Hamburg, Germany.

"EPATS - European Personal Air Transportation System STUDY", Specific Saport Action, 2007-2008, EC Project Reference: 044549 [Online] Available: <http://www.epats.eu/>

"FUSETRA - Future Seaplane Traffic - Transport Technologies for the Future", Support Action, 2009-2011, EC Project Reference: 234052 [Online] Available: https://cordis.europa.eu/result/rcn/52693_en.html

"GABRIEL - Integrated Ground and on-Board system for Support of the Aircraft Safe Take-off and Landing", Research Project, 2011-2014, EC Project Reference: 284884 [Online] Available: <http://www.gabriel-project.eu/>

"SAT-RDMP - Small Air Transport - Roadmap", Support Actions, 2011-2013, EC Project Reference: 265603 [Online] Available: <http://www.epats.eu/SATRdmp>

CS2, 2015, Clean Sky 2 Joint Technical Programme (V5) – Proprietary Information subject to Confidentiality Agreements, Clean Sky 2 JU, Brussels, Belgium.

Duce, A.D., et al., 2013, *eLCAR—guidelines for the LCA of electric vehicles*, Proj.no. 285571.

ERA, viewed December 2017, <<https://www.eda.europa.eu/info-hub/press-centre/latest-news/2016/02/11/new-project-to-facilitate-integration-of-rpas-into-european-airspace>>

European Commission, 2017, *Eurostat – Key waste streams – Batteries*, viewed 1.11. 2017, <http://epp.eurostat.ec.europa.eu/portal/page/portal/waste/key_waste_streams/batteries>

Fletcher, S., 2011, *Bottled Lightning: Superbatteries, Electric Cars and the New Lithium Economy*. Hill and Wang, New York.

Nigel Halpern, Anne Graham (2018). *The Routledge Companion to Air Transport Management*.

Scrosati, B. et al., 2015, *Advances in Battery Technologies for Electric Vehicles*, Elsevier.

Scrosati, B., 2011, *Technology: Charging towards the Superbattery*. *Nature* **473**, 448.

Scrosati, B., Garche, J., 2010, *Lithium batteries: status, prospects and future*. *J. Power Sources* **195**, 2419.

SESAR JU, viewed December 2017, <<https://www.sesarju.eu>>



Tarascon, J.M., Armand, M., 2001, *Issues and challenges facing rechargeable lithium batteries*, Nature **414**, 359.

Yicheng Sun and Howard Smith. (2018) Supersonic Business Jet Conceptual Design in a Multidisciplinary Design Analysis Optimization Environment.

ZW Zhong (2017). Overview of recent developments in modelling and simulations for analyses of airspace structures and traffic flows. Advances in Mechanical Engineering.

Chapter 4

A. D. Surgenor, J. L. Klettlinger, C. H. Yen, and L.M. Nakley, "Alternative Fuel Research in Fischer-Tropsch Synthesis", <https://ntrs.nasa.gov/search.jsp?R=20130000439> 2017-11-17T11:23:50+00:00Z

ACI, 2015, "Managing the Impacts of Aviation Noise, A Guide for Airport Operators and Air Navigation Service Providers", A Joint Publication of the Civil Air Navigation Services Organisation and Airports Council International

Airbus, 2012, *18th Flight safety conference Berlin*, 19-22 March 2012, Berlin, Germany.

Allred, R.E., Gosau, J.M., Shoemaker, J.M., 2001. Recycling process for carbon/epoxy composites. In: *SAMPE 2001 Symposium & Exhibition*. SAMPE, Longbeach, CA, USA.

Clean Sky , 2015, "Clean Sky 2 Joint Undertaking Work Plan 2015-2017", Clean Sky Work Plan, CS-GB-2015-06-23 Doc10a WP 2015-2017.

Collective of authors, 2017, "New engines offer ever-lower fuel burn and emissions", viewed 4 December 2017, <https://aviationbenefits.org/case-studies/new-engines-offer-ever-lower-fuel-burn-and-emissions/>

Copernicus platform<<http://copernicus.eu>>.

Depitre, A., 2016, Noise Certification Workshop, ICAO NOISE CERTIFICATION DATABASE

Dickson, N., "Aircraft noise technology and International Noise Standards", ICAO Air Transport Bureau, Action Plan on Emission Reduction

EASA, "European Aviation Environmental Report 2016", viewed 7 December 2017, <https://ec.europa.eu/transport/sites/transport/files/european-aviation-environmental-report-2016-72dpi.pdf>

EEA, 2010, *The European environment-state and outlook 2010: synthesis*. European Environment Agency, Copenhagen.



EREA, "From Air Transport System 2050 Vision to Planning for Research and Innovation", Report co-financed by EREA

Errico, M.E., et al., 2014, Polymer Composites Volume 35, Issue 8, August 2014, 1621-1628.

Eumetsat platform <<https://www.eumetsat.int/website/home/index.html>>.

Eurocontrol, 2013, *Challenges of growth 2013-task 8: climate change risk and resilience*. Eurocontrol, Brussels.

Federal Aviation Administration, 2015, "Aviation Emissions: Impacts and Mitigation: A Primer", Office of environment and Energy

Griffiths, G., 2016, Review of developments in lithium secondary battery technology, *Journal of Underwater Technology*, **33**, 3.

<http://cimss.ssec.wisc.edu/asap/>

http://cordis.europa.eu/result/rcn/163847_it.html

http://www.itaka-project.eu/nav/pages/progress_results_7.aspx

<https://aura.gsfc.nasa.gov/about.html>

https://ec.europa.eu/energy/sites/ener/files/20110622_biofuels_flight_path_launch.pdf

https://ec.europa.eu/energy/sites/ener/files/20130911_a_performing_biofuels_supply_chain.pdf

https://ec.europa.eu/energy/sites/ener/files/20130911_a_performing_biofuels_supply_chain.pdf

<https://ntrs.nasa.gov/search.jsp?R=20130000439> 2017-11-17T11:23:50+00:00Z.

<https://president.ucar.edu/development/capability/cosmic>

IAGOS platform <<http://www.iagos.org/>>.

ICAO, 2017, "Aircraft Noise", viewed (December 2017, International Civil Aviation Organization, <https://www.icao.int/environmental-protection/Pages/noise.aspx>

ICAO, 2010, *Environmental report 2010-aviation and climate change*. Civil Aviation Organisation, Montreal.



ICAO, 2017, "Local Air Quality", viewed 7 December 2017, <https://www.icao.int/environmental-protection/Pages/local-air-quality.aspx>

ICAO, 2017, Aircraft Engine Emissions, viewed 7 December 2017, <https://www.icao.int/environmental-protection/Pages/aircraft-engine-emissions.aspx>

Jiang, G., Pickering, S.J., Lester, E.H., Turner, T.A., Wong, K.H., Warrior, N.A., 2009. Characterisation of carbon fibres recycled from carbon fibre/epoxy resin composites using supercritical n-propanol. *Compos. Sci. Technol.*, 69, 192–198.

Jody, B.J., Pomykala, J.A., Daniels, E.J., Greminger, J.L., 2004. A process to recover carbon fibers from polymer-matrix composites in end-of-life vehicles. *JOM*, 56, 43–47.

Leylekian, L., Lebrun, M., Lempereur, P. , 2015, "An overview of aircraft noise reduction technologies", AerospaceLab, p. 1-15

Leylekian, L., Lebrun, M., Lempereur, P. , 2015, "An overview of aircraft noise reduction technologies", AerospaceLab, p. 1-15

Marsh, G., 2008. Reclaiming value from post-use carbon composite. *Reinf. Plast.*, 52, 36–39.

Meyer, L.O., Schulte, K., Grove-Nielsen, E., 2007. Optimisation of a pyrolysis process for recycling of CFRP's. In: *ICCM-16, Japan Society for Composite Materials*, Kyoto, Japan.

Meyer, L.O., Schulte, K., Grove-Nielsen, E., 2009. CFRP-recycling following a pyrolysis route: process optimization and potentials. *J. Compos. Mater.* 43, 1121–1132.

Nakagawa, M., Shibata, K., Kuriya, H., 2009. Characterization of CFRP using recovered carbon fibers from waste CFRP. In: *Second International Symposium on Fiber Recycling*, The Fibber Recycling 2009 Organizing Committee, Atlanta, Georgia, USA.

NASA, 2011, "The Promise and Challenges of Ultra High Bypass Ratio Engine Technology and Integration", National Aeronautics and Space Administration

Palmer, J., Ghita, O.R., Savage, L., Evans, K.E., 2009. Successful closed-loop recycling of thermoset composites. *Composites Part A*, 40, 490–498.

Penner, J., 2017, "Aircraft Engine Emissions-The nature of the problem", ICAO Environmental Colloquium, Session 6

Pickering, S.J., 2006. Recycling technologies for thermoset composite materials –current status. *Composites Part A* 37, 1206–1215.

Pickering, S.J., Kelly, R.M., Kennerley, J.R., Rudd, C.D., Fenwick, N.J., 2000. A fluidised-bed process for the recovery of glass fibres from scrap thermoset composites. *Compos. Sci. Technol.* 60, 509–523.



Pinero-Hernanz, R., Dodds, C., Hyde, J., Garcia-Serna, J., Poliakoff, M., Lester, E., Cocero, M.J., Kingman, S., Pickering, S., Wong, K.H., 2008. Chemical recycling of carbon fibre reinforced composites in near critical and supercritical water. *Composites Part A* 39, 454–461.

Pinero-Hernanz, R., Garcia-Serna, J., Dodds, C., Hyde, J., Poliakoff, M., Cocero, M.J., Kingman, S., Pickering, S., Lester, E., 2008. Chemical recycling of carbon fibre composites using alcohols under subcritical and supercritical conditions. *J. Supercrit. Fluids* 46, 83–92.

Pistoia, G., 2005, *Batteries for Portable Devices*, Elsevier.

S. Pimenta, S. T. Pinho, 2011, Recycling carbon fibre reinforced polymers for structural applications: Technological review and market outlook, *Waste Management*, 31, pp. 378–392.

SESAR, 2016, "SESAR AND THE ENVIRONMENT", SESAR Joint Undertaking

SKYbrary 2017, *Aircraft Batteries*, viewed 1.11.2017, <https://www.skybrary.aero/index.php/Aircraft_Batteries>.

Sustainable Aviation, "Noise Road-Map, A blueprint for managing noise from aviation sources to 2050", viewed 4 December 2017, <http://airlinesuk.org/wp-content/uploads/2013/04/SA-Noise-Roadmap-Summary-April-2013.pdf>

The weather company platform <<https://business.weather.com>>.

W. Carberry, 2008, Airplane Recycling Efforts – Benefit Boeing Operators, *Boeing AERO Magazine QRT*, 2008, pp. 7–13.

World Meteorological Organization platform <<https://www.wmo.int/pages/prog/www/OSY/Gos-components.html>>.

World Meteorological Organization platform <https://www.wmo.int/pages/prog/arep/gaw/gaw_home_en.html>.

Wulff, A., Hourmouziadis, J., "Technology review of aeroengine pollutant emissions", *Aerospace Science and Technology*, Volume 1, Issue 8, 557–572

Chapter 5

2011, *New Trends in Airport Security Technology*, <<https://www.airport-technology.com/features/feature109762/>>.



2013, A Framework for Aviation Cybersecurity, American Institute of Aeronautics and Astronautics, <<http://www.aiaa.org/aviationcybersecurity>>.

2016, *New technologies and strategies strive to increase airport security and passenger experience*, <<https://www.futuretravelexperience.com/2016/08/new-technologies-strive-to-enhance-airport-security/>>.

ACI, 2005, The application of biometrics at airports <<http://www.aci.aero/media/aci/file/free%20docs/aci%20biometric%20position%20final.pdf>>, Airports Council International, Geneva.

ACI, IATA, 2016, Smart security blueprint-version 4. Airports Council International, Montreal, International Air Transport Association, Geneva.

CORDIS, viewed 27 November 2017, <http://cordis.europa.eu/home_en.html>.

EASA, 2017, *Annual Safety Review*, viewed 27 November 2017, <https://www.easa.europa.eu/sites/default/files/dfu/209735_EASA_ASR_MAIN_REPORT_3.0.pdf>.

ECA, 2014, *Pilots' vision on weather*, viewed 18 December 2017, <https://www.eurocockpit.be/sites/default/files/2017-04/Pilots%27%20Vision%20on%20Weather%202014_0.pdf>.

ECAC Study Group on Cyber Threats to Civil Aviation web page, <<https://www.ecac-ceac.org/security>>.

Enisa web page <<https://www.enisa.europa.eu/topics/csirts-in-europe/capacity-building/european-initiatives/cert-eu>>.

EUROCONTROL, 2010, *Ash-cloud of April and May 2010: Impact on Air Traffic*, viewed 27 November 2017, <<https://www.eurocontrol.int/sites/default/files/content/documents/official-documents/facts-and-figures/statfor/ash-impact-air-traffic-2010.pdf>>.

EUROCONTROL, 2016, *Annual Safety Report*, viewed 27 November 2017, <<https://www.eurocontrol.int/sites/default/files/content/documents/single-sky/src/src-docs/src-doc-56-e1.0.pdf>>.

European ATM Master Plan web page, <<https://www.atmmasterplan.eu/>>.

European Centre for Cybersecurity in Aviation (ECCSA) web page, <<https://www.easa.europa.eu/eccsa>>.



FAA, 2004, *Review of Aviation Accidents Involving Weather Turbulence in the United States*, viewed 27 November 2017, <https://www.asias.faa.gov/i/studies/turbulence_study_new.pdf>.

FAA, 2010, *Weather-related Aviation Accident Study 2003-2007*, viewed 27 November 2017, <<https://www.asias.faa.gov/i/2003-2007weatherrelatedaviationaccidentstudy.pdf>>.

FAA, 2016, *Wake and Weather Turbulence Report*, viewed 27 November 2017, <https://www.asias.faa.gov/i/studies/Wake_Weather_Turbulence_Report_2016.pdf>.

FAA, *NextGen Weather*, viewed 18 December 2017, <<https://www.faa.gov/nextgen/programs/weather/faq/>>.

Global UTM Association, 2017, *Global UTM Architecture*, viewed 27 November 2017, <https://www.gutma.org/docs/Global_UTM_Architecture_V1.pdf>.

James O'Brien, 2013, *8 Ways Tech Will Transform Airport Security*, <<https://mashable.com/2013/08/29/future-airport-security/?europe=true#9gjeNZEEUqq3>>.

Jason Braverman, 2016, *Biometrics Bringing Future Tech to Airport Security*, <<https://www.veridiumid.com/blog/biometrics-bringing-future-tech-airport-security/>>.

K. Risse et al. (2016). Central Reference Aircraft Data System (CeRAS) for research community. CEAS Aeronaut J 7:121–133 DOI 10.1007/s13272-015-0177-9

MIT, *Weather- Air Traffic Management integration*, viewed 18 December 2017, <<https://www.ll.mit.edu/mission/aviation/wxatmintegration/wxatminteg.html>>.

NASA, 2006, *New technologies for reducing aviation weather-related accidents*, viewed 27 November 2017, <<https://ntrs.nasa.gov/archive/nasa/casi.ntrs.nasa.gov/20060048302.pdf>>.

NAV CANADA, 2001, *The Weather of the Yukon, Northwest Territories and Western Nunavut*, viewed 27 November 2017, <<http://www.navcanada.ca/EN/media/Publications/Local%20Area%20Weather%20Manuals/LAWM-Yukon-NWT-EN.pdf>>.

NCEI, *Radar Data Map*, viewed 27 November 2017, <<https://gis.ncdc.noaa.gov/maps/ncei/radar>>.

NOAA, *Radar Data*, viewed 27 November 2017, <<https://www.ncdc.noaa.gov/data-access/radar-data>>.

Pavlos Sermpezis, Vasileios Kotronis, Petros Gigis, Xenofontas Dimitropoulos, Danilo Cicalese, Alistair King, and Alberto Dainotti (25 Jan 2018). ARTEMIS: Neutralizing BGP Hijacking within a Minute



Sami Shubber. 1973. Jurisdiction Over Crimes on Board Aircraft

SESAR web page, <<https://www.sesarju.eu/>>.

SESAR, 2016, *European Drones Outlook Study*, viewed 27 November 2017, <https://www.sesarju.eu/sites/default/files/documents/reports/European_Drones_Outlook_Study_2016.pdf>.

The Aviation Information Sharing and Analysis Centre (A-ISAC) web page, <<https://www.a-isac.com/>>.

The Global ATM Security Management Project (GAMMA) web page, <<http://www.gamma-project.eu/>>.

Transportation Security Administration web page, <<https://www.tsa.gov/>>.

TSA, 2010, *Electronic baggage screening program-program specific recovery act plan update*. Transportation Security Administration, Homeland Security.

TSA, 2010, *Passenger screening program-program specific recovery act plan*. Transportation Security Administration, Homeland Security.

TSA, 2016, *Advanced integrated passenger and baggage screening technologies*. Transportation Security Administration, Homeland Security.

U.S. Government Accountability Office platform <<https://www.gao.gov/>>.

VTT, DLR, TÖI, Foreca, FMI, CYMET, Österreichische Wasserstraßen Gmbh, ESSL, WMO, 2012, *European Extreme Weather Risk Management – Needs, Opportunities, Costs and Recommendations*, viewed 28 December 2017, <http://ewent.vtt.fi/Deliverables/D6/Ewent_D6_SummaryReport_V07.pdf>

WMO, 2017, *Summary of the special dialogue on the future of aeronautical meteorological services*, viewed 18 December 2017, <https://www.wmo.int/aemp/sites/default/files/summary_special_dialogue_final_en.pdf>

WMO, *The WMO AMDAR Observing System*, viewed 18 December 2017, <<https://www.wmo.int/pages/prog/www/GOS/ABO/AMDAR/>>.

Chapter 6

CIRA ICING WIND TUNNEL USER MANUAL



D. Guffarth, M. J Barber, (2013): The European aerospace R&D collaboration network, FZID Discussion Paper, No. 84-2013, <http://nbn-resolving.de/urn:nbn:de:bsz:100-opus-9038>

Green Regional Aircraft (GRA) | Clean Sky (<http://www.cleansky.eu/green-regional-aircraft-gra>)

Jorge Niosi. (2012) R&D Support for the Aerospace Industry A Study of Eight countries and One Region 2012. The Aerospace Review

Chapter 7

2013, Urs Binggeli and Mathieu Weber, *A short life in long haul for low-cost carriers*, [Online]<<https://www.mckinsey.com/industries/travel-transport-and-logistics/our-insights/a-short-life-in-long-haul-for-low-cost-carriers>>.

2015, IATA Air Passenger Forecast Shows Dip in Long-Term Demand, <<http://www.iata.org/pressroom/pr/Pages/2015-11-26-01.aspx>>.

Airbus Corporate Jets, viewed January 2018, <<http://www.airbus.com/aircraft/corporate-jets.html>>

Airbus Helicopters, Military Range.

Airbus web page <<https://www.airbus.com/>>.

Airbus, 2012, *18th Flight safety conference*, 19-22 March 2012, Berlin, Germany.

AIRBUS, 2017, *Global Market Forecast 2017-2036*, viewed 24 January 2018.

Airbus, 2011, *Global market forecast 2011-2030-delivering the future*, Airbus, Blagnac Cedex, France.

Airbus, 2017, *Global market forecast 2017-2036-growing horizons*, Airbus, Blagnac Cedex, France.

Allroggen, F., Malina, R. and Lenz, A.-K., 2013, 'Which factors impact on the presence of incentives for route and traffic development? Econometric evidence from European airports', *Transportation Research Part D: Transport and Environment*, (60) 49–61

Alonso, G., Benito, A., Lonza, L., & Kousoulidou, M. (2014). Investigations on the distribution of air transport traffic and CO2 emissions within the European Union. *Journal of Air Transport Management*, 36, 85-93.



Aparicio, A., Exploring the sustainability challenges of long-distance passenger trends in Europe, European Transport Conference 2015

B.P.Y. Loo, L. Linna Li, V. Psaraki, I. Pagoni, 2014, "CO2 Emissions Associated with Hubbing Activities in Air Transport: An International Comparison" *Journal of Transport Geography* 34: 185–93.

Barbot, C., 2006, 'Low-cost airlines, secondary airports, and state aid: An economic assessment of the Ryanair-Charleroi Airport agreement', *Journal of Air Transport Management*, 12(4) 197–203.

Boeing Business Jets, viewed January 2018, <<http://www.boeing.com/commercial/bbj/>>

Boeing, 2015, Current market outlook 2015-2035, Boeing Commercial Airplanes, Seattle.

Boeing, 2016, *Current Market Outlook 2016-2035*, viewed 24 January 2018, <https://www.boeing.com/resources/boeingdotcom/commercial/about-our-market/assets/downloads/cmo_print_2016_final_updated.pdf>.

Boeing, 2017, Current market outlook 2017-2036, Boeing Commercial Airplanes, Seattle.

Boeing, 2017, *Current Market Outlook 2017-2036*, viewed 24 January 2018, <<http://www.boeing.com/resources/boeingdotcom/commercial/market/current-market-outlook-2017/assets/downloads/2017-cmo-6-19.pdf>>.

Boing web page <<https://www.boeing.com/>>.

Bombardier Business Aircraft, 2016, Market Forecast 2016-2025

Bombardier Business Aircraft, viewed January 2018, <<https://www.businessaircraft.bombardier.com/en/aircraft>>

BOMBARDIER, 2016, *Bombardier business aircraft market forecast 2016-2025*, <https://businessaircraft.bombardier.com/sites/default/files/2018-03/market_forecast_en.pdf>.

Button, K. and Pels, E., 2010, 'International Air Transport: The Impact of Globalisation on Activity Levels', in: OECD, *Globalisation, Transport and the Environment*, Paris, OECD Press, pp. 81–120.

Christopher Koopman and Andrea Castillo O'Sullivan, 2017, Policy Spotlight, *The future of supersonic flight*.

Dassault Falcon Jet, viewed January 2018, <<https://www.dassaultfalcon.com/en/Pages/Home.aspx>>



EBAA, *Annual Review 2014-2015*, viewed 24 January 2018, <<https://www.ebaa.org/app/uploads/2018/03/2014-2015-EBAA-Annual-Review.pdf>>.

EC (2014). Communication from the Commission 'Guidelines on State aid to airports and airlines. (OJ C 99, 4 April 2014, pp. 3-34), Brussels: European Commission

EEA Report 2014, Focusing on environmental pressures from long-distance transport, TERM 2014: transport indicators tracking progress towards environmental targets in Europe, ISSN 1977-8449

Embraer Executive Jets, viewed January 2018, <<http://www.embraerexecutivejets.com/en-us/pages/compare-aircraft.aspx>>

EUROCONTROL, 2009, *Business Aviation in Europe 2009*, viewed 24 January 2018, <<http://www.eurocontrol.int/sites/default/files/publication/files/tat6-business-aviaton-2009.pdf>>.

EUROCONTROL, 2009, *Mitigating the Challenges for Air Transport 2030*, European Organisation for the Safety of Air Navigation, Brussels, Belgium.

EUROCONTROL, 2011, *Study into the impact of the global economic crisis on airframe utilisation*, viewed 24 January 2018, <<https://www.eurocontrol.int/sites/default/files/content/documents/official-documents/facts-and-figures/coda-reports/study-impact-global-economic-crisis-2011.pdf>>.

EUROCONTROL, 2013, *Challenges of Growth 2013 - Task 4*, viewed 24 January 2018, <<https://www.eurocontrol.int/sites/default/files/article/content/documents/official-documents/reports/201306-challenges-of-growth-2013-task-4.pdf>>

EUROCONTROL, 2013, *Challenges of Growth 2013 - Task 7*, viewed 24 January 2018, <<https://www.eurocontrol.int/sites/default/files/article/content/documents/official-documents/reports/201306-challenges-of-growth-2013-task-7.pdf>>.

EUROCONTROL, 2013, *Challenges of Growth 2013*.

EUROCONTROL, 2017, *EUROCONTROL Annual Report 2016*, viewed 24 January 2018, <<http://www.eurocontrol.int/sites/default/files/publication/files/eurocontrol-annual-report-2016.pdf>>

EUROCONTROL, *Business aviation: An expanding sector*, viewed 24 January 2018, <<http://www.eurocontrol.int/news/business-aviation-expanding-sector>>.

European Aviation Environmental Report 2016 doi: 10.2822/385503

European Commission, 2017, *Annual Analyses of the EU Air Transport Market 2016*.



European Commission, 2006, *Battery and Accumulator Directive*, viewed 08 February 2018, <http://epp.eurostat.ec.europa.eu/portal/page/portal/waste/key_waste_streams/batteries>

F. Verlut,; N. Dyrda, N., 2010, "Definition by Eurocopter of a green metric to assess gas emitted by helicopters in operation", DSpace - Digital Repository, <https://dspace-erf.nl.nl/xmlui/browse?value=Verlut%2C+F.&type=author>

FAA, 2016, *PBN Navigation Strategy 2016*, viewed 24 January 2018, <https://www.faa.gov/nextgen/media/PBN_NAS_NAV.pdf>.

Federal Aviation Registration, 2015, Special Conditions: Honda Aircraft Company, Model HA-420 HondaJet, Lithium-Ion Batteries, viewed 08 February 2018, <<https://www.federalregister.gov/documents/2015/09/23/2015-24164/special-conditions-honda-aircraft-company-model-ha-420-hondajet-lithium-ion-batteries>>

Filipe Campante and David Yanagizawa-Drott, 2016, long-Range Growth: Economic Development in the Global Network of Air Links.

G. Alonso, A. Benito, L. Lonza, and M. Kousoulidou, 2014, "Investigations on the Distribution of Air Transport Traffic and CO2 Emissions within the European Union", *Journal of Air Transport Management* 36: 85–93.

General Aviation Manufacturers Association, 2016 General Aviation Statistical Databook & 2017 Industry Outlook

Gulfstream Aerospace, viewed January 2018, <<http://www.gulfstream.com/>>

Honda Aircraft, viewed January 2018, <<http://www.hondajet.com/>>

Honeywell, 2017, Honeywell's Global Business Aviation Outlook

<http://www.airbus.com/company/responsibility-sustainability/minimising-environmental-impact.html>

<http://www.tourism2025.org.nz/tourism-2025-archive/grow-sustainable-air-connectivity-2/>>.

<https://p-airnz.com/cms/assets/NZ/PDFs/transport-conference-2007.pdf>>.

IATA, 2015, IATA Air Passenger Forecast Shows Dip in Long- Term Demand, <<http://www.iata.org/pressroom/pr/Pages/2015-11-26-01.aspx>

ICAO, 2009, *Review of the classification and definitions used for civil aviation*, viewed 24 January 2018, <https://www.icao.int/Meetings/STA10/Documents/Sta10_Wp007_en.pdf>.

ICAO, Briefing for RIO +20, Global Aviation and Our Sustainable Future.



K. van Goeverden, B. van Arem, R. van Nes, (2016) "Volume and GHG emissions of long-distance travelling by Western Europeans". *Transportation Research Part D*, 45, 28–47, <http://dx.doi.org/10.1016/j.trd.2015.08.009>.

Kharina A., Rutherford D., 2015, Fuel efficiency trends for new commercial jet aircraft: 1960 to 2014, International Council on Clean Transportation, Washington, USA.

L. Christensen, 2016, "Environmental impact of long distance travel", *Transportation Research Procedia* 14 850 – 859, doi: 10.1016/j.trpro.2016.05.033

L. Christensen, 2016, "Environmental impact of long distance travel", *Transportation Research Procedia* 14 850 – 859, doi: 10.1016/j.trpro.2016.05.033

Leeuwen B., Capelle C., Casanova A.M., Finn S., Guo S., 2016, An Overview of Commercial Aircraft 2017 – 2018, DVB Bank SE, Aviation Research (AR), London, United Kingdom.

M. N. Postorino, L. Mantecchini, 2014, "A Transport Carbon Footprint Methodology to Assess Airport Carbon Emissions," *Journal of Air Transport Management* 37: 76–86.

Miquel Ros, 2017, Ultra long-haul: On board the world's longest flight.

Mokhtarian, P. L. (2009). If telecommunication is such a good substitute for travel, why does congestion continue to get worse? *Transportation letters -The International Journal of Transportation Research* 1(1), 1-17

Mott MacDonald, 2017, *Annual Analyses of the EU Air Transport Market 2016*, viewed 24 January 2018, <https://ec.europa.eu/transport/sites/transport/files/2016_eu_air_transport_industry_analyses_report.pdf>.

Nicolas Bernier, 2017, 4 Considerations airlines must make when planning new routes, Sabre, <<https://www.sabre.com/insights/4-considerations-airlines-must-make-when-planning-new-routes/>>.

ONE Aviation Corporation, viewed January 2018, <<https://www.oneaviation.aero/>>

Paddy Goodall, Airservices, Long Range Air Traffic Flow Management (LR-ATFM). A perspective.

Petersen, M. S., Sessa, C., Enei, R., Uljed, A., Larrea, E., Obisco, O., 2009, *Transvisions: Report on Transport Scenarios with a 20- and 40-Year Horizon*.

Scrosati, B., 2015, *Advances in Battery Technologies for Electric Vehicles*, Elsevier, Amsterdam, Netherlands.



SESAR JU, viewed December 2017, <<https://www.sesarju.eu>>

Sessa, C. and Enei, R., 2010, EU transport demand: Trends and drivers, ISIS, paper produced as part of contract ENV.C.3/SER/2008/0053 between European Commission Directorate-General Environment and AEA Technology plc

SKYbrary, 2016, *Aircraft Batteries*, viewed 08 February 2018, <https://www.skybrary.aero/index.php/Aircraft_Batteries>

Tariq, M., 2017, *IET Electr. Syst. Transp.*, **7**, 93-103.

Textron Aviation, viewed January 2018, <<http://txtav.com/>>

The Statistics Portal, Average prices for Boeing aircraft as of February 2017, viewed January 2018, <<https://www.statista.com/statistics/273941/prices-of-boeing-aircraft-by-type>>

Van Wee, B. (2015). Peak car: The first signs of a shift towards ICT-based activities replacing travel? A discussion papers. *Transport Policy*, 42, 1-3.

Vutetakis, D., 2001, *The Avionics Handbook*, CRC Press, Boca Raton, Florida.

William M.Swan, Nicole Adler, 2005, Aircraft trip cost parameters: A function of stage length and seat capacity.

Chapter 8

2016, Noel Yuhanna and Brian Hopkins, *TechRadar™: Big Data*, Q1 2016.

2016, Tim Hoyland, Chris Spafford, Andrew Medland, MRO Big data- a lion or a lamb? Innovation and adoption in aviation MRO, MRO Survey 2016, Oliver Wyman.

2017, A.T. Kearney, *Technology and Innovation for the Future of Production: Accelerating Value Creation*, World Economic Forum, Geneva, Switzerland.

2017, Air Marshal Anil Chopra, *Artificial intelligence in aviation*, <<http://www.indiandefencereview.com/news/artificial-intelligence-in-aviation/>>.

2017, *Artificial intelligence and robotics*, UK-RAS Network, London <<http://hamlyn.doc.ic.ac.uk/uk-ras/white-papers>>.

2017, *Artificial intelligence the next digital frontier*, McKinsey Global institute.

2017, James Manyika, *10 imperatives for Europe in the age of AI and automation*, <<https://www.mckinsey.com/featured-insights/europe/ten-imperatives-for-europe-in-the-age-of-ai-and-automation>>.



2017, Kasey Panetta, *Top Trends in the Gartner Hype Cycle for Emerging Technologies, 2017*, <<https://www.gartner.com/smarterwithgartner/top-trends-in-the-gartner-hype-cycle-for-emerging-technologies-2017/>>.

2017, Kristen Kinney, *Airports and analytics: Big data in aviation*, <<https://www.zoomdata.com/blog/airports-and-analytics-big-data-aviation/>>.

2017, Sebastien Maire, Chris Spafford, *The Data Science Revolution That's Transforming Aviation*, <<https://www.forbes.com/sites/oliverwyman/2017/06/16/the-data-science-revolution-transforming-aviation/#54bc1bb37f6c>>.

ACI, CANSO, IATA, ICAO and ASD, 2014, *Civil aviation cybersecurity action plan*, viewed 23 February 2018.

AIAA, 2013, *A Framework for Aviation Cybersecurity*, viewed 23 February 2018.

AIAC, 2018, *Aerospace Industries Association of Canada*, Digitization and Industry 4.0 in Aerospace and Defence: boosting the transformation, viewed February 2018, <http://aiac.ca/blog_posts/digitization-industry-4-0-aerospace-defense-boosting-transformation>

Akerkar R., 2014, *Analytics on Big Aviation Data: Turning Data into Insights*, *International Journal of Computer Science and Applications*, **Volume 11, No. 3**, pp. 116 – 127.

Alan Tovey, AT, 2015, Airbus's quantum computing brings Silicon Valley to the Welsh Valleys, *The Telegraph*, <<https://www.telegraph.co.uk/finance/newsbysector/industry/12065245/Airbuss-quantum-computing-brings-Silicon-Valley-to-the-Welsh-Valleys.html>>.

Anandan T. M., 2016, Aerospace Manufacturing on Board with Robots, *Robotic Industries Association, Robotics Online*, viewed February 2018, <https://www.robotics.org/content-detail.cfm/Industrial-Robotics-Industry-Insights/Aerospace-Manufacturing-on-Board-with-Robots/content_id/5960>

Barbosa G. F., Aroca R. V., 2017, Advances of Industry 4.0 Concepts on Aircraft Construction: An Overview of Trends, *Journal of Steel Structures & Construction*, **Volume 3, Issue 1**.

Bhadani, A., Jothimani, D. (2016), Big data: Challenges, opportunities and realities, Pennsylvania, USA.

Collective of authors, 2018, Cybersecurity in the Aviation Industry, viewed 7 February 2018, <https://www.floridatechonline.com/blog/information-technology/cybersecurity-in-the-aviation-industry/>

Condé Nast, 2018, *The age of electric aviation is just 30 years away*, viewed 03 March 2018, <<https://www.wired.com/2017/05/electric-airplanes-2>>.



Cooper, P., 2017, "Aviation Cybersecurity", Atlantic Council, Report

Cuberg, 2018, *The Future of Battery is Here*, viewed 20 March 2018, <<http://www.cuberg.net/>>.

Dr. John E. Kelly III, 2015, Computing, cognition and the future of knowing How humans and machines are forging a new age of understanding, IBM Research and Solutions Portfolio, EEU.

Duchamp, H, Bayram, I., Korhani, R., "Cyber-Security, a new challenge for the aviation and automotive industries", Harvard Edu, Seminar in Information Systems: Applied Cybersecurity Strategy for Managers

Earl Harris Jr., Eric Bloedorn, Neal J. Rothleder, *Recent Experiences with Data Mining in Aviation Safety*, The MITRE Corporation.

Ehang, 2018, *Ehang 184 specifications*, viewed 22 March 2018, <<http://www.ehang.com/ehang184/specs/>>.

ENAC, *Cybersecurity from an aviation security perspective*, viewed 23 February 2018, <<https://www.eurocontrol.int/sites/default/files/events/presentation/art-workshop-atm-security-and-cybersecurity-5-gualino.pdf>>.

European Committee for Standardization, 2017, *Annual Report*, viewed 13 March 2018, <<https://www.cen.eu/Pages/default.aspx>>.

FAA, 2017, *Data link communications - Advisory circular*, viewed 23 February 2018, <https://www.faa.gov/documentLibrary/media/Advisory_Circular/AC_90-117.pdf>.

Grady, M., 2018, *Aviation Chooses Battery Supplier*, AVweb. viewed 7 March 2018, <<https://www.avweb.com/avwebflash/news>>.

Guadagno et al., (2015) Correlation between electrical conductivity and manufacturing processes of nanofilled carbon fibre reinforced composites, *Composites Part B* 80 , pp. 7-14 <https://doi.org/10.1016/j.compositesb.2015.05.025>

Guadagno et al., (2015) Effective formulation and processing of nanofilled carbon fibre reinforced composites. *RSC Adv.*,5, 6033, DOI: 10.1039/C4RA12156B

Hammerschmidt, C., 2015, *eeNEws Europe*, viewed 20 March 2018, <<http://www.eenewseurope.com/news/battery-powered-aircraft-crosses-alps>>.

He K.,Jin M., 2016, Cyber-Physical System for maintenance in industry 4.0, exam work, *Jonköping University*, Jönköping, Sweden.



IATA, 2017, *Aviation Usages of Frequency Spectrum*, viewed 23 February 2018, <<http://www.iata.org/whatwedo/ops-infra/air-traffic-management/Documents/Aviation%20Usages%20of%20Frequency%20Spectrum%20-%2020170726.pdf>>

International Civil Aviation Organization, "Global Aviation and Our Sustainable Future", United Nations Conference on Sustainable Development, Briefing for RIO+20

J.VijiPriya, Jammi Ashok, S.Suppiah, 2016, "A review on significance of sub fields in artificial intelligence", *International Journal of Latest Trends in Engineering and Technology (IJLTET)*.

Javaid, M. A., "CYBER SECURITY: CHALLENGES AHEAD", Nexus academic publishers

Kulik A., Dergachev K., 2016, Intelligent Transport Systems in Aerospace Engineering. In: Ślaskowski A., Pamuła W. (eds) Intelligent Transportation Systems – Problems and Perspectives. Studies in Systems, Decision and Control, vol 32. Springer, Cham

L. Vertuccio et al., (2016) "Piezoresistive properties of resin reinforced with carbon nanotubes for health-monitoring of aircraft primary structures", *Composites Part B* 107 pp. 192-202 <http://dx.doi.org/10.1016/j.compositesb.2016.09.061>.

Lange Aviation, 2018, *Antares 20E*, viewed 15 March 2018, <<http://www.lange-aviation.com/en/produkte/antares-20e>>.

Lilium, 2018, *The Lilium Jet*, viewed 22 March 2018, <<https://lilium.com/>>.

Madni, A.M., 2010, "Integrating Humans with Software and Systems: Technical Challenges and a Research Agenda," *Systems Engineering*, Vol. 13, No. 3, pp. 232-245

Madni, A.M., 2011, "Integrating Humans with and Within Software and Systems: Challenges and Opportunities," (Invited Paper) *Crosstalk: The Journal of Defence Software Engineering*, "People Solutions."

Madni, A.M., Margalit, G., and Chu, Y., 1985, "Pilot's Associate Definition Study: Structured Piloting Task Analyses for AI/Expert Systems Applicability," *Perceptronics Final Technical Report PFTR-1176-85-6*

Noth, A., 2008, *Design of Solar Powered Airplanes for Continuous Flight*, PhD Thesis, Autonomous Systems Lab, ETH Zürich, Zürich, Switzerland.

O. Delain, O. Ruhlmann, E. Vautier, C. Johnson, M. Shreeve, P. Sirko and V. Prozserin, 2016, *Addressing airport cyber-security*, viewed 23 February 2018, <https://www.sesarju.eu/sites/default/files/documents/news/Addressing_airport_cyber-security_Full_0.pdf>.



Oettershagen, P., 2017, Design of small hand-launched solar-powered UAVs: from concept to study in an multi-day world endurance record flight., *J. Field Robotics*, **34**, 1352-1377.

Olli Sjöblom, *Data Mining Challenges in the Management of Aviation Safety*, Turku University School of Economics, Turku, Finland.

OXIS Energy Ltd, 2018, viewed 20 March 2018, <<https://oxisenergy.com/applications/>>.

Panasonic avionics, *Cybersecurity: What are the biggest threats to airlines?*, viewed 18 January 2018, <<https://up.panasonic.aero/2018/01/18/cybersecurity-biggest-threats-airlines/>>.

PWC, 2016, "Aviation perspectives - Cybersecurity and the airline industry", Special Report Series.

PWC, Industry 4.0: Building the digital enterprise, Aerospace, defence and security key findings, 2016 Global Industry 4.0 Survey – Industry key findings, viewed February 2018, <<http://www.pwc.com/industry40>>

R. Guzman de Villoria et al. (2016) In-plane strength enhancement of laminated composites via aligned carbon nanotube interlaminar reinforcement, *Composites Science and Technology*. DOI: 10.1016/j.compscitech.2016.07.006

Rob High, *The Era of Cognitive Systems: An Inside Look at IBM Watson and How it Works*, IBM Watson, EEUU.

Rüßmann M., Lorenz M., Gerbert P., Waldner M., Justus J., Engel P., Harnisch M., 2015, *Industry 4.0, The Future of Productivity and Growth in Manufacturing Industries*, The Boston Consulting Group, Boston, USA.

SAFT 2018, viewed 28 February 2018, <<https://www.saftbatteries.com/press-releases>>.

Santo M., 2016, Digitalization and Industry 4.0 in the Aviation Industry (first abstract of a coming publication), *Managing Partner h&z Management Consulting*, Munich, Germany

Schwarz, R., 2016, *International Conference on Electrical Systems for Aircraft, Railway, Ship Propulsion and Road Vehicleless & International Transportation Electrification Conference*, Toulouse, France, 1-4.

Šefčovič, M., 2018, *Industry Days Forum on the EU Batteries Alliance*, Brussels, 23 February 2018. <http://europa.eu/rapid/press-release_SPEECH-18-1168_en.html>.

Sigler, D., 2017, *EViation Electric Aircraft: Demanding Disruption*, viewed 20 March 2018, <<http://sustainableskies.org/11993-2/>>.

Sigler, D., 2018, *Zee? Kitty Hawk? Cora?*, viewed 16 March 2018, <<http://sustainableskies.org/zee-kittyhawk-cora/>>.



Simon, F., 2018, viewed 28 February 2018, *Electric cars*, <www.euractiv.com/section/electric-cars/news/airbus-style-eu-battery-alliance-splits-before-take-off>.

Sion Power, 2018, viewed 20 March 2018, <<http://www.sionpower.com/markets-unmanned-aerial-vehicles.php>>.

Solar Impulse Foundation, 2018, *Electric, autonomous, and shared: what's the future of clean mobility?*, viewed 12 March 2018, <<https://solarimpulse.com/>>.

THALES, 2017, *How a global industry player addresses the Cybersecurity challenges of Air Transport*, viewed 23 February 2018.

Tschan, C., Yucel, A. Nguyen, N. (Eds.), 2016, *Roadmap for Intelligent Systems in Aerospace*, Intelligent Systems Technical Committee, American Institute of Aeronautics and Astronautics, First Edition

Tschan, C., Yucel, A. Nguyen, N., 2016, *Roadmap for Intelligent Systems in Aerospace*, Intelligent Systems Technical Committee, American Institute of Aeronautics and Astronautics, First Edition

Vertical Flight Society, 2018, *eVTOL News™ Directory Breaks 100 Aircraft Listed*, viewed 22 March 2018, <<http://evtol.news/>>.

Vuksanović D., Vešić J., 2016, *Industry 4.0: The Future Concepts and New Visions of Factory of the Future Development*, International Scientific Conference On ICT and E-Business Related Research, SINTEZA 2016, Belgrade, Serbia.

X. Zhang et al., (2018) Recent advances in the development of aerospace materials. *Progress in Aerospace Sciences* 97; 22–34 <https://doi.org/10.1016/j.paerosci.2018.01.001>

Chapter 9

2006, Steven McGuire, *The United States, Japan and the Aerospace Industry: technological change in the shaping of a political relationship*, University of Bath, United Kingdom.

2011, Ghim-Lay Yeo, *ARJ21 first delivery likely delayed*, <<https://www.flightglobal.com/news/articles/arj21-first-delivery-likely-delayed-361017/>>.

2012, *From air transport system 2050 vision to Planning for research and innovation*, Association of European Research Establishments in Aeronautics (EREA).



2012, Reuters Staff, *Wing cracks, other flaws delay China jet manufacture*, <<https://in.reuters.com/article/uk-airlines-china-comac/wing-cracks-other-flaws-delay-china-jet-manufacture-idINLNE85700Z20120608>>.

2013, Made with Japan-a partnership on the frontiers of aerospace, Boeing Japan, <https://www.boeing.jp/resources/ja_JP/Boeing-in-Japan/Made-with-Japan/1122_boeing_cb13_final.pdf>.

2014, Mavis Toh, *ANALYSIS: A look into Comac and its C919 ambition*, <<http://www.flightglobal.com/news/articles/analysis-a-look-into-comac-and-its-c919-ambition-404370/>>.

2016, New aviation horizons initiative and complementary investments, National Aeronautics and Space Administration, Washington, DC.

2017, Chad J.R. Ohlandt et al., Chinese investment in U.S. aviation, RAND Corporation, Santa Monica, California.

2017, China's commercial aircraft take-off, Arthur D. Little, <<http://www.adlittle.com/en/insights/viewpoints/china%E2%80%99s-commercial-aircraft-take>>.

2017, Richard A. Bitzinger, *China's New Commercial Airliner: Turbulence Ahead?*, <<https://www.rsis.edu.sg/rsis-blication/rsis/co17095-chinas-new-commercial-airliner-turbulence-ahead/#.W0M9e9IzaUm>>.

2018, Bombardier program status report-CRJ series aircraft, <<https://www.bombardier.com/en/media/commercial-aircraft-status-reports.html>>.

29191-Preliminary_Safety_Overview_2017_-_Publication.pdf

A. Loukianova, 2011, *Cooperative Airspace Security in the Euro-Atlantic Region*, viewed 09 March 2018.

ACI, 2013, *ACI EUROPE POSITION on Aviation Security TEchnology Roadmap*, viewed 12 April 2018.

Air Traffic Services Safety Requirements 2014 (www.caa.co.uk)

Airbus web page <<https://www.airbus.com/>>.

Appalachian State University, *International Airspace Security*, viewed 09 March 2018.

AviationFacts.eu, 2016, *The effectiveness of the changes in aviation security in the United States of America after 9/11*, viewed 12 April 2018, <www.AviationFacts.eu>.



Being web page <<https://www.boeing.com/>>.

Boeing, Aerospace Subsidies Dispute Timeline and Overview.

Bombardier web page, <<https://www.bombardier.com>>.

Commercial Aircraft Corporation of China web page, <<http://english.comac.cc/>>.

COMMISSION OF THE EUROPEAN COMMUNITIES, 2007, *First Report on the implementation of the Single Sky Legislation: achievements and the way forward*, viewed 09 March 2018.

David Learmount, 1996, *Certification "grandfather rights" for derivative aircraft are about to be phased out*, Flight International, London, UK.

Day GA. 2015. FAA Civil Aerospace Medical Institute P.O. Box 25082 Oklahoma City, OK 73125. Aircraft Cabin Bleed Air Contaminants: A Review

Dickson, N., "Aircraft noise technology and International Noise Standards", ICAO Air Transport Bureau, Action Plan on Emission Reduction

EASA "ICAO Annex 19 Safety management"

EASA Annual Safety Review 2017

EASA, "European Aviation Environmental Report 2016", viewed 7 December 2017, <https://ec.europa.eu/transport/sites/transport/files/european-aviation-environmental-report-2016-72dpi.pdf>

EASA, EEA, EUROCONTROL, 2016, *European Aviation Environmental Report*.

EEA, 2014, Transport and Environment Reporting Mechanism.

EUROCONTROL, 2002, *The future of air traffic management service provision from a supply chain*, viewed 09 March 2018.

Eurocontrol, 2018, *Airport Collaborative Decision Making (A-CDM)*, viewed 2 March 2018, <www.eurocontrol.int/articles/airport-collaborative-decision-making-cdm>.

EUROCONTROL, FAA, 2016, *Comparison of Air Traffic Management-Related Operational Performance: U.S./Europe*, viewed 09 March 2018.

European Aviation Safety Agency, viewed March 2018, <<https://www.easa.europa.eu/>>

European Commission, 2018, "Air Environment", viewed 19 March 2018, https://ec.europa.eu/transport/modes/air/environment_en



<http://www.icao.int/about-icao/Pages/Strategic-Objectives.aspx>.

https://www.icao.int/safety/Documents/ICAO_SR_2017_18072017.pdf

I. Schagaev, B.R. Kirk, Active System Control, DOI 10.1007/978-3-319-46813-6_1 Springer International Publishing AG 2018

IATA, *A Blueprint for the Single European Sky*, viewed 09 March 2018.

Ibrahim Habli 2018. Safety Standards: Chronic Challenges and Emerging Principles

ICAO Doc 10004 Global Aviation Safety Plan 2017 – 2019

ICAO Doc 10004 Global Aviation Safety Plan 2017 – 2019

ICAO DOC 9966 - Manual for the Oversight of Fatigue Management Approaches. Second edition, 2016

ICAO Safety Report 2017 Edition

ICAO Secretariat "Safety data, performance metrics and indicators". Presented at 2015 High-level Safety Conference (HLSC 2015)

ICAO, 2016, *ICAO Environmental Report 2016, Aviation and Climate Change*.

ICAO, 2017, "CORSIA MRV System: Monitoring of CO2 Emissions", ICAO Regional Seminar on CORSIA, Session 2.

ICAO, 2018, "Emissions from fuel used for international aviation and maritime transport", UNITED NATIONS FRAMEWORK CONVENTION ON CLIMATE CHANGE (UNFCCC), The Forty-eighth Session of the UNFCCC Subsidiary Body for Scientific and Technological Advice (SBSTA48).

ICAO-Doc 8984 - Manual of Civil Aviation Medicine, third Editions - 2012

Igor Schagaev, B.R. Kirk. 2017. Active System Control. Aviation: Landscape, Classification, Risk Data.

INDRA, *Air Traffic Management brochure*, viewed 09 March 2018.

International Civil Aviation Organization, viewed March 2018, <www.icao.int>

International Energy Agency, 2015, "Energy and Climate Change", *World Energy Outlook Special Report*

JADC, 2017, *Worldwide Market Forecast 2017-2036*, Japan.



Martens, D., 2017, *An EU Fair Trade policy? Conceptual analysis and mapping the field*, Draft paper presented for the EU Trade Policy Conference, Vienna 2017.

OECD, 2011, *Smart Rules for Fair Trade: 50 years of Export Credits*, OECD Publishing.

SAFETY STANDARDS: CHRONIC CHALLENGES AND EMERGING PRINCIPLES Ibrahim Habli).

SKYbrary by EUROCONTROL, *Single European Sky (SES)*, viewed 09 March 2018, <[https://www.skybrary.aero/index.php/Single_European_Sky_\(SES\)](https://www.skybrary.aero/index.php/Single_European_Sky_(SES))>.

Stephen Trimble, ST, 2007, Boeing and FAA agree ground rules for certification of 747-8, Flight International, < <https://www.flightglobal.com/news/articles/boeing-and-faa-agree-ground-rules-for-certification-219625/>>.

Suzanne K. Kearns, *Fundamental of International aviation*, Taylor and Francis, 2018

The Boeing company and Japan, <https://www.boeing.com/resources/boeingdotcom/company/key_orgs/boeing-international/pdf/japanbackgrounder.pdf>.

Žabokrtský M., 2011, *EU Air Transport Policy: Implications on Airlines and Airports*, Současná Evropa, **Volume 01/2011**.

Zurich Airport, 2015, *Environmental benefits of A-CDM at Zurich Airport*, Report, Zurich, Switzerland.

Chapter 10

"HiP Air- High Performance Work Practices for Competitive SMEs in Aviation Sector", High Performance Work Practices best practices report, 2016.

"HiP Air- High Performance Work Practices for Competitive SMEs in Aviation Sector", High Performance Work Practices in the aviation sector report, 2016.

"HiPAir – High Performance Work Practices for competitive SMEs in aviation sector", Erasmus + Programme, 2015-2017, EC Project Reference: 2015-1-PL01-KA202-016745 [Online] Available: <<http://hipair.eu>>

2007, Philippe Couillard, Aeronautical and space training in Europe, <<http://www.academie-air-espace.com/upload/doc/Aerotraining.pdf>>.

AlixPartners, 2017, *It's All About People*, viewed December 2017, <<https://legacy.alixpartners.com/en/Publications/AllArticles/tabid/635/articleType/ArticleView/articleId/466/Its-All-About-People.aspx>>



Canadian Council for Aviation and Aerospace, 2012, *Skilled Labour in the Canadian Aerospace Manufacturing Sector*, Department of Foreign Affairs and International Trade Canada, Ottawa, Canada

Dasgupta P., Dodge W., 2010, *Title High Fliers. Creating the talent, leadership, culture and organization capabilities to meet the new business challenges of the aerospace and defence industry*, Accenture, City, Country

European Aerospace Cluster Partnership web page, <<http://www.eacp-aero.eu/>>.

Fundacji Wspierania Edukacji przy Stowarzyszeniu „Dolina Lotnicza”, 2012, viewed December 2017, <<https://dolina-wiedzy.pl/fundacja/>>

<http://muse.idr.upm.es/index.php/es/ordenacion-academica/programa-y-guias-de-aprendizaje>

<http://www.enaee.eu>

<http://www.ingindinf.polimi.it/didattica/regolamenti-didattici-aa-20172018/>

<http://www.pegasus-europe.org>

<http://www.polimi.it>

<http://www.polito.it>

<http://www.unibo.it>

<http://www.uniroma1.it>

<https://tum-asia.edu.sg/>

<https://www.isae-supero.fr/fr/formations/la-formation-ingenieur-isae-supero/>

<https://www.masterstudies.com/Master-of-Science-in-Space-and-Astronautical-Engineering/Italy/Sapienza-University-of-Rome/>

https://www.pegasus-europe.org/userfiles/Pegasus_Brochure_issue3.pdf

https://www.pegasus-europe.org/userfiles/Pegasus_presentation.pdf

<https://www.tudelft.nl/en/ae/>

https://www.uc3m.es/ss/Satellite/Postgrado/en/Detalle/Estudio_C/1371209075492/1371219633369/Master_in_Aeronautical_Engineering#program



<https://www.university.it>

International Civil Aviation Organization, ICAO Addresses Shortage of Skilled Aviation Professionals, viewed December 2017, <<https://icao.int/Newsroom/Pages/ICAO-Addresses-Shortage-of-Skilled-Aviation-Professionals.aspx>>

Knowles E., 2017, *PROSPECTS*, viewed December 2017, <<https://www.prospects.ac.uk/jobs-and-work-experience/job-sectors/engineering-and-manufacturing/the-biggest-challenges-facing-the-engineering-sector>>

Koudelková P., Milichovský F., 2015, *Successful innovation by motivation, Business: Theory and Practice*, **Volume 16, No. 2**, pp. 223–230.

Marcati A., Guido G., Peluso A.M., 2008, *The role of SME entrepreneurs' innovativeness and personality in the adoption of innovations, Research Policy*, **Volume 37**, pp. 1579–1590.

Chapter 11

2009, Luisa Orera Orera, *María Moliner: Librarian and Author of the Dictionary of Spanish Usage*, Zaragoza, Spain.

2009, Maria R. Osuna Alarcón, *María Moliner and Her Contribution to the History of Spain's Public Libraries*, University of Salamanca.

2011, Juan-Carlos Argüelles, M^a Isabel Segura, "María Moliner, Primera mujer profesora en la universidad de Murcia", Valencia University, Spain.

2016, *Women in Science - the Tradition of Maria Skłodowska-Curie*, 29-30.09.2016, Lodz, Poland

2017, *The Global Gender Gap Report*, World Economic Forum, Geneva, Switzerland.

2018, , *Meeting our commitments to gender equality in education*, Global Education Monitoring Report Gender Review, Paris, France.

2018, *2018 Report on equality between women and men in the EU*, European Commission.

Altınay, A. G., 2001, *Dünyanın İlk Kadın Savaş Pilotu: Gökçen* [World's First Women's War Pilot: Gökçen] (in Turkish). BİA Haber Merkezi, Istanbul, Turkey

Aviation Industry Woman Association, IAWA, 2018, <<https://iawa.org/awards/>>.

Bednarek, Janet R. Daly; Bednarek, Michael H., 2003, *Dreams of Flight: General Aviation in the United States*. College Station, Texas: Texas A&M University Press.



Claudia M. Oakes. (1985) *United States Women in Aviation 1930-1939*. SMITHSONIAN INSTITUTION PRESS City of Washington

Eurostat statistics web page, <http://ec.europa.eu/eurostat/statistics-explained/index.php/Education_and_training_in_the_EU_-_facts_and_figures>.

FAA 2017 Civil Airmen Statistics. Viewed May 2018, https://www.faa.gov/data_research/aviation_data_statistics/civil_airmen_statistics

Goldsmith B., 2016, *Geniusz i obsesja*, Wydawnictwo Dolnośląskie, Wrocław, Poland

Hallonquist A. 2014, Mercury 13, The Women of the Mercury Era viewed May 2018: <http://www.mercury13.com/>

<http://collections.lib.purdue.edu/aearhart/timeline.php>

http://www.nasm.si.edu/research/aero/women_aviators/womenavsp.htm

María Moliner and Her Contribution to the History of Spain's Public Libraries <http://www.jstor.org/stable/25549549>

Maria Skłodowska-Curie, tłumaczenie Krystyna Dolatowska, 1978, *Korespondencja Marii Skłodowskiej-Curie z córką Ireną: 1905-1934 wybór*, Państwowy Instytut Wydawniczy, Warsaw, Poland

MIT,Dava J. Newman, Bibliography, <<http://web.mit.edu/aeroastro/www/people/dnewman/bio.html>>.

NASA 1962 Qualifications for Astronauts Hearing viewed May 2018, <https://web.archive.org/web/20151211072933/http://nasa.lu/static>

NASA,Deputy Administrator Dava Newman, Embracing the "Grandest of Challenges", 2015, <<https://blogs.nasa.gov/newman/2015/08/17/embracing-the-grandest-of-challenges/>> .

Niedźwiedzka M., 2017, *Maria Skłodowska-Curie*, Wydawnictwo Prószyński i S-Ka, Warsaw, Poland

Skwarzec B., 2011, *Maria Skłodowska-Curie (1867–1934) — jej życie i odkrycia naukowe*, Forum Medycyny Rodzinnej, **Volume 5, nr 3**, pp. 251–265

The Editors of Encyclopaedia Britannica, 2018, *Encyclopaedia Britannica*, viewed June 2018, <<https://www.britannica.com/biography/Marie-Curie>>

