

GENERAL INFORMATION	
KEYWORDS	Category 1 aviation medical certificate, epilepsy, seizures
FILE NO.	O-4581-01
SECTOR (Marine or Aviation)	Aviation
SPECIFIC JOB	Commercial helicopter pilot
DIAGNOSIS (Primary, Secondary, etc.)	Epilepsy, seizure disorder
REVIEW	
DATE OF DETERMINATION	July 4, 2022
MEMBER	Dr. Thomas V. Davis
DETERMINATION	The member confirms the Minister of Transport's decision to refuse to renew the applicant's category 1 aviation medical certificate.
REASONS FOR THE DETERMINATION	
<p>Refusal to renew a category 1 aviation medical certificate (AMC) — The applicant is a commercial helicopter pilot with more than 20 years of flight experience. The applicant's first seizure occurred during sleep. She was seen by a neurologist who assessed her as having a "first unprovoked seizure;" however, the neurologist elected to not start the applicant on any antiepileptic medication. The applicant had a second seizure, again during sleep, and was seen by a second neurologist. In the neurologist's report, it was stated that the applicant has had two bilateral tonic-clonic seizures that were sleep-related, and after the second seizure, she was started on anti-seizure medication. It was also his opinion that, due to the sleep-related nature of the seizures, the applicant was fit to drive but did not give an opinion on her ability to safely operate an aircraft. The witness for the Minister of Transport (Minister), a Regional Aviation Medical Officer, testified that he sent the applicant's case to the Aviation Medical Review Board (AMRB) for their opinion on two occasions. The AMRB concluded that the applicant had a "Definite diagnosis of Nocturnal Seizure Disorder" and that she had a high risk of recurrence due to cortical dysplasia. The AMRB recommended that the applicant be found permanently unfit. <i>Canadian Aviation Regulations (CARs)</i> Standard 424.17(4), Physical and mental requirements table, paragraph 1.4(b), states that an applicant shall have no history of a convulsive disorder and supports the Minister's decision. The Transport Canada (TC) publication TP 13312: <i>Handbook for Civil Aviation Medical Examiners</i> states that "individuals who have a second seizure should be considered to have epilepsy" and that "[i]ndividuals with epilepsy are unfit." This guidance also supports the Minister's decision. Section 10.2.35 of the International Civil Aviation Organization <i>Manual of Civil Aviation Medicine</i> (ICAO manual) states that the "existence of or history of a seizure disorder is disqualifying for all classes of medical certification." The Minister's decision is again supported by this binding international guidance. The Minister also refused to renew the applicant's AMC based on her use of medication to prevent seizures. TC's position regarding medication to control epilepsy was that the use of any anti-seizure medication was disqualifying not only because of possible side effects but, more importantly in this case, because the amount/levels of medication in the body may vary sufficiently to allow seizures to occur. The applicant testified that since being on medication she is living an active, normal life with no seizures, no medication side effects, and provided evidence of having no seizures since starting the medication. The member finds that the Minister's refusal to renew the applicant's AMC based on medication use is not consistent with <i>CARs</i> Standard 424.17(4), paragraphs 1.1(d), 1.4(b), 3.1(d), 3.4(b), 4.1 and 4.3(a). There is no dispute that the applicant is on medication to control her seizures; however, the name, dosage, and "any effect of the medication" that could entail a degree of functional incapacity was not put into evidence. On the contrary, there was undisputed evidence that the applicant does not have any side effects from the medication she is taking. The member finds that the Minister's decision to refuse to</p>	

renew the applicant's AMC based on her use of medication to prevent seizures is not proven on a balance of probabilities. However, the Minister's decision not to renew the applicant's AMC is found reasonable based on the previous grounds of the diagnosis of epilepsy. The applicant made the argument that flexibility should be applied in her case based on being seizure-free for more than two years on medication and that the two seizures were associated with sleep. She asked that flexibility be applied to allow her to fly with the restriction "with or as co-pilot." The applicant's husband testified that, in addition to the stability on medication and the sleep-related nature of the seizures, the fact that the applicant operates in a two-crew environment and that all crew members have incapacitation training would also mitigate the risk. There is some validity to this opinion, but it fails to consider not only the sudden onset of a seizure, which could occur in a critical phase of flight, but also does not account for uncontrolled movements of a pilot having a tonic-clonic seizure and the associated risk of these movements interfering with control. The TC Staff Instruction *Aeromedical Risk Assessment and Risk Management* gives guidance on applying flexibility. Appendix A – Three-Dimensional Risk Matrix in this document is a tool that uses group, severity, and likelihood of an event to determine if flexibility can be applied. In the applicant's case, she comes under Group 1 (commercial pilot). With respect to severity, a seizure is a Class 4 Medical Event in that it has the following characteristics: 1) likely to result in an aviation safety critical event, 2) total acute incapacitation and 3) requires advanced emergency medical attention. In terms of likelihood, the applicant's likelihood of having a seizure, even on medication, is classed as "D. Likely", which is greater than 2% per year. Thus, using this assessment matrix, the applicant's risk assessment is "4D" which is high risk. A "4D" assessment using this tool means there is no option for flexibility and an unfit assessment is indicated. The Minister's decision to refuse to renew a Category 1 medical certificate, and its determination that the applicant is medically unfit to exercise the privileges of any type of flight crew licence or permit, are based on a thorough review of the circumstances and are consistent with the CARs standards and ICAO guidance.

APPEAL

DATE OF DECISION	
MEMBERS	
DECISION	
REASONS FOR THE DECISION	
OTHER/COMMENTS	