SAE INTERNATIONAL

SAE AEROSPACE STANDARDS

Overview and Highlights

26.04.2016

BRIEF INTRODUCTION TO SAE INTERNATIONAL

ABOUT SAE

- Not for profit, non-lobbying technical society
- Global, industry-managed, industry-led programmes
- Standards Development Organisation (SDO)
- Wealth of engineering knowledge in books, standards, papers, online content
- Technical conference provider
- Engineering training provider
- Offices in North America, Asia, Europe:
  - World Headquarters – Warrendale PA, USA
  - ARINC HQ – Bowie, MD, USA
  - Aerospace Standards – Washington DC
  - Asia – Shanghai, PRC
  - Aerospace Standards Europe – London

THE SAE PORTFOLIO

a global association of more than 140,000 engineers and related technical experts

PUBLICATIONS

100,000+ collection of technical publications

TECHNICAL STANDARDS

35,000+ aerospace and ground vehicle standards

ENGINEERING EVENTS

Over 30 global technical events annually for the aerospace, automotive, and commercial vehicle sectors

FOUNDATION

Charitable arm of SAE International, supporting STEM for over 30 years; 76,000 K-12 students and over 7,000 college students.

MEDIA

Magazines, *e*Newsletters, custom publishing, Tech Briefs Media Group

MEMBERSHIP

140,000 members worldwide, multiple-tiered/benefit model

PROFESSIONAL DEVELOPMENT

400 courses portfolio, webinars; in-house, corporate and self-paced learning

SAE HISTORY – AND FUTURE

1905

SAE formed in 1905 to promote safety and common practices for the emerging automobile market.

SAE charter expanded in 1916 to incorporate aeronautics

1st SAE Aerospace Standard, 1917

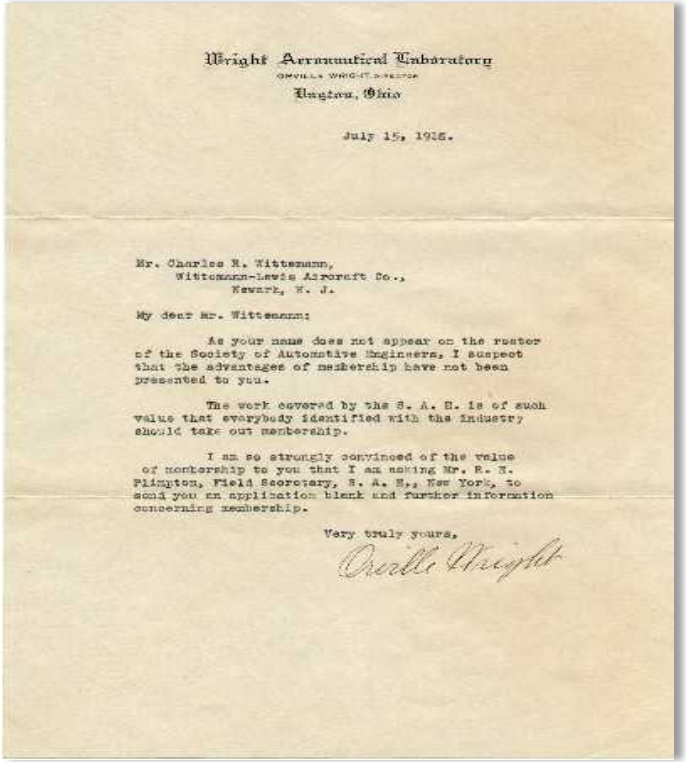
SAE member Elmer Sperry created the term “Automotive” - from Greek autos (self), & Latin motivus (of motion) to represent any form of self powered vehicle

Electronic publishing, 1980s

Opened offices in Washington DC, London, Shanghai

100 year anniversary of the 1st aerospace standard, 2016

SAE AEROSPACE STANDARDS HISTORY – FROM 1916



Wright Aeronautical Laboratory
ORVILLE WRIGHT BUILDING
Dayton, Ohio

July 15, 1918.

Mr. Charles M. Wittemann,
Wittemann-Lewis Aircraft Co.,
Newark, N. J.

My dear Mr. Wittemann:

As your name does not appear on the roster of the Society of Automotive Engineers, I suspect that the advantages of membership have not been presented to you.

The work covered by the S. A. E. is of such value that everybody identified with the industry should take out membership.

I am so strongly convinced of the value of membership to you that I am asking Mr. H. H. Plimpton, Field Secretary, S. A. E., New York, to send you an application blank and further information concerning membership.

Very truly yours,

Orville Wright

The Wright Brothers

"The work covered by the SAE is of such value that everybody identified with the industry should take out membership."
Orville Wright, 1918

THE IMPORTANCE OF STANDARDS

THE IMPORTANCE OF GLOBAL STANDARDS

Standards provide benefits such as:

- Defining accurate and necessary measurements
- Lowering product costs
- Improving product performance, quality, uniformity, interoperability and functionality
- Providing a method to improve health, safety, the environment, communications, competition, international trade
- Improving the quality of life

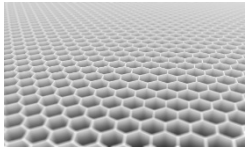
ENABLE SAFER AND MORE EFFICIENT AVIATION

Approximately 1800 SAE International standards are used in the development of a typical aircraft.

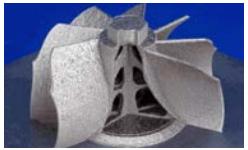
The first aerospace standard was written in 1916.

Today there are over 8500 active aerospace standards and over 17500 historical standards in circulation.

NEW SAE AEROSPACE STANDARDS FOR CUTTING EDGE TECHNOLOGIES



Composite Materials

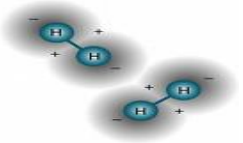


Additive Manufacturing

Fiber-optic networks

Active RFID Tags

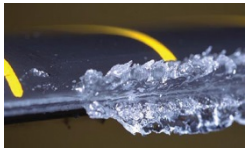
Hydrogen Fuel Cells



LED Runway Lighting and EFVS

Electronics & Avionics Corrosion Protection

Human Factors & Cockpit Electronics



Anti-Icing Technology

Integrated Vehicle Health Management & Prognostics

Electric & More Electric Aircraft

COUNTERFEIT AVOIDANCE STANDARDS

G-19 & G-21 COUNTERFEIT PREVENTION & DETECTION STANDARDS

OEMs/Users of Electronics: **AS5553**

OEMs/Users of Materiel (other than electronics): **AS6174**

Independent Distributors/ Brokers of Electronics: **AS6081**

Authorized Distributors of Electronics: **AS6496**

Test Laboratories of Electronics: **AS6171**

G-19 & G-21 COUNTERFEIT PREVENTION & DETECTION STANDARDS

- G-19 CI - Continuous Improvement Subcommittee
  - AS5553A: Counterfeit Electronic Parts; Avoidance, Detection, Mitigation, and Disposition
- G-19 D - Independent Distributor Subcommittee
  - AS6081: Counterfeit Electronic Parts: Avoidance, Detection, Mitigation, and Disposition; Independent Distribution
- G-19 AD - Authorized Distributor Counterfeit Mitigation Subcommittee
  - AS6496: Counterfeit Electronic Parts Counterfeit Mitigation AD's
- G-19 DR - Distributor Risk Characterization Subcommittee
  - ARP6178: Counterfeit Electronic Parts; Tool for Risk Assessment of Distributors

THE G-19 & G-21 COUNTERFEIT PREVENTION & DETECTION STANDARDS OF GLOBAL STANDARDS

- G-19 A - Test Laboratory Standards Development Subcommittee
  - AS6171: Test Methods Standard; Counterfeit Electronic Parts
  - Tampered Parts: Leading to work on Cyber-Physical Security
- G-19 C - Standards Compliance Verification Subcommittee
  - AS6462: AS5553, Verification Criteria AS6301: AS6081 Verification Criteria
- G-19 T - Definitions Task Group
  - AIR6273: Terms and Definitions - Counterfeit Parts

QUESTIONS?

Director, Washington Operations
SAE International

+1-202-434-8943