



1. 제 목 : **How Helicopter Experience can inform  
the Design of Future Rotorcraft**

2. 연 사 : **Dr. Richard Brown**

3. 일 시 : **2024년 02월 27일 (화) 15:00 – 16:30**

4. 장 소 : **서울대학교 301동 1313호**

5. 내 용 :

Throughout the history of helicopter development, a major source of delay and expense has been the need to rectify the consequences of adverse aerodynamic interactions between the various components of the vehicle itself, as well as between the vehicle and its surroundings. A particular characteristic of many of these interactions is that they were entirely unforeseen during the preliminary design of the vehicle and only became apparent once the aircraft began its flight trials. Many of the aerodynamic issues that the new crop of eVTOL aircraft will face during their introduction into service will be very similar to those that have already been encountered by conventional helicopters. The inherent geometric complexity of these new vehicles, especially when compared to conventional helicopters, means though that care needs to be taken when extrapolating from helicopter experience in order to understand the aerodynamic behaviour of eVTOL aircraft. Dr. Brown will describe in detail how the body of historical knowledge needs to be augmented by new theoretical insights, supported by appropriate numerical analysis and experimental data, to yield the fundamental aerodynamic understanding that is required to ensure the safety of eVTOL aircraft. He will pay particular attention to the issues that are likely to arise if and when eVTOL aircraft start to operate from vertiports that are located in densely-populated urban environments.

6. 약 력 :

Dr. Brown is well-known internationally for his broad range of contributions to our understanding of helicopter and rotor aerodynamics, and how this impacts on vehicle safety. His principal interest is in understanding how the wakes that are produced by the rotors interact with the rest of the airframe to influence the vehicle's dynamic behavior, vibrations and noise. He is the originator of the Vorticity Transport Model, a numerical analysis that has been used extensively to examine the physics of phenomena as diverse as brownout and ground interaction, to explore how the wakes that are generated by large fixed-wing aircraft might interfere with helicopter operations near airports, and to understand the fundamental wake instabilities that lead to the Vortex Ring State in descending flight. He is the author of over a hundred technical papers, and is a Fellow of both the Royal Aeronautical Society and the Institution of Mechanical Engineers. In 2023 Dr. Brown was awarded the Bronze Medal of the Royal Aeronautical Society for his contributions over the last decades to our understanding of helicopter aerodynamics, and earlier this year he was presented with the award for Extraordinary Work in Vertical Flight from the Vertical Flight Society (UK) in recognition of his pioneering work on the Vortex Ring State.

※ 연사의 사정에 의하여 일정 및 강연제목이 변경될 수 있습니다.

7. 문 의 : **항공우주공학과 이관중 교수(☎880-4151)**

