



Canadian Aeronautics and Space Institute Institut aéronautique et spatial du Canada

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***** FOR IMMEDIATE RELEASE *****

December 16, 2020

CANADIAN AERONAUTICS AND SPACE INSTITUTE ANNOUNCES 2020 SENIOR AWARD HONOUREES

Dr. Jacques Giroux, president of the Canadian Aeronautics and Space Institute for 2019-20, has announced the honourees of the 2020 CASI Senior Awards.

The Awards and the recipients are:

1. The Trans-Canada (McKee) Trophy
Canadian Forces 415 Squadron
2. CASI McCurdy Award
Ms. Kahina Oudjehani, Bombardier Aerospace
3. CASI C.D. Howe Award
Mr. James Quick, Aerospace Industries Association of Canada
4. CASI Alouette Award
Professor James R. Drummond, University of Toronto

The criteria for each of the Senior Awards discerned in 2020 and summaries of the accomplishments of the honourees are found below.

Presentation of the Awards will be made via internet events due to Covid-19 restrictions on in-person gatherings.

For more information, please contact the headquarters of the Canadian Aeronautics and Space Institute at (613) 591-8787.

... details on the following pages ...



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The Trans-Canada (McKee) Trophy

The Trans-Canada Trophy, generally known as the McKee Trophy, is the oldest aviation award in Canada. It was established in 1927 by Captain J. Dalzell McKee. In 1926 McKee, of Pittsburgh, Penn. accompanied by Squadron Leader Earl Godfrey of the RCAF, flew from Montreal to Vancouver in a Douglas MO-2B seaplane. McKee was so impressed by the services provided by the RCAF and the Ontario Provincial Air Service that he established an endowment by means of which the greatly coveted McKee Trophy is awarded to the Canadian whose achievements were most outstanding in promoting aviation in Canada.

The Trophy was deeded to the Crown in the person of the Minister of National Defence - in the days when the Department of National Defence controlled all flying, military and civil. It was retired in 1964 and reinstated in 1966, and in 1971 administration of the Trophy was transferred to the Canadian Aeronautics and Space Institute. From 1964 until its move to Canada's Aviation Hall of Fame in 1983, the Trophy was on display at the National Museum of Science and Technology in Ottawa.

The Trophy is awarded for outstanding achievement in the field of air operations. The achievement for which the Trophy is awarded may be a single brilliant exploit within the past year, or a sustained high-level performance in recent years; pioneering of new areas of air operations and advancement of the use of aviation shall receive consideration over achievements serving no useful end. Qualifications as aircrew shall be a prior claim to consideration. The recipient shall have been a Canadian citizen at the time of the achievement.

Canadian Forces 415 Squadron

The Canadian Forces 415 Squadron has led the way in the implementation of cutting-edge technology to enhance air power during combat operations. As the Canadian Forces contribution to operation OP IMPACT, the Canadian Forces contribution in the fight against ISIS, the 415 Squadron aircrew and maintainers worked tirelessly to operationalize a beyond line-of-sight capability (iBLOS) on the CP140. Their efforts resulted in a capability which enables the CP140 Aurora to stream real-time full-motion video to remote destinations anywhere in the world, thus increasing command situational awareness, and improving the overall intelligence, surveillance, and reconnaissance (ISR) picture.



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The CF 415 Squadron has provided ongoing support to ensure the iBLOS capability continues to be optimized. 415 Squadron set the stage for the integration of iBLOS into operations; 405 and 407 Squadron aircrew and maintainers now seamlessly employ iBLOS during operational missions, enhancing the ISR capability of the CP140 for maximum combat effectiveness.

In today's air combat environment, integration and dissemination of information and intelligence products are key enablers for effective kinetic actions. 415 Squadron has exemplified the professionalism, teamwork, and leadership required to enhance airborne ISR operations in a combat environment with their implementation of the IBLOS system.

The CASI McCurdy Award

The McCurdy Award was introduced in 1954 by the Institute of Aircraft Technicians, one of the aeronautical groups that amalgamated to form the Canadian Aeronautics and Space Institute. The award commemorates the many engineering and other contributions made by John A.D. McCurdy during the first stages of the development of an aviation industry in North America.

The award is presented for outstanding achievement in the science and creative aspects of engineering relating to aeronautics and space research. The achievement must constitute the most significant contribution made in recent years toward the advancement of science and technology in aeronautics and space exploration, and must be worthy of special recognition. The contribution may be administrative in nature, but it must be directly related to science and technology, and have been sustained over a number of years at an imaginative and creative level above that which would normally be considered a competent and successful performance. The recipient shall have been a Canadian citizen at the time the contribution was made.

Ms. Kahina Oudjehani

Kahina Oudjehani has been the head of EcoDesign and Environmental Affairs at Bombardier Aerospace for several years. Kahina and her team published the first Environmental Product Declaration (EPD®) in the aviation industry for the Bombardier CSERIES CS-100 aircraft, now known as the Airbus A220-100. Her team went on to obtain a second EPD® for the CSERIES CS-300 aircraft, now known as the Airbus A220-300. They also achieved the same designation for the Global 7500 in 2020, the first ever for a jet in the business aviation segment.



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The EPD®, which is based on verified Life Cycle Analysis (LCA) data, discloses information about the life cycle environmental impact of products and thus provides the basis for a fair comparison of products and services vis-à-vis their environmental performance. It brings to the aerospace industry an unprecedented level of transparency on the environmental impact of airplanes.

The ISO 14025 steps required to produce an EPD® include:

- Development of the Product Category Rule (PCR) for the class of vehicles concerned. The PCR details all rules that must be followed by an airframe manufacturer to issue an EPD®; the applicable category of products: single aisle or turboprop; the scope of the Life Cycle Analysis (LCA) study required; and the information to be included in an EPD.
- Performance of a an LCA of the aircraft according to the PCR and ISO 14040 and ISO 14044 standards. The LCA is a proprietary analysis that feeds the EPD®. It studies the environmental impacts of all aspects of the product from design and manufacturing, raw material extraction, energy used, water used, waste production, aircraft operation, all the way to the end-of-life and disposal of the vehicle.
- Compilation of the results in an Environmental Product Declaration format.
- Third party verification of both the LCA and the EPD® by a certified independent auditor.
- Registration and publication of the approved documentation by the EPD® program operator.

Performing a Life Cycle Analysis for an aircraft requires getting and recording engineering information on all components of the aircraft, including all components supplied by third parties on the aircraft and identifying their environmental impact. The organization of the logistics to collect this information for a complex product such as an aircraft and consolidate this information in a simple communicable statement is a considerable achievement.

Kahina Oudjehani displayed extraordinary competence, perseverance and much-needed leadership in pursuing this objective. Environmental Product Declarations are sure to become the standard way of communicating new aircraft environmental impacts.



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The CASI C.D. Howe Award

In 1966 CASI introduced the C.D. Howe Award in honour of The Right Honourable C.D. Howe. The Award is presented for achievements in the fields of planning and policy making, and overall leadership in Canadian aeronautics and space activities.

The achievement for which the award is given shall be of permanent significance, and its benefits to aeronautics and space activities in Canada shall have been unquestionably established. To this end, the recipient shall have sustained an outstanding personal performance in these fields for at least ten years and it shall be reasonably certain that the merits of his achievements will be unassailable in the light of history. The recipient shall have been a Canadian citizen and resident during the time the contribution was made.

Mr. James Quick

In his role as Chief Executive Officer of the Aerospace Industries Association of Canada (AIAC) and his leadership of the association's advocacy initiatives, Jim Quick has made a significant and permanent positive contribution to Canadian Government policies related to the aerospace industry in Canada, and to the creation of programs associated with these policies of substantial benefit to the industry. He has been instrumental in the establishment of a new and more productive relationship between Government and aerospace industry leaders in Canada.

In 2012, he led industry participation in the *Canada Transportation Act (CTA) Review Report* chaired by David Emerson (the 'Emerson Report') on the use of public policies and programs to strengthen the competitiveness of Canada's aerospace industry.

The *Review* was launched by the Government in 2012 with a mandate to conduct a comprehensive review of policies and programs related to Canada's aerospace industry and to recommend a federal policy framework to maximize the competitiveness this industry and its benefits to Canadians. The Honourable David Emerson was appointed as the Review Head and he was joined by a 3-person advisory committee, which included Jim Quick of the AIAC. In an intense 11-month effort, Jim brought government officials together with representatives of industry, universities, colleges and research institutes through a number of industry-led workings groups. The *Review* Head and Advisory Council members also conducted a series of roundtables, meetings and site visits across Canada and internationally to assess the state of the Canadian industry relative to other leading aerospace nations, the effectiveness of our Government policies and programs,



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best practices in other countries with successful aviation and space sectors, and the emerging competitive challenges facing the aerospace industry in Canada.

The *Review* concluded in November 2012 and provided 25 specific recommendations related to public policy and programs for the aviation and space sectors of Canada's aerospace industry, serving as a roadmap for Government policy development and program creation.

Since 2012, under Jim's leadership the AIAC, its members and other key stakeholders within the Canada's aerospace community have:

- Established a list of priority technologies to guide aerospace-related policies and programs,
- Assisted the Government in the creation of a program to support large-scale technology demonstrations,
- Established an industry-led, co-funded, Canada-wide collaborative research organization, the Consortium for Aerospace Research and Innovation in Canada (CARIC),
- Contributed to the definition of an improved Industrial Technology Benefits (ITB) program for Government procurement of aircraft and aerospace related equipment, and
- Assisted the Government in the establishment of a Canadian Space Advisory Board.

Under Jim's guidance the working committees of the Association, which are organized around the key policy/program development needs identified in the *Aerospace Review*, continue to work collaboratively with the Government to progress several other recommendations of the *Review*, including the development of policies and programs to support, small businesses, technology development and innovation, civil aviation safety, security and environmental regulations, international market access and the space sector in Canada.

Through his knowledge, efforts and leadership, Jim Quick has established a strong and productive partnership between the AIAC and its members, key Government decision-makers and their senior department officials, and other important stakeholders within Canada's aerospace community. He has used this partnership, in turn, to make a significant and lasting impact on public policy and programs of benefit to aerospace industry in Canada.



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The CASI Alouette Award

CASI created the Alouette Award to recognize an outstanding contribution to advancement in Canadian space technology, application, science or engineering. The CASI Alouette Award may be presented to an individual, to a group, an organization or group of organizations, as appropriate to the nature of the contribution.

The terms are:

- a) The trophy shall be awarded annually for an outstanding achievement in the field of astronautics as defined by the CASI By-Laws.
- b) The achievement may be either a single outstanding contribution or, in the case of an individual nominee, a sustained high level of performance resulting in several advances in space.
- c) The contribution on which the award is based must be recognized as a Canadian-led space endeavour or as a significant Canadian contribution to an international program.
- d) Preference shall be given to contributions that lead to new benefits for mankind.
- e) The recipient shall have been a Canadian citizen at the time the contribution was made.

Professor James R. Drummond

Jim Drummond has been the Principal Investigator for a spectacularly successful Canadian satellite instrument for three decades, and also has made many invaluable contributions to Canada's space program over the course of his long and distinguished career. These contributions, combined with his impassioned and tireless leadership in the satellite community, both nationally and internationally, have provided a body of research and accomplishments that make him an outstanding recipient of this prestigious award.

Jim is best-known in the space community for his leadership of the Canadian-led space instrument MOPITT (Measurement Of Pollution In The Troposphere) from conception to launch to celebrating its 20th anniversary on orbit. MOPITT was launched on NASA's Terra satellite on December 18, 1999 and since then has made more than 1.3 billion measurements, resulting in over 470 publications. MOPITT measures carbon monoxide, and is notable for producing the first continuous global tropospheric chemical measurements from satellite and for mapping the global transport of pollution. MOPITT is a Canadian instrument; conceived, designed and constructed in Canada.



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Jim began his scientific career at the University of Oxford where he completed his D.Phil. and a Post-Doctoral Fellowship, joining the Physics Department at the University of Toronto in 1979. Jim was the first person to thoroughly develop the concept of the length-modulated radiometer, recognizing the advantages that it offered over pressure-modulated radiometers. Jim and his students developed both balloon-borne and ground-based instruments based on these principles. In the late 1980s, he conceived the original concept for a nadir-viewing satellite instrument capable of measuring tropospheric constituents, including the acquisition of some vertical information using a combination of pressure-modulated cells to probe the upper troposphere and length-modulated cells for the lower troposphere.

Jim's dedication culminated in the successful launch of the MOPITT instrument in 1999. Twenty years post-launch, Jim continues to be the Principal Investigator for MOPITT, leading an international team of Co-Investigators, including colleagues from the National Center for Atmospheric Research in Colorado, which is responsible for the retrievals.

MOPITT is the first satellite instrument to make long-term global measurements of tropospheric pollutants, focusing on carbon monoxide. It is an eight-channel scanning radiometer that measures upwelling thermal emission and reflected solar radiation from the Earth's surface and atmosphere. As PI, Jim maintained an active participation in every aspect of the MOPITT instrument design, testing, and characterization, taking a hands-on approach. As one colleague remarked at an international meeting some years ago, after hearing Jim give a talk on the MOPITT instrument, "it's impressive how well he knows every detail of that instrument inside-out".

Jim and the Terra satellite team received the 2019 William T. Pecora Team Award from NASA and the U.S. Department of the Interior. The citation notes that "Terra is arguably one of the most successful Earth-sensing satellites ever deployed." The citation also says that MOPITT was the first instrument "designed to observe the distribution and transport of tropospheric carbon monoxide and, along with other sensors, has helped advance our understanding of air quality and biomass burning emissions."

Jim is a highly active contributor in the national and international scientific community including service on multiple high-level committees. Of particular relevance to space, he is currently a member of the federal government's Space Advisory Board and a Member of CSA's Atmospheric Science Advisory Committee. He was the founding President of the Canadian Network of Northern Research Operators (CNNRO), which was



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established to advance the collective interests of Canada's northern research infrastructure operators. From 2014 to 2018, he was the Chair of the Forum of Arctic Research Operators (FARO), which has 20 member nations and aims to facilitate and optimise logistics and operational support for scientific research in the Arctic. Other international roles include Member of the Steering Committee for Network for the Detection of Atmospheric Composition Change, Member and Secretary of the International Commission on Atmospheric Chemistry and Global Pollution, and Canadian Representative to the International Association for Meteorology and Atmospheric Science.

MOPITT measurements continue to be widely used around the world, meeting a great desire for global tropospheric measurements. MOPITT produced the first long-term global maps of carbon monoxide, including movies that clearly show the transport of the products of pollution and biomass burning plumes around the world. Without Jim's dedication, commitment, and outstanding grasp of experimental issues, MOPITT would not be the success that it is.

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