Pilots’ Age Limits Study
Disclosure Information

90th Annual Scientific Meeting

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European Union Aviation Safety Agency

I have no financial relationships to disclose.
Content

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Background
Pilot age limits – history

- 1919,
  International Commission for Air Navigation (ICAN) - 45 years age limit
- 1947,
  ICAO takes over from ICAN – no age limit in ICAO documentation
- 1963,
  ICAO introduced age limit 60 based on the statistical data regarding the risk of sudden incapacitation
- 2006,
  ICAO increased the age limit to 65 for multi-crew operations subject to the second member of the flight crew to be below the age of 60
- 2013,
  ICAO proposed to abolish the ‘1 under, 1 over’ policy
1987,
JAA - the age limit of 60 years old for pilots engaged in commercial air transport (CAT) operations except as a member of a multi-pilot crew, subject to the second member of the flight crew being below the age of 60.

Furthermore, it imposed as hard limit for all pilots in CAT operations - age of 65.

Some European States still maintained in their national requirements the hard limit at the age of 60 for all pilots;

However, some allowed single-pilot CAT operations with pilots over the age of 60 under certain circumstances and subject to certain conditions.

2011,
EASA - the Aircrew Regulation Part FCL initially took over the wording of JAR-FCL 1.
Background
Europe – Pilot age limits

The Aircrew Regulation
Commission Regulation (EU) No 1178/2011

FCL.065 Curtailment of privileges of licence holders aged 60 years or more in commercial air transport

(a) Age 60-64. Aeroplanes and helicopters. The holder of a pilot licence who has attained the age of 60 years shall not act as a pilot of an aircraft engaged in commercial air transport except as a member of a multi-pilot crew.

(b) Age 65. Except in the case of a holder of a balloon or sailplane pilot licence, the holder of a pilot licence who has attained the age of 65 years shall not act as a pilot of an aircraft engaged in commercial air transport.

(c) Age 70. The holder of a balloon or sailplane pilot licence who has attained the age of 70 years shall not act as a pilot of a balloon or a sailplane engaged in commercial air transport.
The Agency has received **Article 71 (old 14.4) Exemption** requests with individually specified mitigating measures from Switzerland, Austria, Czech Republic, Germany mainly related to allowing pilots in helicopter ops. (HEMS) to continue after the age of 60.

This is mainly based on the fact that retirement age for male population is 65 in many of the MSs.
Retirement age

- The retirement age in the EU is currently around 65, with some exceptions.
- The retirement age will grow in the next 10 years to reach 68 and above by 2030.

<table>
<thead>
<tr>
<th>Country</th>
<th>Current general retirement age (2019)</th>
<th>Future retirement age</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria (AT)</td>
<td>65 / 60 years</td>
<td>65 years (2033)</td>
</tr>
<tr>
<td>Belgium (BE)</td>
<td>65 years</td>
<td>67 years (2030)</td>
</tr>
<tr>
<td>Bulgaria (BG)</td>
<td>66 years and 4 months</td>
<td>67 years (2023)</td>
</tr>
<tr>
<td>Croatia (HR)</td>
<td>65 years / 62 years</td>
<td>67 years (2038) / 65 years (2030); 67 years (2038)</td>
</tr>
<tr>
<td>Cyprus (CY)</td>
<td>65 years</td>
<td>65+ years (2018)</td>
</tr>
<tr>
<td>Czech (CZ)</td>
<td>63 years and 6 months / 63 years and 2 months</td>
<td>65 years (2036)</td>
</tr>
<tr>
<td>Denmark (DK)</td>
<td>67 years; 65 years and 6 months*</td>
<td>67 years (2022); 68+ years (2030)</td>
</tr>
<tr>
<td>Estonia (EE)</td>
<td>63 years and 6-9 months</td>
<td>65 years (2026) 68+ (2027)</td>
</tr>
<tr>
<td>Cyprus (CY)</td>
<td>67 years; 65 years and 6 months*</td>
<td>67 years (2022); 68+ years (2030)</td>
</tr>
<tr>
<td>Czech (CZ)</td>
<td>63 years and 6 months / 63 years and 2 months</td>
<td>65 years (2036)</td>
</tr>
<tr>
<td>France (FR)</td>
<td>66 years and 2 months</td>
<td>67 years (2023)</td>
</tr>
<tr>
<td>Germany (DE)</td>
<td>65 years and 7 months</td>
<td>67 (2031)</td>
</tr>
<tr>
<td>Great Britain (GBR)</td>
<td>65 years</td>
<td>67+ (2028), 68 (2046)</td>
</tr>
<tr>
<td>Greece (EL)</td>
<td>65 years</td>
<td>67+ years (2021)</td>
</tr>
<tr>
<td>Hungary (HU)</td>
<td>64 years</td>
<td>65 years (2022)</td>
</tr>
<tr>
<td>Ireland (IE)</td>
<td>66 years</td>
<td>68 years (2028)</td>
</tr>
<tr>
<td>Italy (IT)</td>
<td>66 years and 7 months</td>
<td>67+ years (2022)</td>
</tr>
<tr>
<td>Latvia (LV)</td>
<td>63 years and 6 months</td>
<td>65 years (2025)</td>
</tr>
<tr>
<td>Lithuania (LT)</td>
<td>63 years and 10 months / 62 years and 8 months</td>
<td>65 years (2026)</td>
</tr>
<tr>
<td>Luxembourg (LU)</td>
<td>65 years</td>
<td>67+ years (2022)</td>
</tr>
<tr>
<td>Malta (MT)</td>
<td>63 years</td>
<td>65 years (2027)</td>
</tr>
<tr>
<td>Netherlands (NL)</td>
<td>66 years</td>
<td>67+ years (2022)</td>
</tr>
<tr>
<td>Poland (PL)</td>
<td>65 years / 60 years</td>
<td>66+ years (2016)</td>
</tr>
<tr>
<td>Portugal (PT)</td>
<td>66 years and 5 months</td>
<td>66+ years (2016)</td>
</tr>
<tr>
<td>Romania (RO)</td>
<td>65 years / 61 years – 61 years and 2 months</td>
<td>-/63 years (2030)</td>
</tr>
<tr>
<td>Slovakia (SK)</td>
<td>62 years and 6 months</td>
<td>63 years and 2 months+ (2024)</td>
</tr>
<tr>
<td>Slovenia (SI)</td>
<td>65 years</td>
<td>65 years</td>
</tr>
<tr>
<td>Spain (ES)</td>
<td>65 years and 6 months</td>
<td>67 years (2027)</td>
</tr>
<tr>
<td>Sweden (SE)</td>
<td>61-67 years; 65 years*</td>
<td>63-69 (GP; 2023), 63+ (2026); 66 (2023), 66+ (2026)</td>
</tr>
</tbody>
</table>
Life expectancy in the EU has increased

- Is there a link between increased life expectancy and fitness?
Comparison – Life expectancy and Age limit

- Life expectancy - European Union
- Life expectancy - World
- Age limit (ICAO)

5/27/2019
ASMA - ICAO meeting
The aviation industry is expanding

The demand for properly trained pilots is increasing

To be pilot in not so attractive

Retirement age in the EU has been increased to 65 years old or above

Life expectancy in the EU has increased
The Agency has requested information from ICAO, FAA, Transport Canada, NZ, Japan and China on how these regulatory bodies are dealing with the Age issue.

- The FAA has no known plans to amend their age 60 limitation.
- Transport Canada has abolished seemingly all age limitation whilst filing a difference to ICAO.
- Australia and New Zealand informed EASA that the state law forbids the limitation of a person’s right to work based on age, as it is considered ‘age discrimination’.
- Japan has raised the mandatory retirement age to 68 in March 2015.
The Agency launched a Research study “Pilot age limits in CAT operations”

Proposal contribution

- Assess the need for a regulatory pilot age limit in order to mitigate the risk to flight safety resulting from the potential increasing cases of sudden incapacitation for pilots aged over 60.
- Considering the different types of CAT operations, determine whether the risk of incapacitation can be mitigated by specific health screening or shortened screening intervals rather than by an arbitrary age limit.
- In the case where the results will show:
  - the need to maintain a strict age limit, mention if the current age limit is relevant, or
  - the need to be adjusted and how that can be done, propose a battery of tests (medical, physiological, psychological, etc.) to support an aero-medical decision on the applicant’s fitness on an individual basis.
Task 1. LITERATURE REVIEW AND GATHERING OF AVAILABLE DATA

Task 2. RISK ASSESSMENT MODEL BASED ON OPERATIONS CONSIDERATIONS

Task 3. AEROMEDICAL ASSESSMENT AND EVIDENCE-BASED AERO-MEDICAL REQUIREMENTS TO DETERMINE APPLICANT’S FITNESS ON AN INDIVIDUAL BASIS

- INITIAL SCREENING OF CARDIOVASCULAR RISKS IN ASYMPTOMATIC PILOTS
- ENHANCED SCREENING OF CARDIOVASCULAR RISKS IN ASYMPTOMATIC PILOTS

Task 4. RECOMMENDATIONS FOR IMPLEMENTING RESEARCH RESULTS AND FOR FURTHER INVESTIGATION
Pilot Age Study – Project tasks

Kick-off

T1: Literature Review & Data Collection

T2: Risk Assessment

T3: Screening of Cardiovascular Risks

T4: Conclusions

Workshop

2017

Nov Dec Jan Feb Mar Apr May Jun Jul Aug Sep Oct Nov Dec Jan Feb Mar

2019
Analysis of the literature

- In-flight incapacitation as a consequence of medical problems is rare
  - up to 0.45 times per 106 flight hours or 0.25% per annum

- Majority of the incapacitation causes are age-independent
  - E.g gastro-intestinal conditions, laser strikes, headaches

- Most frequent age-dependent medical causes for total incapacitation
  - cardiovascular, cerebrovascular and neurological conditions.

- Most prevalent medical reasons for long-term grounding of pilots
  - Cardiovascular, neurological and psychological/psychiatric conditions

- Disqualification rates increase with age
  - The assessment of this risk is hindered by small numbers of pilots aged over 60
Analysis of the collected data

- Six countries supplied medical data of good quality
  - Number of pilots screened
  - Number of pilots declared (temporarily) unfit
  - Medical diagnosis
  - Age
  - CAT category (Class 1 and 2)
Analysis of the collected data

<table>
<thead>
<tr>
<th></th>
<th>CLASS1</th>
<th>UNFIT (%)</th>
<th></th>
<th>CLASS2</th>
<th>UNFIT (%)</th>
<th></th>
<th>TOTAL</th>
<th>UNFIT (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>50,101</td>
<td>1,072 (2.1%)</td>
<td>32,334</td>
<td>652 (2.0%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>82,435</td>
<td>1,724 (2.1%)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Percentage (temp) unfit for each age category

<table>
<thead>
<tr>
<th>Age Category</th>
<th>Class1</th>
<th>Class2</th>
<th>TOTAL</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-40</td>
<td>0,5%</td>
<td>1,8%</td>
<td>1,0%</td>
</tr>
<tr>
<td>41-50</td>
<td>1,0%</td>
<td>1,5%</td>
<td>0,8%</td>
</tr>
<tr>
<td>51-60</td>
<td>2,0%</td>
<td>2,9%</td>
<td>2,4%</td>
</tr>
<tr>
<td>61-65</td>
<td>3,0%</td>
<td>3,1%</td>
<td>3,0%</td>
</tr>
<tr>
<td>&gt; 65</td>
<td>3,0%</td>
<td>3,1%</td>
<td>3,0%</td>
</tr>
</tbody>
</table>

CLASS1 UNFIT (%) 
50,101 1,072 (2.1%) 
CLASS2 UNFIT (%) 
32,334 652 (2.0%) 
TOTAL UNFIT (%) 
82,435 1,724 (2.1%)
Analysis of the collected data

Percentage of total unfit per medical indication

<table>
<thead>
<tr>
<th>Medical Indication</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cardiovascular system</td>
<td>19%</td>
</tr>
<tr>
<td>Respiratory system</td>
<td>2%</td>
</tr>
<tr>
<td>Metabolic and endocrine</td>
<td>6%</td>
</tr>
<tr>
<td>Psychiatry</td>
<td>11%</td>
</tr>
<tr>
<td>Psychology</td>
<td>9%</td>
</tr>
<tr>
<td>Neurology</td>
<td>10%</td>
</tr>
</tbody>
</table>

Total group percentage: 329 (20%)
Analysis of the collected data

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Cardiovascular System</th>
<th>Respiratory System</th>
<th>Metabolic and Endocrine Systems</th>
<th>Psychiatry</th>
<th>Psychology</th>
<th>Neurology</th>
</tr>
</thead>
<tbody>
<tr>
<td>20-40</td>
<td>8%</td>
<td>3%</td>
<td>4%</td>
<td>15%</td>
<td>20%</td>
<td>7%</td>
</tr>
<tr>
<td>41-50</td>
<td>13%</td>
<td>1%</td>
<td>4%</td>
<td>14%</td>
<td>8%</td>
<td>11%</td>
</tr>
<tr>
<td>51-60</td>
<td>21%</td>
<td>2%</td>
<td>6%</td>
<td>10%</td>
<td>4%</td>
<td>10%</td>
</tr>
<tr>
<td>61-65</td>
<td>28%</td>
<td>2%</td>
<td>13%</td>
<td>8%</td>
<td>2%</td>
<td>11%</td>
</tr>
<tr>
<td>&gt;65</td>
<td>48%</td>
<td>0%</td>
<td>6%</td>
<td>2%</td>
<td>1%</td>
<td>13%</td>
</tr>
</tbody>
</table>

* = p-value <0.05
Incapacitation data from reported inflight incapacitation events

<table>
<thead>
<tr>
<th>Type of incapacitation</th>
<th>Number of occurrences</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gastro-intestinal</td>
<td>35</td>
</tr>
<tr>
<td>Myocardial</td>
<td>27</td>
</tr>
<tr>
<td>Syncope</td>
<td>5</td>
</tr>
<tr>
<td>Cerebrovascular</td>
<td>4</td>
</tr>
<tr>
<td>Cancer</td>
<td></td>
</tr>
<tr>
<td>Diabetes</td>
<td>2</td>
</tr>
<tr>
<td>Epileptic</td>
<td>1</td>
</tr>
<tr>
<td>Psychiatric</td>
<td>1</td>
</tr>
<tr>
<td>Other illnesses</td>
<td>16</td>
</tr>
<tr>
<td><strong>Unknown</strong></td>
<td><strong>164</strong></td>
</tr>
</tbody>
</table>

ECCAIRS data 1970-2017 Commercial air transport
The study recommendations

- Single pilot operations:
  - Extend age limit of CAT pilots flying single pilot operations from 60 years to the pilot’s 65th birthday.
  - Extension of the age limit for single pilot operations should be accompanied by additional measures to reduce the likelihood of pilot incapacitation to meet current operational accident acceptability values.

- Multi pilot operations:
  - Keep the age limit at 65 years as it is currently set by EASA (FCL.065; EASA, 2016).
  - Use the same additional measures as for single pilots to reduce the likelihood of pilot incapacitation.
The study recommendations, additional

Accident and Incident Reporting System

- ECCAIRS data:
  - Optimize registration of in-flight incapacitation occurrences:
    - data concerning age;
    - medical cause of incapacitation;
    - level of incapacitation.
Pilots’ Age Limits Workshop

18-19 March 2019
Workshop

- More than 60 participants
- More than 25 nationalities
- Organisations: European Commission, ICAO, IATA
- Stakeholders representing: pilot associations, medical societies, HEMS, operators in both fixed and rotary wing
- Non EASA states – China, Japan, US, NZ

- The workshop - collecting data from stakeholders
- Review the study recommendations
Points from the WS discussion

- The study only looked at sudden incapacitation. Subtle incapacitation was not considered;
- The study showed an increasing risk for pilots above the age of 60;
- All the neuropsychological abilities declined with age, with the exception of reasoning performances;
- In order to increase the age limits and maintain safety additional mitigating measures on medical and operational level need to be in place;
- Early cardiovascular risk factor management indifferent of the implementation of a change in age limits;
- The need for pilot health data for future evaluation of the age limits.
Outcome of study

The research study as well as the presentations delivered during the workshop are available on-line at the following links:

» https://www.easa.europa.eu/document-library/research-projects/easarepresea20171 and respectively

EASA is considering:

- an increase of the age limit for single pilot from the age of 60 to 65 with additional mitigating measures as recommended by the research, including the early risk factors management and comprehensive ophthalmological, neurological and ENT examinations.

- an increase of the pilot age for multi pilot CAT operations, however, additional risk-mitigation measures such as specific tests to support aero-medical decision on the applicant’s fitness on an individual basis must be imposed.

- a reduction of the maximum monthly/ yearly FTL to 80% of the maximum allowed for pilots over 60 performing single pilot ops and for pilots over 65 performing multi pilot ops.
Next steps

However, a final decision has not been made yet.
Next steps

- Development of options based on the feedback from the Workshop and MEG etc.;
- Working closely with ICAO and International Authorities on the future steps to coordinate actions;
- EASA high-level decision
  - Impact assessment will be consulted with EASA Advisory Bodies
  - Further feedback from the advisory bodies on the way forward
- Final high-level decision following consultation
- Regulatory activities in congruence with the decision
Thank you for your attention!

Questions

medical@easa.europa.eu

Your safety is our mission.