AEROMEDICAL EXAMINATION OF ROTARY-WING PILOTS
-A FORGOTTEN CLASS 1:
A RETROSPECTIVE ANALYSIS OF ACCUMULATING ANNUAL RECORDS OF 2013-2015

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ROTARY-WING AIRCRAFT (HELICOPTER) PILOTING

- Different from that of fixed-wing airplanes
- Higher noise from turbine engine and rotor blades and vibration
- Mostly Visual flight rule (VFR) and Low altitude flight
- Less common flying job and less concerned
METHODS

❖ Retrospective, consecutive cohort study
❖ Total 1692 cases from annual air medical examination records database of helicopter pilots between 2013-2015 in South Korea
❖ Categories of age and flight time distribution
❖ Microsoft Excel sheet, Pearson’s Chi-squared test and linear trend test, SPSS statistical software package (version 21.0)
RESULTS

❖ Total 1692, Fit 1489 (88%), Conditioned Fit 198 (11.7%), Unfit 5 (0.3%)
❖ Mean age 45.5 yrs, Mean total logged flight time - 3744 hours
❖ Mean age of conditioned fit / disqualification - 51.4 / 53.8 yrs
❖ Age of 55 or older and the flight time of 10,000 hours or more significantly predominated in the cases with conditioned fit
❖ Hearing loss as unacceptable pure tone audiometry level (32.7% of cases) - the most common reason for the initial disqualification
❖ Hypertension (19.3%) and postoperative state of eye correction surgery (14.4%)
❖ 5 cases of permanent disqualification: 1 hearing loss, 2 history of myocardial infarct, 1 cardiac arrhythmia and 1 postoperative state of cancer
AGE DISTRIBUTION

Age, year | Fit | Conditioned fit | Unfit
---|---|---|---
60 < | | | 90%
55-59 | | | 10%
50-54 | | | 100%
45-49 | | 90% | 10%
40-44 | | 90% | 10%
35-39 | | 90% | 10%
30-34 | | 90% | 10%
29 > | | 90% | 10%
Mean | | | 90%

Mean 29-34
TOTAL FLIGHT TIME DISTRIBUTION

- 0 hour
- 0 hour - 500
- 500 - 2000
- 2000 - 5000
- 5000 - 10000
- 10000 - 20000
- 20000 <

Total flight time, hour

- Fit
- Conditioned Fit
- Unfit
DISEASE CATEGORY

- Hearing loss: 32.7%
- Hypertension: 19.3%
- Diabetes: 11%
- Post Eye Correction Surgery: 14.4%
- Retinal Degeneration: 2%
- Post Cancer surgery: 5%
- Retinal Disease: 3%
- Cardiac stent: 5%
- Renal stone: 1%
CONCLUSION

For Helicopter pilots,

- Number of initial disqualification paralleled increasing seniority and flying experience
- Hearing loss as unacceptable pure tone audiometry level (32.7% of cases) was the most common
- Hypertension (19.3%) and postoperative state of eye correction surgery (14.4%) were the next common

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- Warrants more concern if age > 55 yrs or total logged flight time >10000 hrs
- Future concerns for Metabolic disease (Diabetes..) neoplastic disease and psychiatric disease