

Ohio Aerospace and Aviation Technology Committee (OAATC)



**Annual Report
2018**

Letter from the Chairman

I am pleased to present the fourth annual report for the Ohio Aerospace and Aviation Technology Committee (OAATC).

The OAATC, along with the Ohio Aerospace and Aviation Council (OAAC) and JobsOhio has validated Ohio's Aerospace industry as one of Ohio's largest – directly employing over 100,000 full-time workers. Ohio has no other industrial sector in which its federal facilities, industry, and academic institutions play as dominant a role in U.S. industrial production, Export, Research & Development (R&D), and policy leadership as Ohio's Aerospace Industry and as demonstrated by the following:

- Ohio is a leader in Aerospace Manufacturing Attractiveness
- Ohio is the undisputed leader in US Military Aviation Research & Development
- Ohio is the undisputed leading supplier to the world's major Aerospace, Aviation, and Defense OEMs (ex. Boeing and Airbus)
- Ohio offers unique test facilities, capability and world-class R&D in emerging aerospace innovation areas: Simulated Space Environments, Urban Air Mobility and Unmanned Traffic Management, Hypersonics, Hyperloop-mobility, Aeronautics, Materials, Sensors, Aerospace Power and Propulsion, Aerospace Medicine and Human Effectiveness, Adv. Manufacturing, and Additive Manufacturing

The Committee's goal in 2018 was to build on its successes in 2017 and earlier, when we established the concept of One Ohio and the following joint Vision and Mission Statements with the OAAC:

Vision: Ohio – America's Leader in Global Aviation and Aerospace

Mission: Create opportunities in Ohio for economic growth, jobs, education, and to shape and grow the future of the Aviation and Aerospace Industries

The groups share three subcommittees: Economic Development, Education & Workforce, and Advocacy which were active throughout 2017 and 2018. One achievement in the area of education is the relationship with COSI that was formed in 2018 after a visit by NASA Director Jim Bridenstine. In particular, the OAATC and the OAAC will be working with COSI in the area of STEM education and workforce development and supporting the various NASA anniversary events planned within the State.

One key initiative was to meet with both major gubernatorial campaigns. We met with each separately to discuss the OAATC, the OAAC and OAI and how the groups interact and work to drive an aerospace agenda for Ohio. The purpose was to establish relationships early, so in 2019 the new Governor can be prepared to advance aerospace initiatives right away. Of particular interest to each were the areas of economic opportunity, workforce development,

and technical innovation. We provided our agenda and highlighted a number of priorities and focused objectives for 2019, these are provided as an appendix to this annual report.

Our off-site meeting in 2018 was to the Springfield Air National Guard Station in Springfield. Topics included the mission of the station, FAA/DOT UAS IPP, the proposition of a Fly Away Tax in Ohio, Ohio's Air Camp program and an update on OAAC/OAATC including next steps.

In addition, to get the Committee in place for 2019 earlier than in 2017, we have worked to ease the reappointment process for OAATC members by starting earlier. It is my goal to get the reappointments going in January 2019, even though the senate and house members may not be appointed yet.

The committee saw some legislative successes in the passage of Senate Bill 320 out of the Senate, and House Bill 716 out of the House. The companion bills were drafted and introduced in October of this year at the request of Air Force Secretary Heather Wilson, who challenged Ohio to make it easier for military spouses holding licenses to find work while their spouses were stationed here. Though unable to have one of these signed by the Governor, we are confident these will be reintroduced in 2019 and reach the Governor's desk.

It is imperative that the government, industry, academia and the military in Ohio continue to unite Ohio under an aligned aerospace theme, collective agenda and strategy to seize the opportunities in Unmanned Aerial Systems (UAS); Autonomy; NextGen national airspace traffic management technologies; UAM; Maintenance, Repair and Overhaul (MRO) and STEM initiatives.

It has been my honor to Chair the OAATC these last two years. Though leaving the General Assembly, I know the OAATC will continue to thrive and provide statewide leadership in the Aerospace and Aviation field.

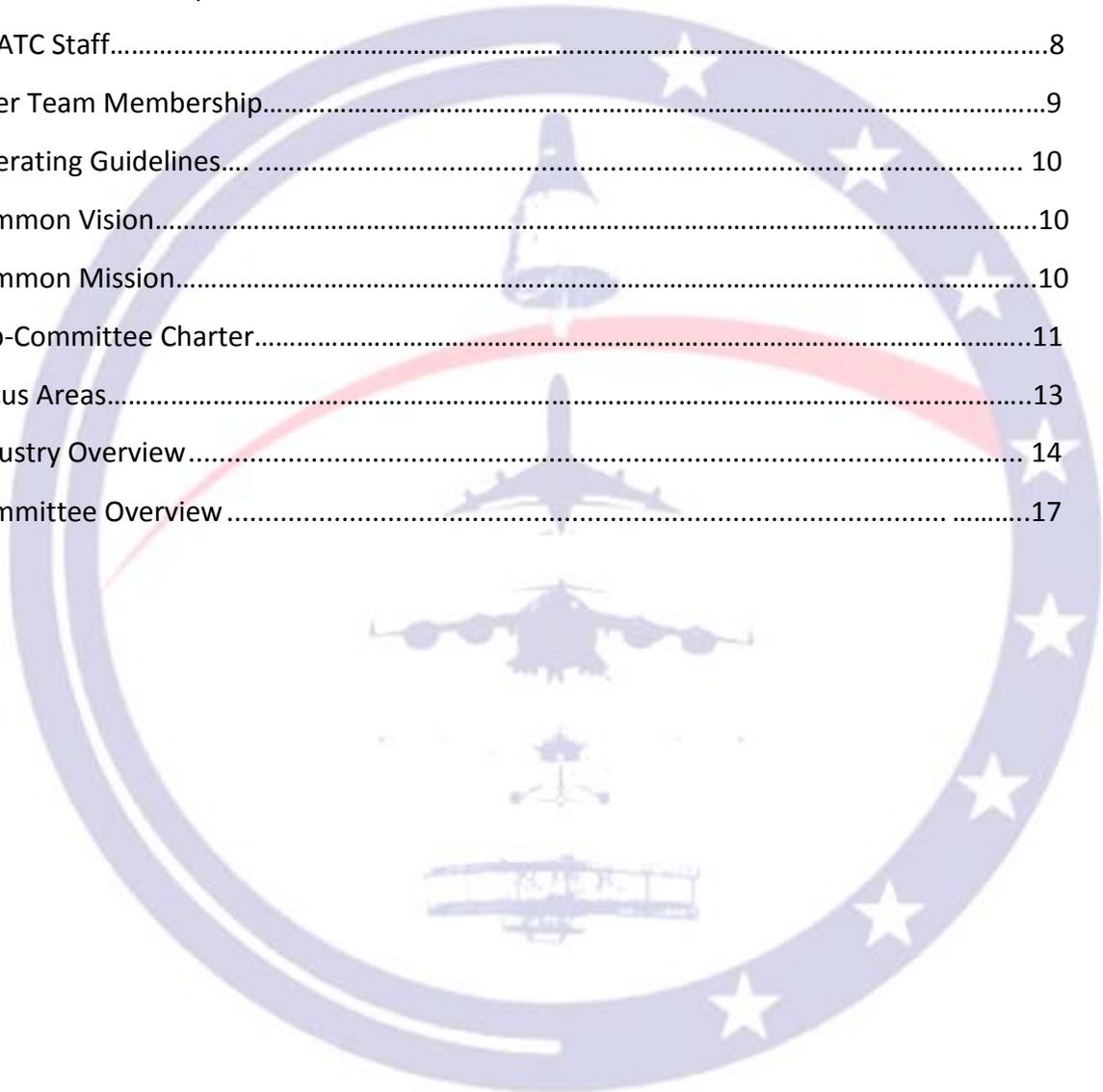
Regards,

A handwritten signature in black ink that reads "Bill Beagle". The signature is written in a cursive, flowing style.

Senator Bill Beagle
Chairman, Ohio Aerospace and Aviation Technology Committee
Ohio's 5th Senate District

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Committee History

130th General Assembly

June 17, 2014 – Governor John Kasich signs into law House Bill 292 to create the Ohio Aviation and Aerospace Technology Committee (OAATC).

September 24, 2014 – Speaker of the House of Representatives, William G. Batchelder and Senate President Keith Faber appoint the six legislative members to the OAATC, identifying Representative Rick Perales as Chairman.

October 31, 2014 – Deadline for applications for the fourteen public members.

December 17, 2014 – Announcement of the public appointees to the OAATC.

131st General Assembly

February 18, 2015 – OAATC meets for the first time as a full committee, having one vacancy.

April 22, 2015 – OAATC meets and adopts “Operating Guidelines” and “Focus Areas.”

May 5, 2015 – OAATC creates informal workgroups to study each of the focus areas.

May 20, 2015 – OAATC meets and hears priority reports from each workgroup leaders.

October 6, 2015 – OAATC Chairman Rick Perales and members of the OAATC host Ohio’s annual Aerospace Day in order to highlight Ohio’s aerospace industry and its contributions to the State of Ohio. The committee also held a formal meeting, luncheon, and panel discussion in the Ohio Statehouse.

November 18, 2015 – OAATC meets and is updated on recommendations from workgroup leaders. The University of Dayton Research Institute and Bob Doyle from the Triumph of Flight project testify before the committee.

December 9, 2015 – OAATC meets and invites partner agencies such as the Ohio Aerospace & Aviation Council (OAAC), Ohio Aerospace Institute (OAI), and the NASA Glenn Research Center to provide updates. Relevant legislation is also discussed, as well as workgroup updates.

February 24, 2016 – OAATC meets to discuss the committee’s accomplishments in 2015 and to outline priorities for 2016. The committee continues to pursue the workgroup’s recommendations as well as incorporating partner updates into the meeting.

April 6, 2016 – OAATC conducts an informal committee meeting for workgroup leaders to prioritize recommendations for the rest of the year.

May 11, 2016 – OAATC meets to hear updates from partners such as the Ohio Federal Military Jobs Commission and the National Aviation Heritage Area. Relevant legislation is also discussed, and workgroup updates are given.

June 23, 2016 – OAATC meets at NASA Glenn Research Center for a field hearing. Northeast Ohio aerospace companies testify on the importance of the region in the aerospace industry. Members of the committee tour the NASA Glenn facilities.

September 21, 2016 – OAATC meets and invites the Dayton Development Coalition to brief the committee on the Ohio Defense Forum, as well as COPP Integrated Systems to provide an overview of their Footprint Technology. OAATC committee member, Jeff Rolf leads a discussion regarding Aerospace Industry alignment.

November 30, 2016 – OAATC Chairman Rick Perlaes and members of the OAATC host Ohio's annual Aerospace Day in order to highlight Ohio's aerospace industry and its contributions to the State of Ohio. The committee also held a formal meeting, luncheon, and panel discussion on the Ohio Statehouse.

December 31, 2016 – The initial term of all members ends. Chairmanship of the OAATC alternates from the Ohio House of Representatives to the Ohio Senate in accordance with the Ohio Revised Code (ORC) 122.98.

132nd General Assembly

January 24, 2017 – Governor John Kasich appoints John Leland to the OAATC.

February 9, 2017 – Senate President Larry Obhof appoints the three Senate members to the OAATC, identifying Senator Bill Beagle as Chairman.

April 17, 2017 – Speaker of the House of Representatives Clifford A. Rosenberger appoints the three House of Representatives members to the OAATC.

April 28, 2017 – Announcement that applications are being accepted by Chairman Bill Beagle's Office for the 14 public member positions on the OAATC.

May 12, 2017 – Deadline for applications for the fourteen public members of the OAATC.

June 6, 2017 – Legislative members under the leadership of Chairman Bill Beagle meet and adopt Senate Committee Rules. The committee also announces the fourteen public appointees to the OAATC.

June 16, 2017 – OAATC Secretary Sean O'Brien hosts Chairman Beagle and members of the OAATC as they meet for the first time as a full committee during the 132nd General Assembly at the Youngstown Air Reserve Station in Vienna, Ohio for a field hearing. Members are briefed by

Colonel Dan Sarachene, Base Commander on the Mission of the 910th Airlift Wing; as well as an update on the status of the Ohio National Guard by Major General Mark Bartman, Ohio Adjutant General, Ohio National Guard.

August 17, 2017 – At the discretion of OAATC Chairman Bill Beagle and OAAC Chairman Carlos Grodsinsky, a “Tiger Team” of the OAATC and OAAC is formed and holds an informal meeting to outline priorities and structure of the OAATC for the 132nd General Assembly.

September 13, 2017 – The “Tiger Team” of the OAATC and OAAC have an informal meeting to construct an illustrative framework that would be presented to all members of the OAATC at the November 7, 2017 formal meeting.

September 20, 2017 – The Ohio Senate passed Senate Resolution 175, expressing support for the Hyperloop Transportation Initiative. The resolution passed with 32 “Yeas” and zero “Nays.”

November 7, 2017 – OAATC meets and adopts a Common Vision and Mission. The committee also defines its new rallying opportunities and creates three new sub-committees. Chairpersons and members of each sub-committee are identified and are tasked to develop specific goals and objectives to implement strategies and execute the mission of the OAATC.

November 28, 2017 – OAATC Chairman Bill Beagle and members of the OAATC host Ohio’s annual Aerospace Day, a strategic assembly of government, industry, and academic leaders to discuss the future of the aerospace and aviation industry in Ohio. The committee hosted exhibitors, held two panels, a luncheon, and a networking reception.

December 5, 2017 - The Ohio House of Representatives passed House Resolution 236, expressing support for the Hyperloop Transportation Initiative. The resolution passed with 90 “Yeas” and three “Nays.”

December 8, 2017 – Joint meeting of the OAATC and OAAC sub-committees and Project Opportunity Team to discuss project identification, evaluation and execution processes to use so both organizations are working together with common goals, mission and tasks.

December 27, 2018 – The 2018 OAATC Annual Report is submitted to the Office of Governor John Kasich, the Office of Speaker of the House of Representatives Clifford A. Rosenberger, and the Office of President of the Senate Larry Obhof pursuant to the Ohio Revised Code (ORC) 122.98.

February 9, 2018 – The OAATC launches its Twitter account to better connect with constituents, industry, academia, and military on current events related to aerospace and aviation technology.

February 12, 2018 – OAATC Chairman Bill Beagle submits a letter of support on behalf of the OAATC addressed to Andrea LaMendola, Chief Global Operations Officer, Hyperloop Transportation Technologies that reaffirms Ohio’s commitment to Hyperloop technology and

willingness to support Hyperloop research and development with the state's corporate and institutional resources.

April 27, 2018 – OAATC Chairman Bill Beagle and Adam Holmes, OAATC Project Opportunity Team Leader attend the OAAC quarterly meeting providing updates to members of the OAAC on the progress of the OAATC and subcommittees.

May 30 – 31, 2018 – The One Ohio Series: Defense Summit hosted by the Ohio Aerospace Institute (OAI) in Sandusky, Ohio. OAATC Member and Project Opportunity Team, Leader, Adam Holmes moderates the *Department of Defense (DoD) Strategic Direction & Needs (General Session)* panel discussion. OAATC Chairman Bill Beagle moderates the *Ohio Federal Research Network* panel discussion. OAATC Member and Economic Development Sub-committee Chairman, Jeff Rolf moderates the *Importance of DoD Work in Ohio Districts* panel discussion as Chairman Bill Beagle represents the OAATC as a panelist.

July 9, 2018 – Upon retirement, OAATC member, Tiger Team member, and Economic Development Sub-committee Chairman, Jeff Rolf resigns from the committee.

July 20, 2018 – OAATC Chairman Bill Beagle and Adam Holmes, OAATC Project Opportunity Team Leader attend the OAAC quarterly meeting providing updates to members of the OAAC on the progress of the OAATC and subcommittees.

July 27, 2018 – OAATC holds a field meeting at the Springfield Air National Guard Base in Springfield, Ohio. Members are brief by Colonel Gregg Hesterman, Base Commander on the Mission of the 178th Wing.

August 30, 2018 – OAATC Chairman Bill Beagle along with Ohio Senate OAATC staff tour the NASA Glenn Plum Brook Station in Sandusky, Ohio.

September 7, 2018 – OAATC Chairman Bill Beagle, OAATC Project Opportunity Team Leader Adam Holmes, OAATC Advocacy Sub-committee Chairman Bob Tanner, OAATC General Member and OAAC Chairman Carlos Grodsinsky, OAAC Project Opportunity Team Leader Greg Morris, and Ohio Senate OAATC staff meet with the Republican Gubernatorial Campaign of DeWine-Husted to discuss the sustainment and longevity of the OAATC/OAAC Vision and Mission.

September 18, 2018 – OAATC Chairman Bill Beagle and OAAC Chairman and OAATC General Member Carlos Grodsinsky, accompanied by other aerospace and aviation leaders from across Ohio, including members of the OAAC, as well as officials from JobsOhio meet NASA Administrator Jim Bridenstine at COSI in Columbus, Ohio. A discussion on the future of NASA, the aerospace and aviation industry in Ohio, and NASA's vision for the future and Ohio's critical role in that vision is held.

September 18, 2018 - OAATC Chairman Bill Beagle, OAATC Project Opportunity Team Leader Adam Holmes, and OAATC staff attends General Aviation Advocacy Day at the Ohio Statehouse. AOPA, OAA, and ODOT brief the audience during a luncheon on general aviation in the State of Ohio.

October 12, 2018 - Adam Holmes, OAATC Project Opportunity Team Leader briefed the OAAC, chaired by Carlos Grodzinsky, OAATC Leadership Member on the projects, structure, and status of the OAATC.

October 16, 2018 - OAATC Chairman Bill Beagle, OAATC Project Opportunity Team Leader Adam Holmes, OAATC Advocacy Sub-committee Chairman Bob Tanner, OAATC General Member and OAAC Chairman Carlos Grodzinsky, OAAC Project Opportunity Team Leader Greg Morris, OAATC Secretary, Senator Sean O'Brien and Ohio Senate OAATC staff meet with the Democratic Gubernatorial Campaign of Cordray-Sutton to discuss the sustainment and longevity of the OAATC/OAAC Vision and Mission.

November 27, 2018 – OAATC Chairman Bill Beagle hosts the final OAATC meeting of the 132nd General Assembly.

December 5, 2018 – OAATC Chairman Bill Beagle and members of the OAATC host Ohio's annual Aerospace Day, a strategic assembly of government, industry, and academic leaders to discuss the future of the aerospace and aviation field in Ohio. A meeting of the Ohio Aerospace Caucus, a luncheon panel, exhibits, networking opportunities, a message from Lieutenant Governor-elect Jon Husted, and a reception were held throughout the day.

December 31, 2018 – The 132nd General Assembly ends. The term of all members ends. Chairmanship of the OAATC alternates from the Ohio Senate to the Ohio House of Representatives in accordance with the Ohio Revised Code (ORC) 122.98.

Committee Charge

According to the enabling language of House Bill 292 (ORC 122.98), the duties of the committee shall include, but are not limited to, all of the following:

- Studying and developing comprehensive strategies to promote the aviation, aerospace, and technology industries throughout the state, including through the commercialization of aviation, aerospace, and technology products and concepts;
- Encouraging communication and resource-sharing among individuals and organizations involved in the aviation, aerospace, and technology industry, including business, military, and academia;
- Promoting workforce initiatives at all levels that support the aviation and aerospace industry;
- Promoting research and development in the aviation, aerospace, and technology industries, including research and development of unmanned aerial vehicles;
- Providing assistance related to military base realignment and closure.

Annual Report

An amendment was submitted by State Senator Bill Beagle, Chairman of the OAATC to House Bill 49 during the 132nd General Assembly that requires the OAATC to compile an annual report and distribute copies of the report to the Governor, President of the Senate, and Speaker of the House of Representatives no later than December 31st of each year.

The amendment had an effective date of September 29, 2017.

Committee Membership

The OAATC is comprised of six legislators appointed by the President of the Senate and the Speaker of the House of Representatives. One public member is appointed by the Governor and fourteen public members are appointed by a majority vote of the six legislative members.

General Assembly Members:

- Senator Bill Beagle (R-Tipp City) – Chairman
- Senator Sean O’Brien (D-Bazetta) – Secretary
- Senator Joe Uecker (R-Miami Township)
- Representative Laura Lanese (R-Grove City)
- Representative Rick Perales (R-Beavercreek)
- Representative Martin Sweeney (D-Cleveland)

Public Members:

- Tony Bailey – Aerospace Maintenance & Repair Organization Center of Excellence
- Joseph Coogan – Acquisition Logistic Engineering/Quality Aero, Inc.
- Carlos Grodsinsky - ZIN Technologies, Inc.
- Mike Heil – Independent Aerospace and Defense Consultant
- Adam Holmes – Frueh Enterprises
- Virgil Johnson – Former Federal Aviation Administration (FAA) Air Traffic Controller/Supervisor
- John Leland – University of Dayton Research Institute
- Maureen McFarland – Kent State University (KSU)
- Paul Orkwis – University of Cincinnati (UC)
- Jeffery Rolf – Ohio Aerospace Institute (OAI)
- Vincent Russo – Aerospace Technologies Associates LLC
- Ron Shroder – Frontier Technology Inc.
- Terry Slaybaugh – Dayton International Airport
- Robert Tanner – NetJets Inc.
- David Williams – The Ohio State University (OSU)

OAATC Leadership:

- Senator Bill Beagle (R-Tipp City) – Chairman
- Senator Sean O’Brien (D-Bazetta) – Secretary
- Adam Holmes – Frueh Enterprises - Project Opportunity Team Leader
- Bob Tanner – NetJets Inc. – Advocacy Sub-committee Chairman
- Jeff Rolf – Ohio Aerospace Institute (OAI) – Economic Development Sub-committee Chairman
- Maureen McFarland – Kent State University (KSU) – Education Sub-committee Chairwoman
- Carlos Grodsinsky – ZIN Technologies, Inc. – OAAC Chairman

OAATC Chairpersons:

- Representative Rick Perales (R-Beavercreek) – 131st General Assembly
- Senator Bill Beagle (R-Tipp City) – 132nd General Assembly

Committee Staff

Pursuant to the Ohio Revised Code (ORC) 122.98, the OAATC is comprised of six legislators appointed by the President of the Senate and the Speaker of the House of Representatives. At the start of every new General Assembly, the Chairperson shall alternate between the first legislator appointed by the President of the Senate and the first legislator appointed by the Speaker of the House of Representatives. Because the OAATC does not have a regulatory state department or agency, the administrative work of the committee and other responsibilities fall to the staff of the chairperson and the caucus to which he or she belongs.

Senate OAATC Staff:

- Ethan Zucal, Senior Legislative Aide – Office of State Senator Bill Beagle
- Jacob Kingrey, Legislative Aide – Office of State Senator Bill Beagle
- Robert Crum, Legislative Service Commission Fellow – Office of State Senator Bill Beagle
- Adam Pohlbel, Page – Office of State Senator Bill Beagle
- Adam Hopson, Page – Office of State Senator Bill Beagle
- Goran Babic, Policy Advisor – Senate Majority Caucus

Tiger Team Membership

At the order of Chairman Bill Beagle, the OAATC formed a senior leadership team with members of the OAAC. The creation of the Tiger Team is to ensure sustainability as the General Assembly endures term limits. The OAATC strives to be a resource for future state leaders and this united effort will ensure Ohio's commitment to aviation and aerospace.

General Assembly Members:

- Senator Bill Beagle (R-Tipp City) – Chairman
- Representative Rick Perales (R-Beavercreek)

OAATC Public Members:

- Carlos Grodsinsky - ZIN Technologies, Inc.
- Adam Holmes – Frueh Enterprises
- Vincent Russo – Aerospace Technologies Associates LLC
- Robert Tanner – NetJets Inc.
- Jeffery Rolf – Ohio Aerospace Institute

OAAC Public Members:

- Carlos Grodsinsky - ZIN Technologies, Inc. - Chairman
- Senator Bill Beagle (R-Tipp City) – OAATC
- Representative Rick Perales (R-Beavercreek) – OAATC
- Jeffery Rolf – Ohio Aerospace Institute (OAI)
- Robert Tanner – NetJets Inc.
- Ann Heyward – Ohio Aerospace Institute (OAI)
- John Horack – The Ohio State University
- John Kinney – GE Aviation (Ret.)
- Greg Morris – GE Aviation (Ret.)

OAATC Staff:

- Ethan Zucal, Senior Legislative Aide – Office of Senator Bill Beagle
- Jacob Kingrey, Legislative Aide – Office of Senator Bill Beagle

Operating Guidelines:

Operating guidelines, also known as the committee’s “rules of engagement”, were adopted at the April 22, 2015 meeting in order to guide the committee process. All OAATC activities should comply with these guidelines:

- Fulfill duties outlined in enabling legislation
- Make recommendations that are “actionable” and “measurable”
- Leverage or extend Ohio’s existing competitive advantage
- Unite the aerospace and aviation organizations in the state, educational and research organizations, state government agencies, industry, and the national laboratories
- As a group, seek to achieve statewide political consensus

Common Vision:

Adopted by the committee at the November 7, 2017 meeting, “Ohio – America’s Leader in Global Aviation and Aerospace” has become the committee’s vision for the 132nd General Assembly.

Common Mission:

Adopted by the committee at the November 7, 2017 meeting, “Create opportunities in Ohio for economic growth, jobs, education and to shape the future of the Aviation and Aerospace Industries” has become the committee’s mission for the 132nd General Assembly.

Sub-Committee Charters

Sub-Committees were established at the November 7, 2017 meeting and will work collaboratively with working groups from the OAAC. In addition to their work, the sub-committees will be co-chaired by two members, each representing the OAATC and OAAC. The following three working groups will serve as the sub-committees during the 132nd General Assembly:

- **Advocacy**

- Bob Tanner – Chair
- General Members:
 - Mike Heil
 - Virgil Johnson
 - John Leland
- Tasks:
 - Identify opportunities to promote Ohio globally
 - Develop internet and social media presence

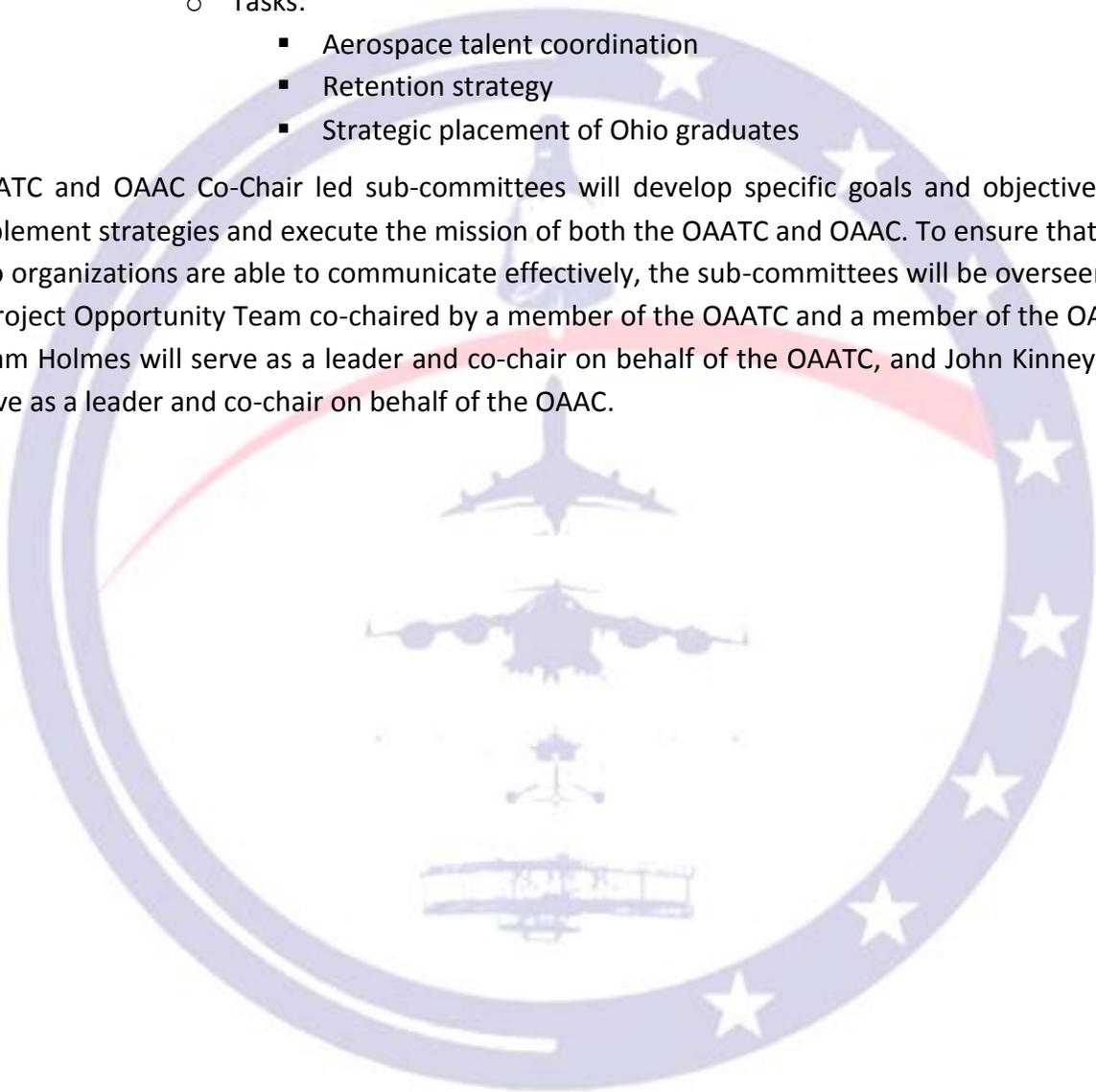
- **Economic Development**

- Jeff Rolf – Chair
- General Members:
 - Tony Bailey
 - Joe Coogan
 - Carlos Grodsinsky
 - Ron Shroder
 - Terry Slaybaugh
- Tasks:
 - Identify opportunities to leverage Ohio assets
 - Identify and pursue opportunities for Job and Economic growth in Ohio

- Education

- Maureen McFarland – Chair
- General Members:
 - Paul Orkwis
 - Vince Russo
 - David Williams
- Tasks:
 - Aerospace talent coordination
 - Retention strategy
 - Strategic placement of Ohio graduates

OAATC and OAAC Co-Chair led sub-committees will develop specific goals and objectives to implement strategies and execute the mission of both the OAATC and OAAC. To ensure that the two organizations are able to communicate effectively, the sub-committees will be overseen by a Project Opportunity Team co-chaired by a member of the OAATC and a member of the OAAC. Adam Holmes will serve as a leader and co-chair on behalf of the OAATC, and John Kinney will serve as a leader and co-chair on behalf of the OAAC.



Focus Areas

Focus areas were also adopted at the November 7, 2017 meeting and given to the three sub-committees. The following primary focus areas are meant to reflect the broadest categories that need to be studied by the committee and its sub-committees but are not limited to:

- Advanced aviation and space technologies and systems:
 - Vehicle systems
 - Propulsion systems
 - Communications
 - Associated ecosystems
- Advanced materials and manufacturing

OAATC-OAAC subcommittees will develop specific goals and objectives to implement strategies and execute the mission of the OAATC through Rallying Opportunities. Examples include:

- Next Generation Aviation
 - Integrated Airspace – UAV/PAV/LDV-Aircraft
 - Next generation air breathing propulsion, acoustic abatement, efficient combustion
 - Hybrid Electric Aircraft - Infrastructure, propulsion, advanced manufacturing supply base, materials
- Next Generation Air Traffic Control (ATC) – “NextGen”
 - Public Private Partnership – FAA-non-profit board to advance ATC of future
 - FAA reauthorization opportunity
- Next Generation Aerospace/Aerospace Communications/Space
 - Hypersonics, next generation air/ramjet propulsion
 - Internet and hi-bandwidth content
 - Small satellite ground and in-space services, propulsion and situational awareness
 - Integration of satellite based and atmospheric based communications

As the OAATC looks to advance the aerospace and aviation industry from present technology to future technology, it is the goal of the OAATC to incorporate the following with the industry’s current state, exploration, implementation, and future state:

- Technology (Engineering)
- Infrastructure (Engineering, Sociology)
- Regulatory Environment (Public Policy)
- Commerciality (Business)

Industry Overview

JobsOhio¹

“Ohio is the birthplace of aviation and a catalyst for the flight innovation. For years, Ohio has been a hub of aerospace and aviation activity that has created an infrastructure fostered by a concentration of companies in close proximity to customers and suppliers.

Ohio’s manufacturing heritage and history of ingenuity have helped create a knowledgeable and diverse talent pool that is ensuring companies find new opportunities to contribute in areas of automation, advanced materials and additive manufacturing. This talent pool, combined with the ability to easily integrate into an established supply chain and a supportive business climate, makes Ohio a great place to take your business to new heights.”

- JobsOhio

Ohio’s Aerospace and Aviation Industry Quick Facts

- More than 590 aerospace companies statewide
- 25 astronauts have come from Ohio
- Over \$12 billion annually in research and development investment in Science and Engineering
- More than 80 campuses with engineering and engineering tech programs
- Number 1 ranked supplier state to Airbus and Boeing
- Over 37,000 employees working in the private aerospace and aviation industry
- Ohio hosts two world class research and testing facilities at NASA Glenn Research Center and the Air Force Research Laboratory at Wright-Patterson Air Force Base.
- The NASA Glenn Research Center Runs Over 500 Specialized research and test facilities

“In Ohio, cooperation among leading public research organizations, world-class academic institutions and forward-thinking private corporations creates a unique and supportive business environment. The ability for companies to easily collaborate drives the development and commercialization for new technologies poised to revolutionize the next generation of flight, unmanned aerial systems (UAS) and space exploration.”

- JobsOhio

Partners in Innovation

- NASA Glenn Research Center
- Ohio Aerospace Institute (OAI)
- America Makes

¹ Facts from JobsOhio <https://jobsohio.com/industries/aerospace-aviation/>

- Ohio Space Grant Consortium
- Battelle
- EWI

Growing Aero Talent

- The Ohio State University
- Ohio University
- University of Cincinnati
- Sinclair Community College
- Case Western Reserve University
- University of Dayton
- Kent State University
- Wright State University

Global Leaders Advancing in Ohio

- GE Aviation
- EATON
- Safran
- L3
- Arconic
- Parker
- Lockheed Martin
- Honeywell
- Northrop Grumman
- UTC Aerospace Systems

“Cincinnati is an ideal location in our core market that enables us to connect with key customers and top partners. We’re focused on growing a team of experts, and another consideration for selecting Cincinnati was the depth of engineering talent that exists in the Midwest. We’re excited about this launch and looking forward to growing out U.S. business.”

- *Ethan Krimins, General Manager, Dedienne Aerospace Cincinnati*

Wright Patterson Air Force Base – Economic Impact ²

- Largest single-site employer in Ohio
 - Over 27,000 employees
 - \$2.3 billion payroll
- Over 34,000 indirect jobs
 - 14 counties impacted
 - Additional \$1.4 billion generated income
- Responsible for 14% of the regional economy
- Large contributor to U.S. Air Force innovation
- Home of the U.S. Air Force Materiel Command
 - Tasked with purchasing:
 - Aircraft
 - Missiles
 - War-fighting Equipment
 - Responsible for consuming 1/3 of the U.S. Air Force \$184 billion budget
- Home of the National Air and Space Intelligence Center
- Scale of local businesses directly and indirectly impacted:
 - Small
 - Medium
 - Large
- Local universities directly impacted:
 - University of Dayton Research Institute
 - Wright State University

² Thompson, Loren. *Mega – Base: What Wright – Patterson Air Force Base Means For The Economy Of Ohio*. 2018. Accessed on April 30, 2018. <https://www.forbes.com/sites/lorenthompson/2018/04/18/mega-base-what-wright-patterson-air-force-base-means-for-the-economy-of-ohio/#43de09473131>

Committee Overview

The following is a brief overview of the Ohio Aerospace and Aviation Technology Committee's (OAATC) work and/or meetings:

Ohio Aerospace and Aviation Technology Committee

January 31, 2018 – Ohio Senate Building, Second Floor, Room 222

OAATC Chairman Bill Beagle meets with representatives of the Ohio Aerospace Institute (OAI) to discuss the initiatives, projects, and plans of OAI for the 2018 calendar year.

Ohio Aerospace and Aviation Technology Committee - Tiger Team

February 9, 2018 – Conference Call

OAATC Chairman Bill Beagle hosted a conference call with Project Opportunity Team Leaders and Co-Chairs, Adam Holmes (OAATC) and John Kinney (OAAC) as well as Leadership Members of the OAATC Carlos Grodsinsky, Bob Tanner and Jeff Rolf, as well as OAATC staff, Ethan Zucal and Jacob Kingrey to discuss the following items:

- OAATC Letter of Support for Hyperloop Transportation Technologies' Ohio projects
- OAATC Website Development
- Twitter handle creation
- Engagement Planning

These topics were discussed as an initiative to better market the Common Vision and Common Mission of the OAATC and the work being achieved by the OAATC Sub-Committees.

Ohio Aerospace and Aviation Technology Committee

February 12, 2018 – Ohio Statehouse

Chairman Bill Beagle submitted a letter of support to Andrea LaMendola, Chief Global Operations Officer, Hyperloop Transportation Technologies that reaffirms Ohio's commitment to Hyperloop technology and willingness to support Hyperloop research and development with the state's corporate and institutional resources.

The letter of support was recommended to Chairman Beagle by Project Opportunity Team Leader, Adam Holmes, and Leadership Member Carlos Grodsinsky on February 9, 2018 after

being vetted by members of the subcommittees. The recommendation to submit a letter of support was made by committee members to the Chairman after the Ohio Senate favorably passed Senate Resolution (SR) 175, sponsored by Senator Kevin Bacon (R-Westerville) and Senator Stephanie Kunze (R-Hilliard) on September 20, 2017 with a vote tally of 32 “Yeas” and zero “Nays.” Senate Resolution 175 was just one of two resolutions passed by the Ohio 132nd General Assembly supporting the Hyperloop projects in Ohio. House Resolution (HR) 236, sponsored by Representative Jim Hughes (R-Upper Arlington) expressing support for the Hyperloop transportation initiative in Ohio was favorably passed by the House of Representatives on December 5, 2017 with a vote tally of 90 “Yeas” and three “Nays.” The resolutions had a combined 58 co-sponsors.

Senate Resolution 175 may be found at the following link:

<https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA132-SR-175>

House Resolution 236 may be found at the following link:

<https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA132-HR-236>

The Hyperloop letter of support may be found on the OAATC Twitter account.

The Hyperloop letter of support submitted by Chairman Bill Beagle on behalf of the OAATC reads as follows:



Bill Beagle
State Senator
5th District

Andrea LaMendola, Chief Global Operations Officer
Hyperloop Transportation Technologies
11844 Jefferson Blvd.
Culver City, CA 90230
February 12, 2018

Ms. LaMendola,

The Ohio Aerospace and Aviation Technology Committee (OAATC) is pleased to provide this letter of support to Hyperloop Transportation Technologies (HTT) that reaffirms Ohio's commitment to Hyperloop technology and willingness to support Hyperloop research and development with the State's corporate and institutional resources. The OAATC represents the aviation and aerospace stakeholders within the State and is the legislative committee that connects Ohio's aerospace industry to the state government.

Ohio possesses a uniquely rich aviation and aerospace history and is a long standing supporter of transportation technology innovation. In addition to being the birthplace of aviation, Ohio was a national leader in long distance electric railway and automobile traffic management system development. Ohio's industries and supply chain have the right experience and mindset to accelerate Hyperloop corridor development.

The OAATC and its members fully support HTT's efforts to build Hyperloop corridors within Ohio and the mid-west region. We also encourage Ohio's aviation and aerospace industries, transportation agencies, and private sector partners to work collaboratively with HTT in the direct research, development, and production of Hyperloop technology.

Ohio is poised to lead the implementation and adoption of next generation transportation modalities like Hyperloop. We encourage all of our constituents to support HTT plans in Ohio and the full engagement of our advanced manufacturing, and aerospace industries in all future HTT transportation technology development.

Sincerely,

A handwritten signature in blue ink that reads "Bill Beagle".

State Senator Bill Beagle
Chair, Ohio Aerospace and Aviation Technology Committee

Boards and Commissions
Chair, Aerospace & Aviation Technology Committee
Commission on Fatherhood
Governor's Executive Workforce Board
Third Frontier Advisory Board

Committees
Chair, Public Utilities
Vice Chair, Health, Human Services and Medicaid
Agriculture
Energy and Natural Resources
Finance
Finance Subcommittee on Health and Medicaid
Insurance and Financial Institutions
Ways and Means

Ohio Aerospace and Aviation Technology Sub-Committee – Project Opportunity Team

February 16, 2018 – Conference Call

OAATC Chairman Bill Beagle hosted a conference call with Project Opportunity Team Leaders and Co-Chairs, Adam Holmes (OAATC) and John Kinney (OAAC) as well as Senior Members of the OAATC Carlos Grodsinsky, Bob Tanner, Tony Bailey and Jeff Rolf, Jonathan Striker of NetJets, Inc., as well as OAATC staff, Ethan Zucal and Jacob Kingrey as a follow-up to the sending of the Hyperloop Letter of Support on February 12, 2018.

Project Opportunity Team Leaders were tasked with updating the Chairmen and Chairwoman of the three OAATC sub-committees on the recent actions of the Hyperloop Letter of Support submission, who in turn were tasked with updating sub-committee members.

Furthermore, the sub-committees were tasked with providing aid and advocacy to the Hyperloop mission in Ohio.

Ohio Aerospace and Aviation Technology Sub-Committee – Project Opportunity Team

March 8, 2018 – Conference Call

OAATC Chairman Bill Beagle hosted a conference call with Project Opportunity Team Leaders and Co-Chairs, Adam Holmes (OAATC) and John Kinney (OAAC) as well as Senior Members of the OAATC Carlos Grodsinsky, Bob Tanner, and Jeff Rolf, Jonathan Striker of NetJets, Inc. regarding possible legislation addressing a “Fly Away” Tax Proposal.

OAATC Chairman Bill Beagle requested that the Project Opportunity Team Leaders and Co-Chairs work with OAATC and OAAC sub-committee members to research information resources to refresh the OAATC’s analysis of Ohio’s “Fly Away” Tax Proposal, and report back in two weeks.

Ohio Aerospace and Aviation Technology Sub-Committee

March 21, 2018 – Report to Chairman Bill Beagle

On March 8, 2018, Chairman Bill Beagle tasked Senior OAATC Members Carlos Grodsinsky (OAAC Chairman), Ron Shroder, Tony Bailey, Jeff Rolf – Economic Development Sub-Committee Chairman, Bob Tanner – Advocacy Sub-Committee Chairman, Maureen McFarland – Education Sub-Committee Chairwoman, Adam Holmes – Project Opportunity Team Leader, and OAAC Project Opportunity Team Leader, John Kinney to research information resources to refresh the OAATC’s analysis of Ohio’s “Fly Away” Tax Proposal, and report back in two weeks. Below is the result of the research:

- The National Business Aviation Association (NBAA) and the Legislative Service Commission (LSC) remain the two best resources for information on the tax proposal's potential impacts on Ohio business.
- OAATC Members Tony Bailey and Bob Tanner work regularly with the NBAA and are the OAATC's connectors with the organization. When appropriate, the OAATC can reach out to the NBAA to update Ohio's current tax impact information.
 - Note: OAATC Members Tony Bailey and Bob Tanner have reached out to the NBAA and received via email information regarding "Fly Away" details concerning a study commissioned by the NBAA on the economic impact of an aircraft sales exemption. In addition, Bob Tanner reached out to The Ohio State University (OSU) to see if the university would be interested in launching a similar study as part of a curriculum as a senior/student project.
- The OAATC research also included discussions with the Ohio Aviation Association (OAA). The OAA is a non-profit with members representing airport management, airport governing bodies, and groups that provide support and assistance to airports. The OAA's Executive Director, Stacey Heaton, is a member of the OAAC. The OAATC determined that though valuable to Ohio, the OAA is not a "Fly Away" tax impact information resource. The OAA does not have national information resources and are more focused on Ohio airport infrastructure advocacy.

Other research topics included:

- OAAC Member, Dr. John Horack has been working with his The Ohio State University aerospace engineering students to develop a UAV "Safe City" conceptual plan that he would like them to present to the OAAC and OAATC. The OAATC is looking to include them on the next OAAC meeting agenda on April 27, 2018. "Safe City" may be an outstanding marketing opportunity and catalyst for increasing academic support for OAATC objectives.
- A very pertinent article is attached describing FAA, NASA, Amazon, Boeing, GE, and Google collaboration on a common Drone Air Traffic Management system. The OAATC has concentrated on UAV/PAV topics, including Ohio's two bids for the FAA's UAV Integration Project Proposal. Furthermore, the OAATC has members from both GE and NASA; as well as other members with very close ties to the FAA. The continued coordinated effort of the OAATC is already helping Ohio take better advantage of these types of opportunities.

<https://www-nextbigfuture-com.cdn.ampproject.org/c/s/www.nextbigfuture.com/2018/03/faq-nasa-amazon-boeing-ge-and-google-working-together-on-drone-air-traffic-management.html/amp>

Ohio Aerospace and Aviation Technology Committee

April 10 - 11, 2018 – Hilton Columbus, 8700 Lyra Dr., Columbus, Ohio 43240

OAATC Chairman Bill Beagle, OAATC General Member Terry Slaybaugh, and other members of the OAATC attend the Ohio Aviation Association (OAA) Conference. The two day conference “brought Ohio aviation supporters another great Annual Conference with networking, fun, and education! The theme for the 2018 conference was ‘Upping the Ante for Ohio Aviation.’ The 2018 Annual Conference kicked-off with the OSU Air Force ROTC drill team’s Presentation of the Colors and opening remarks by the 2017-2018 OAA President, Tory Richardson.” “The conference agenda offered nine (9) general sessions and sixteen (16) breakout sessions over the short day-and-a-half. In addition to the numerous educational opportunities, the OAA conference offered student-specific sessions.”³

Ohio Aerospace and Aviation Technology Committee Project Opportunity Team

April 27, 2018 – Ohio Senate Building, Second Floor, Room 222

OAATC Chairman Bill Beagle met with OAATC Project Opportunity Team Leader, Adam Holmes, and OAAC Chairman, and OAATC Member, Carlos Grodsinsky in preparation for the afternoon’s OAAC quarterly meeting. Chairman Bill Beagle and Adam Holmes would both address the OAAC and provide updates on behalf of the OAATC.

Ohio Aerospace and Aviation Technology Committee Tiger Team

April 27, 2018 – Vern Riffe Bldg., South A, 31st Floor, 77 South High St., Columbus, OH 43215

OAATC Chairman Bill Beagle, OAATC Project Opportunity Team Leader, Adam Holmes provide updates to members of the OAAC on the progress of the OAATC and subcommittees. OAATC Members present for the OAAC meeting were: Chairman Bill Beagle, Project Opportunity Team Leader, Adam Holmes, Tony Bailey, Carlos Grodsinsky (Chair of the OAAC), John Leland, Jeff Rolf, Vince Russo and Bob Tanner, and staff, Ethan Zucal.

³ https://www.ohioaviation.org/annual_conference

Ohio Aerospace and Aviation Technology Committee – Tiger Team

May 2, 2018 – Conference Call

In preparation for the July 27, 2018 OAATC meeting, OAATC Chairman Bill Beagle hosted a conference call to determine the items that would be added to the committee's agenda. Participating in the conference call was: Project Opportunity Team Leader, Adam Holmes, Leadership Member, Carlos Grodsinsky, and staff, Ethan Zucal, Jacob Kingrey, and Robert Crum. The following items were discussed:

- The One Ohio Series: Defense Summit hosted by the Ohio Aerospace Institute (OAI) in Sandusky, Ohio
- July 27, 2018 OAATC Springfield Air National Guard Base meeting agenda
 - One Ohio Status Update
 - OAAC Status Update
 - OAATC Project Opportunities
 - UAS – Safe City
 - UAS – State and Federal Support
 - Ohio General Assembly Legislation Regarding Ohio's "Fly Away Tax"
 - OAATC Moving Forward

Ohio Aerospace and Aviation Technology Committee – Tiger Team

May 16, 2018 – Ohio Senate Building, Second Floor, Room 222

On behalf of OAATC Chairman Bill Beagle, Senior Legislative Aide Ethan Zucal meets with representatives of the Ohio Aviation Association (OAA) during their annual Legislative Day to discuss the projects and initiatives that are of high importance to the OAA.

Ohio Aerospace and Aviation Technology Committee

May 16, 2018 – Ohio Statehouse, Rotunda

OAATC Chairman Bill Beagle accompanied by OAATC staff: Goran Babic, Ethan Zucal, Jacob Kingrey, and Robert Crum attends the Ohio Aviation Association (OAA) Legislative Reception.

Representatives of the OAA met with over 25 legislators throughout the day and over 40 legislative offices joined the OAA for their reception. ⁴

Ohio Aerospace and Aviation Technology Committee

May 30 - 31, 2018 – 400 Sawmill Creek Dr., Huron (Sandusky), Ohio 44839

OAATC Chairman Bill Beagle, OAATC Project Opportunity Team Leader Adam Holmes, OAATC Leadership Members Carlos Grodsinsky and Jeff Rolf attend the 2018 Ohio Defense Summit hosted by the Ohio Aerospace Institute. “The Ohio Defense Summit for Business is a two-day event showcasing the changing needs of the Department of Defense, the strength of Ohio industry and academia, and the resources available to Ohio businesses. The Summit introduced Department of Defense officials to all Ohio has to offer, including a visit to the world-unique NASA Plum Brook Station for all participants.” ⁵

Ohio Aerospace and Aviation Technology Committee – Tiger Team

June 22, 2018 – Conference Call

In preparation for the July 27, 2018 OAATC meeting, OAATC Chairman Bill Beagle hosted a conference call to discuss the progress of the items that were determined to construct the committee’s agenda. Participating in the conference call was: Project Opportunity Team Leader, Adam Holmes, Leadership Member, Carlos Grodsinsky, and Economic Development Subcommittee Chairman, Jeff Rolf. The following items were discussed:

- July 27, 2018 OAATC Springfield Air National Guard Base meeting agenda
 - One Ohio Status Update
 - OAAC Status Update
 - OAATC Project Opportunities
 - UAS – Safe City, State and Federal Support
 - Ohio General Assembly Legislation Regarding Ohio’s “Fly Away Tax”
 - OAATC Moving Forward
 - UAS Center Visit
 - Status of Beyond Line of Site Operations
 - Facility Tour

⁴ <https://www.ohioaviation.org/>

⁵ <http://events.r20.constantcontact.com/register/event?oeidk=a07ef8gkzq5bd8b2665&llr=krg8lelab&showPage=true>

Ohio Aerospace and Aviation Technology Committee

July 20, 2018 – OAAC Quarterly Meeting – Vern Riffe Bldg., South A, 31st Floor, 77 South High St., Columbus, OH 43215

OAATC Chairman Bill Beagle and Adam Holmes, OAATC Project Opportunity Team Leader would both address the OAAC and provide updates on the projects, structure, and status of the OAATC.

OAATC Members present for the OAAC meeting were: Chairman Bill Beagle, Project Opportunity Team Leader, Adam Holmes, Carlos Grodsinsky (Chair of the OAAC), Mike Heil, and Bob Tanner.

Ohio Aerospace and Aviation Technology Committee

July 27, 2018 – Springfield Air National Guard Base, Springfield, Ohio

OAATC holds a field meeting at the Springfield Air National Guard Base in Springfield, Ohio. Members are brief by Colonel Gregg Hesterman, Base Commander on the Mission of the 178th Wing. Other Presentations include:

- OAAC Status Update by OAATC Member and OAAC Chairman Carlos Grodsinsky
- OAATC Project Opportunities by Adam Holmes, OAATC Project Opportunity Team Leader
- Air Camp Status Update by OAATC Member Vince Russo
- Fly Away Tax Legislation Update by OAATC Chairman Bill Beagle, State Senator
- FAA/DOT UAS IPP – Status of Beyond Line of Site by David Gallagher, Director, Ohio UAS Center
- Mobile Air Traffic Control Tour and Capabilities Briefing by David Gallagher, Director, Ohio UAS Center
- OAATC Moving Forward by OAATC Chairman Bill Beagle, State Senator

Committee members and staff present:

- State Senator Bill Beagle, Chairman
- Adam Holmes, Project Opportunity Team Leader
- Carlos Grodsinsky, Leadership Member

- Ron Shroder, General Member
- Joe Coogan, General Member
- John Leland, General Member
- Vince Russo, General Member
- Ethan Zucal, Staff
- Jacob Kingrey, Staff
- Robert Crum, Staff

Ohio Aerospace and Aviation Technology Committee

August 24, 2018 – Conference Call

Ohio Aerospace Day Planning Committee discussion.

Ohio Aerospace and Aviation Technology Committee

August 31, 2018 – Conference Call

Ohio Aerospace Day Planning Committee discussion.

Ohio Aerospace and Aviation Technology Committee – Tiger Team

September 5, 2018 – Conference Call

In preparation for the September 7, 2018 OAATC/OAAC meeting with the Republican Gubernatorial Campaign of DeWine-Husted, OAATC Chairman Bill Beagle hosted a conference call to discuss the OAATC/OAAC Executive Summary, “2018 Ohio Aerospace, Aviation, and Defense Employment, Education, and Economics, Federal & State Policy History, Strategy, and Agenda.” Those present on the phone call were:

- OAATC
 - o State Senator Bill Beagle, Chairman
 - o Adam Holmes, Project Opportunity Team Leader
 - o Bob Tanner, Advocacy Sub-committee Chairman
 - o Carlos Grodsinsky, Leadership Member
 - o Ethan Zucal, Senior Legislative Aide, Office of Senator Bill Beagle
 - o Jacob Kingrey, Legislative Aide, Office of Senator Bill Beagle

- Robert Crum, Legislative Service Commission (LSC) Fellow, Office of Senator Bill Beagle
- OAAC
 - Carlos Grodsinsky, Chairman
 - Greg Morris, Project Opportunity Team Leader

Ohio Aerospace and Aviation Technology Committee

September 7, 2018 – Conference Call

Ohio Aerospace Day Planning Committee discussion.

Ohio Aerospace and Aviation Technology Committee

September 7, 2018 – 174 E. Long St., Columbus, Ohio

Members of the OAATC and OAAC meet with the Republican Gubernatorial Campaign of DeWine-Husted.

The OAATC will experience two major transitions in 133rd General Assembly beginning on January 1, 2019.

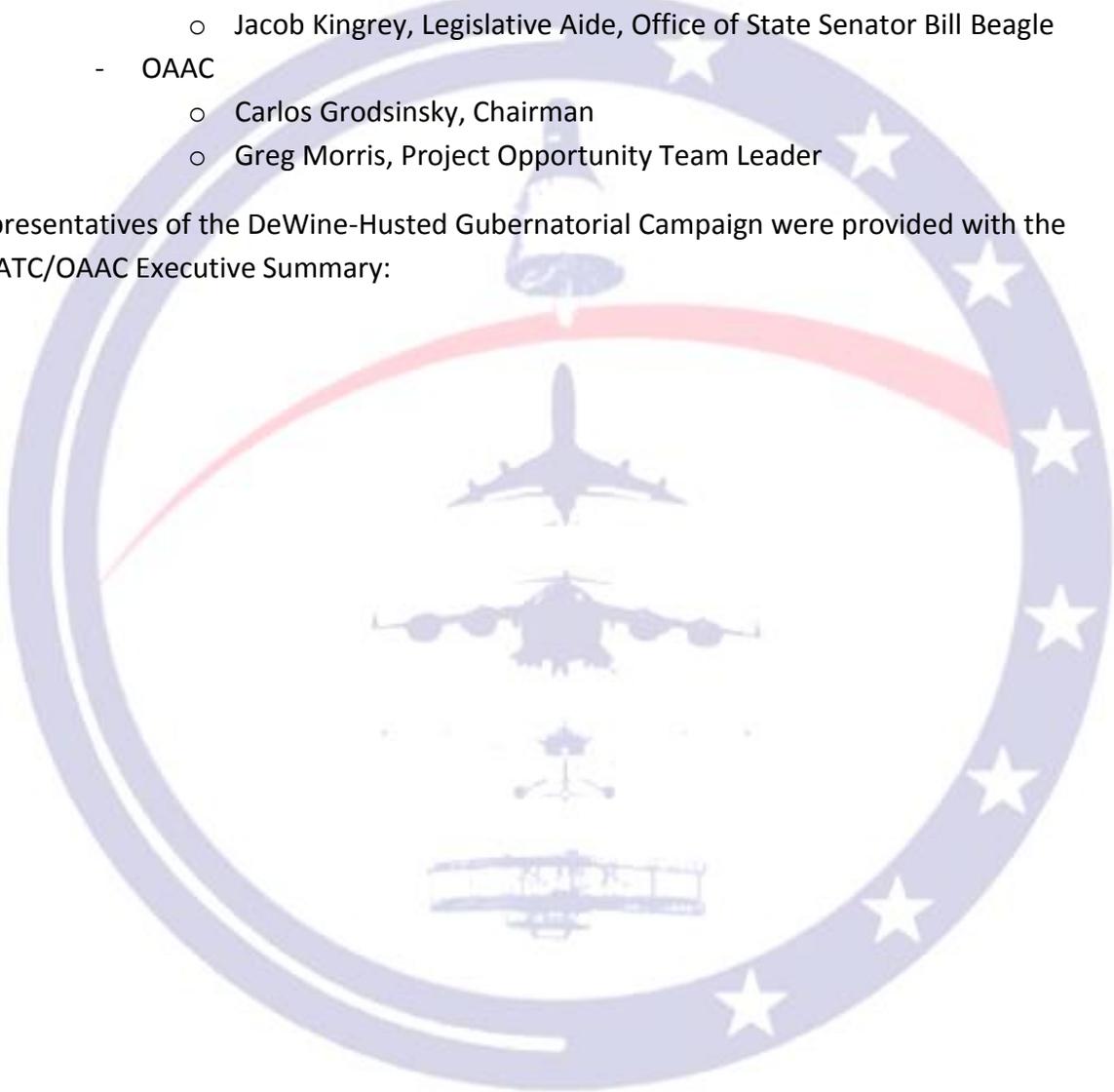
1. Pursuant to the Ohio Revised Code (ORC) 122.98, the OAATC at the start of every new General Assembly, the Chairperson shall alternate between the first legislator appointed by the President of the Senate and the first legislator appointed by the Speaker of the House of Representatives. The OAATC during the 133rd General Assembly shall be chaired by a member of the House of Representatives.
2. Pursuant to the Ohio Constitution, Article III Section II, Governor John Kasich has served the lawful amount of terms as Governor of Ohio. Thus in the 133rd General Assembly, the OAATC will experience a Governor transition.

Because the OAATC does not have a regulatory state department or agency, the administrative work of the committee and other responsibilities fall to the staff of the chairperson and the caucus to which he or she belongs. As a result, the purpose of the meeting is to discuss the sustainment and longevity of the OAATC/OAAC Vision and Mission.

Those present at the meeting are:

- OAATC
 - o State Senator Bill Beagle, Chairman
 - o Adam Holmes, Project Opportunity Team Leader
 - o Bob Tanner, Advocacy Sub-committee Chairman
 - o Carlos Grodsinsky, Leadership Member
 - o Goran Babic, Policy Advisor, Senate Majority Caucus
 - o Ethan Zucal, Senior Legislative Aide, Office of State Senator Bill Beagle
 - o Jacob Kingrey, Legislative Aide, Office of State Senator Bill Beagle
- OAAC
 - o Carlos Grodsinsky, Chairman
 - o Greg Morris, Project Opportunity Team Leader

Representatives of the DeWine-Husted Gubernatorial Campaign were provided with the OAATC/OAAC Executive Summary:





2018 Ohio Aerospace, Aviation, and Defense Employment, Education, and Economics, Federal & State Policy History, Strategy, and Agenda

Ohio has brought industry and university leaders together, as well as elected officials from across Ohio to form the Ohio Aerospace and Aviation Council (OAAC) and the Ohio Aerospace and Aviation Technology Committee (OAATC). Together, the OAAC and the OAATC are chartered to develop a strategy and framework in order to support, retain, and create jobs within Ohio's aerospace, aviation, and defense industries, including related federal, academic, and non-profit installations and assets. The OAAC/OAATC adopted specific strategies, guided by the integration, engagement, and alignment of Ohio stakeholder interests, to rally those with a common vision and mission to advocate for, guide and integrate Ohio's aerospace and aviation industry.

Vision: Ohio – America's Leader in Global Aviation and Aerospace

Mission: Create opportunities in Ohio for economic growth, jobs, education, and to shape and grow the future of the Aviation and Aerospace Industries

The OAAC/OAATC with JobsOhio have validated Ohio's aerospace industry as one of Ohio's largest – directly employing over 100,000 full-time workers. Ohio has no other industrial sector in which its federal facilities, industry, and academic institutions play as dominant a role in U.S. industrial production, export, research & development (R&D), and policy leadership as Ohio's aerospace industry. Consider the following:

- Ohio is a leader in aerospace manufacturing attractiveness¹;
- Ohio is the undisputed leader in US Military aviation research & development²;
- Ohio is the undisputed leading supplier to the world's major aerospace, aviation, and defense OEMs (ex. Boeing and Airbus);
- Ohio offers unique test facilities and world-class R&D in emerging aerospace innovation areas: simulated space environments, hypersonics, hyperloop-mobility, aeronautics, materials, sensors, aerospace power and propulsion, aerospace medicine and human effectiveness, advanced manufacturing, and additive manufacturing.

CURRENT STRATEGIES/OPPORTUNITIES

- Improve Ohio's aviation infrastructure to meet the global requirements of Ohio companies by establishing a dedicated aerospace staff position within the administration reporting to the Governor;
- Continue to unite Ohio under an aligned aerospace theme and strategy, focusing collective regional interests, and provide a face and focal point of Ohio's aerospace sector;
- Support the industry development of Ohio Unmanned Aircraft Systems (UAS) and Personnel Air Vehicles (PAV) and an academic focus capitalizing on unique assets within the State to drive industry growth, i.e. Integration of Ground Radar to integrate UAS operations within National Air Space, and US33 Smart Corridor integration for UAS systems with DriveOhio autonomy strategies;
- Leverage Ohio's dominant position in advanced materials R&D for direct application to

¹ [PwC 2017 Aerospace Manufacturing Attractiveness Rankings](#)

² [AFRL - HQ Dayton Ohio - WPAFB - Aero-space R&D](#)

- hypersonics and next generation aerospace use;
- Continue to provide state funding for university based R&D with aerospace and aviation centers of excellence, and the Ohio Federal Research Network to attract top talent;
 - Maintain and expand Ohio's position as a worldwide leader of cutting edge aerospace R&D, testing facilities and capabilities, i.e. hypersonic test facilities at AFRL, NASA GRC and Plum Brook Station, support the logistics transportation modifications from Mansfield airport to provide large test article transport to NASA Glenn Research Center Plum Brook Station;
 - Expand Ohio's aerospace supply network by supporting the expansion of Ohio's maintenance, repair, and overhaul (MRO) industry and support an MRO Center of Excellence to drive this expansion;
 - Develop a statewide initiative to provide greater focus and support for the retention and expansion of the Ohio aircraft power and propulsion development and manufacturing sector;
 - Develop and support a state-level Office of Government and Military Affairs reporting to the Governor to assure preparedness of regular military, national air guard, NASA, and other federal installations associated with aerospace to secure against Base Realignment and Closure (BRAC) federal initiatives;
 - Expand Ohio's DriveOhio initiative and assure an integrated focus on autonomous mobility solutions which include first and last mile UAS/PAV and aviation multi-modal connectivity with planned automotive strategies;
 - Support the national development of Air Traffic Reform, including the implementation, performance evaluation and testing of NextGen technologies within Ohio commercial and general aviation airports;
 - Support development of the Ohio Unmanned Aircraft Systems (UAS) Industry through favorable regulatory policies to test and operate such systems with statewide pre-emption laws;
 - Assist in preparing Ohio's workforce to meet the in-demand job needs of the aerospace and aviation sectors through industry training partnerships and state based decision making for available federal and state training initiatives;
 - Leveraging Ohio's federal and state aerospace and aviation research and development assets and support Ohio BOLD and other innovation cluster platforms;
 - Providing a mature general aviation tax exemption policy to drive aviation/UAV/PAV/MRO and other aircraft operation expansion;
 - Supporting STEM education from K-12 and state funded higher education programs aligned to industry needs;
 - Support Ohio Global Reach to Engage Academic Talent (G.R.E.A.T.) and other workforce and STEM education initiatives to facilitate policy, networking, and integration programs that keep aerospace and aviation academic talent in Ohio.

ONE OHIO

The overarching goal of the OAAC and the OAATC is to retain and expand the 100,000 direct jobs associated with Ohio's aerospace, aviation, and defense sectors. In developing their strategy, the OAAC/OAATC have benchmarked Ohio's advocacy efforts at the federal and state levels, as compared to similar efforts by other states. It was found that Ohio's advocacy in support of these sectors is often conducted by regional partnership organizations, companies, and nonprofit organizations. Conversely, other major aviation and aerospace industry states benefit from aligned statewide advocacy to their federal and state officials. To optimize Ohio's position, a framework supporting a One Ohio aviation and aerospace strategy has been developed to align our efforts and to serve as a call to ACTION of Ohio stakeholders. The OAAC/OAATC approach is to provide single points of contact with representation from all regional stakeholders resulting in a single inclusive industry agenda.

Ohio Aerospace and Aviation Technology Committee – Tiger Team

September 11, 2018 – Conference Call

As a follow-up to the September 7, 2018 OAATC/OAAC meeting with the Republican Gubernatorial Campaign of DeWine-Husted, OAATC Chairman Bill Beagle hosted a conference call to discuss drafting a document that listed the top three priorities of the OAATC/OAAC for future use. Chairman Beagle also shared that he had connected with the Democratic Gubernatorial Campaign of Cordray-Sutton and that his office would arrange a meeting. Those present on the phone call were:

- OAATC
 - o State Senator Bill Beagle, Chairman
 - o Adam Holmes, Project Opportunity Team Leader
 - o Bob Tanner, Advocacy Sub-committee Chairman
 - o Carlos Grodsinsky, Leadership Member
 - o Ethan Zucal, Senior Legislative Aide, Office of Senator Bill Beagle
 - o Jacob Kingrey, Legislative Aide, Office of Senator Bill Beagle
 - o Robert Crum, Legislative Service Commission (LSC) Fellow, Office of Senator Bill Beagle
- OAAC
 - o Carlos Grodsinsky, Chairman
 - o Greg Morris, Project Opportunity Team Leader

Below is the OAATC/OAAC 2018 – 2019 Ohio Aerospace, Aviation, and Defense Employment, Education, and Economics Priorities. This document lists the top priorities of both organizations and will be submitted to both Gubernatorial Campaigns as a follow-up to meetings between the OAATC and OAAC, and the Gubernatorial Campaigns.



2018 - 2019 Ohio Aerospace, Aviation, and Defense Employment, Education, and Economics Priorities

Through a framework of alignment, coordination and opportunity identification the industry led Ohio Aerospace and Aviation Council and the legislative Ohio Aerospace and Aviation Technology Committee endorse the following 2018-2019 priorities to achieve a common vision and mission.

Vision: Ohio – America’s Leader in Global Aviation and Aerospace

Mission: Create opportunities in Ohio for economic growth, jobs, education, and to shape and grow the future of the Aviation and Aerospace Industries

We suggest further alignment and coordination of Ohio’s aerospace and aviation stakeholders directly with the Governor’s staff to more closely align and coordinate JobsOhio, ODOT, ODSA and other statewide initiatives that drive the aerospace and aviation agenda of the state. Each identified priority includes workforce development and education components identifying transformational opportunities to re-train current skilled labor and prepare Ohioans to meet the needs of the aerospace and aviation sector.

Aerospace and Aviation Top Three Priorities

1. Support the industry development of National Air Space integration with Ohio Unmanned Aircraft Systems (UAS) and Personal Air Vehicles (PAV) through coordinated NextGen aviation policy and UAS/PAV regulatory positions providing pre-emptive laws and coordinated programs across the state to focus academic and workforce programs and to capitalize on unique assets within the State driving industry growth (for further detail see Appendix 1).
2. Expand Ohio’s aerospace supply network by supporting the expansion of Ohio’s maintenance, repair, and overhaul (MRO) industry and support an MRO Center of Excellence to drive this expansion (for further detail, see Appendix 2).
3. Leverage Ohio’s dominant position in advanced materials R&D for direct application to hypersonics and next generation advanced manufacturing and aerospace use.

Additional highly critical priorities listed below in Appendix 3.

ONE OHIO

The overarching goal of the OAAC and the OAATC is to retain and expand the 100,000 direct jobs associated with Ohio’s aerospace, aviation, and defense sectors. In developing its strategy, the OAAC/OAATC benchmarked Ohio’s advocacy efforts at the federal and state levels, as compared to similar efforts by other states. It was found that Ohio’s advocacy in support of these sectors is often conducted by regional partnership organizations, companies, and nonprofit organizations. Conversely, other major aviation and aerospace industry states benefit from aligned statewide advocacy to their federal and state officials. To optimize Ohio’s position, a framework supporting a One Ohio aviation and aerospace strategy was developed to align our efforts and to serve as a call to ACTION of Ohio stakeholders. The OAAC/OAATC approach is to provide single points of contact with representation from all regional stakeholders resulting in a single inclusive industry agenda.



Appendix 1

- Integration of Ground Radar to integrate UAS operations within National Air Space, and US33 Smart Corridor integration for UAS systems with DriveOhio autonomy strategies,
- Expand Ohio's DriveOhio initiative and assure an integrated focus on autonomous mobility solutions including first and last mile UAS/PAV, hyperloop and aviation multi-modal connectivity with planned automotive strategies,
- Support national development of Air Traffic Reform including implementing performance evaluation and testing of NextGen technologies and policy within Ohio commercial and general aviation airports, and
- Continue to provide state funding for university based R&D with aerospace and aviation centers of excellence, and the Ohio Federal Research Network to attract top talent.

Appendix 2

- Support and initiate a public private partnership to launch a Maintenance, Repair and Overhaul center of excellence,
- Assure the alignment and coordination of workforce skilled labor transformational opportunities within the aerospace advance manufacturing sectors, and
- Assure the alignment and coordination of skilled labor certification in the MRO through academic, state and industry partnership (utilize innovative models like RAMTEC).

Appendix 3

- Improve Ohio's aviation and aerospace infrastructure to meet the global requirements of Ohio companies by establishing a dedicated aerospace staff position within the administration reporting to the Governor;
- Maintain and expand Ohio's position as a worldwide leader of cutting edge aerospace R&D, testing facilities and capabilities, i.e. hypersonic and other unique test facilities at AFRL, NASA GRC and Plum Brook Station;
- Develop a statewide initiative to provide greater focus and support for the retention and expansion of the Ohio aircraft power and propulsion development and manufacturing sectors;
- Develop and support a state-level Office of Government and Military Affairs reporting to the Governor to assure preparedness of regular military, national air guard, NASA, and other federal installations associated with aerospace to secure against Base Realignment and Closure (BRAC) federal initiatives;
- Assist in preparing Ohio's workforce to meet the in-demand job needs of the aerospace and aviation sectors through industry training partnerships and state based decision making for available federal and state training initiatives;
- Leveraging Ohio's federal and state aerospace and aviation research and development assets and support Ohio BOLD and other innovation cluster platforms;
- Providing a mature general aviation tax policy to drive aviation/UAV/PAV/MRO and other aircraft operation expansion;
- Supporting STEM education from K-12 and state funded higher education programs aligned to industry needs;
- Support Ohio Global Reach to Engage Academic Talent (G.R.E.A.T.) and other workforce and STEM education initiatives to facilitate policy, networking, and integration programs that keep aerospace and aviation academic talent in Ohio.

Ohio Aerospace and Aviation Technology Committee

September 14, 2018 – Conference Call

Ohio Aerospace Day Planning Committee discussion.

Ohio Aerospace and Aviation Technology Committee

September 18, 2018 - COSI, 333 W. Broad St., Columbus, OH 43215

OAATC Chairman Bill Beagle and OAAC Chairman, and OAATC Leadership Member Carlos Grodsinsky attend a NASA Breakfast with NASA Administrator Jim Bridenstine to discuss the future of NASA and the aerospace and aviation industry in Ohio.

Ohio Aerospace and Aviation Technology Committee

September 21, 2018 – Conference Call

Ohio Aerospace Day Planning Committee discussion.

Ohio Aerospace and Aviation Technology Committee

September 28, 2018 – Conference Call

Ohio Aerospace Day Planning Committee discussion.

Ohio Aerospace and Aviation Technology Committee

October 5, 2018 – Conference Call

Ohio Aerospace Day Planning Committee discussion.



Ohio Aerospace and Aviation Technology Committee

October 10, 2018 – Conference Call

OAATC Chairman Bill Beagle hosts a conference call regarding the possible collaboration between the Center of Science and Industry (COSI), the OAATC, and Ohio Aerospace and Aviation Council (OAAC). Participating in the phone call was Chairman Beagle, OAAC Chairman and OAATC Leadership Member, Carlos Grodsinsky, and COSI Vice President of External Affairs, Strategic Initiatives, and Business Development, Stephen White, and OAATC staff member Ethan Zucal.

Ohio Aerospace and Aviation Technology Committee

October 12, 2018 – OAAC Quarterly Meeting – COSI, 333 W. Broad St., Columbus, Ohio

Adam Holmes, OAATC Project Opportunity Team Leader briefed the OAAC, chaired by Carlos Grodsinsky, OAATC Leadership Member on the projects, structure, and status of the OAATC.

Ohio Aerospace and Aviation Technology Committees

October 16, 2018 – Ohio Senate Building, Second Floor, Room 222

OAATC Chairman Bill Beagle meets with the new President and CEO of the Ohio Aerospace Institute, Dr. John Sankovic.

Ohio Aerospace and Aviation Technology Committees

October 16, 2018 – Ohio Statehouse, First Floor, Room 139

Members of the OAATC and OAAC meet with the Democratic Gubernatorial Campaign of Cordray-Sutton.

The OAATC will experience two major transitions in 133rd General Assembly beginning on January 1, 2019.

3. Pursuant to the Ohio Revised Code (ORC) 122.98, the OAATC at the start of every new General Assembly, the Chairperson shall alternate between the first legislator appointed by the President of the Senate and the first legislator appointed by the Speaker of the House of Representatives. The OAATC during

the 133rd General Assembly shall be chaired by a member of the House of Representatives.

4. Pursuant to the Ohio Constitution, Article III Section II, Governor John Kasich has served the lawful amount of terms as Governor of Ohio. Thus in the 133rd General Assembly, the OAATC will experience a Governor transition.

Because the OAATC does not have a regulatory state department or agency, the administrative work of the committee and other responsibilities fall to the staff of the chairperson and the caucus to which he or she belongs. As a result, the purpose of the meeting is to discuss the sustainment and longevity of the OAATC/OAAC Vision and Mission.

Those present at the meeting are:

- OAATC
 - o State Senator Bill Beagle, Chairman
 - o State Senator Sean O'Brien, Secretary
 - o Adam Holmes, Project Opportunity Team Leader
 - o Bob Tanner, Advocacy Sub-committee Chairman
 - o Carlos Grodsinsky, Leadership Member
 - o John Sankovic, Appointee-Pending Member of the OAATC
 - o Goran Babic, Policy Advisor, Senate Majority Caucus
 - o Ethan Zucal, Senior Legislative Aide, Office of State Senator Bill Beagle
 - o Nate Shipman, Senior Legislative Aide, Office of State Senator Sean O'Brien
- OAAC
 - o Carlos Grodsinsky, Chairman
 - o Greg Morris, Project Opportunity Team Leader

Members of the OAATC and OAAC submitted the 2018 Ohio Aerospace, Aviation, and Defense Employment, Education, and Economics, Federal & State Policy History, Strategy, and Agenda to the campaign. This executive summary is the same document that was submitted to the DeWine-Husted Campaign on September 7, 2018.

Ohio Aerospace and Aviation Technology Committee

October 26, 2018 – Conference Call

Ohio Aerospace Day Planning Committee discussion.

Ohio Aerospace and Aviation Technology Committee

November 2, 2018 – Conference Call

Ohio Aerospace Day Planning Committee discussion.

Ohio Aerospace and Aviation Technology Committee

November 9, 2018 – Conference Call

Ohio Aerospace Day Planning Committee discussion.

Ohio Aerospace and Aviation Technology Committee

November 16, 2018 – Conference Call

Ohio Aerospace Day Planning Committee discussion.

Ohio Aerospace and Aviation Technology Committee

November 27, 2018 – Ohio Statehouse, Ground Floor, Room 018

The Ohio Aerospace and Aviation Technology Committee was called to order pursuant to the meeting notice at 10:14 a.m.

Attendance was taken and a quorum was present.

The first order of business was a report of the projects and work of the OAAC by Chairman Carlos Grodsinsky.

The second order of business was the discussion of the transition between 132nd General Assembly and the 133rd General Assembly.

- Pursuant to Ohio Revised Code (ORC) 122.98, the term of all members shall end on December 31, 2018. All members were encouraged to reapply following the appointment of legislative members by the Ohio Senate and Ohio House of Representatives.
- Pursuant to Ohio Revised Code (ORC) 122.98 the chairmanship shall shift from the Ohio Senate back to the Ohio House of Representatives. Members were informed that a chairman will be selected by the Speaker of the Ohio House of Representatives early in the 2019 calendar year.

The third order of business was the report of the Tiger Team by Project Opportunity Team Leader Adam Holmes.

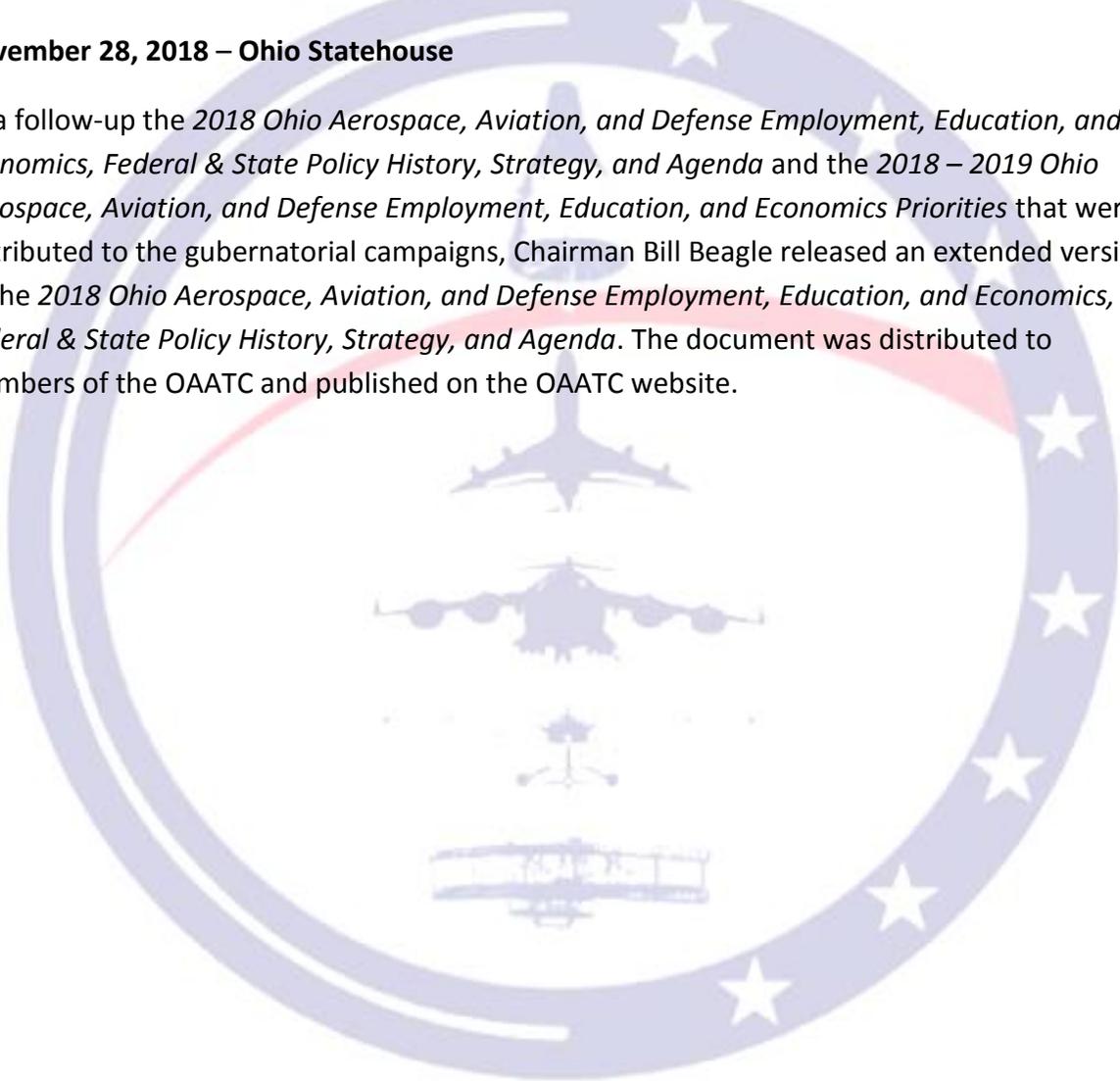
The fourth order of business was the discussion of Ohio Aerospace Day 2018.

The committee adjourned at 11:04 a.m.

Ohio Aerospace and Aviation Technology Committee Tiger Team

November 28, 2018 – Ohio Statehouse

As a follow-up the *2018 Ohio Aerospace, Aviation, and Defense Employment, Education, and Economics, Federal & State Policy History, Strategy, and Agenda* and the *2018 – 2019 Ohio Aerospace, Aviation, and Defense Employment, Education, and Economics Priorities* that were distributed to the gubernatorial campaigns, Chairman Bill Beagle released an extended version of the *2018 Ohio Aerospace, Aviation, and Defense Employment, Education, and Economics, Federal & State Policy History, Strategy, and Agenda*. The document was distributed to members of the OAATC and published on the OAATC website.





2018 Ohio Aerospace, Aviation, and Defense Employment, Education, and Economics, Federal & State Policy History, Strategy, and Agenda

Ohio has brought industry and university leaders together, as well as elected officials from across Ohio to form the Ohio Aerospace and Aviation Council (OAAC) and the Ohio Aerospace and Aviation Technology Committee (OAATC). Together, the OAAC and the OAATC are chartered to develop a strategy and framework in order to support, retain, and create jobs within Ohio's aerospace, aviation, and defense industries, including related Federal, academic, and non-profit installations and assets. The OAAC/OAATC adopted specific strategies, guided by the integration, engagement, and alignment of Ohio stakeholder interests, to rally those with a common vision and mission to advocate for, guide and integrate Ohio's aerospace and aviation industry.

Vision: Ohio – America's Leader in Global Aviation and Aerospace

Mission: Create opportunities in Ohio for economic growth, jobs, education, and to shape and grow the future of the Aviation and Aerospace Industries

The OAAC/OAATC with JobsOhio have validated Ohio's aerospace industry as one of Ohio's largest – directly employing over 100,000 full-time workers. Ohio has no other industrial sector in which its Federal facilities, industry, and academic institutions play as dominant a role in U.S. industrial production, export, research & development (R&D), and policy leadership as Ohio's aerospace industry. Consider the following:

- Ohio is a leader in aerospace manufacturing attractiveness¹
- Ohio is the undisputed leader in US Military aviation research & development²
- Ohio is the undisputed leading supplier to the world's major aerospace, aviation, and defense OEMs (ex. Boeing and Airbus)³
- Ohio offers unique test facilities and world-class R&D in emerging aerospace innovation areas: simulated space environments, hypersonics, hyperloop-mobility, aeronautics, materials, sensors, aerospace power and propulsion, aerospace medicine and human effectiveness, advanced manufacturing, and additive manufacturing

Current Strategies/Opportunities

Improve Ohio's aviation infrastructure to meet the global requirements of Ohio companies by establishing a dedicated aerospace staff position within the administration reporting to the Governor;

- Continue to unite Ohio under an aligned aerospace theme and strategy, focusing collective regional interests, and provide a face and focal point of Ohio's aerospace sector
- Support the industry development of Ohio Unmanned Aircraft Systems (UAS) and Personnel Air Vehicles (PAV) and an academic focus capitalizing on unique assets within the State to drive industry growth, i.e. Integration of Ground Radar to integrate UAS operations within National Air Space, and US33 Smart Corridor integration for UAS systems with DriveOhio autonomy strategies
- Leverage Ohio's dominant position in advanced materials R&D for direct application to hypersonics and next generation aerospace use
- Continue to provide state funding for university based R&D with aerospace and aviation centers of excellence, and the Ohio Federal Research Network to attract top talent

¹ [PwC 2017 Aerospace Manufacturing Attractiveness Rankings](#)

² [AFRL - HQ Dayton Ohio - WPAFB - Aero-space R&D](#)

³ https://jobsOhio.com/site/assets/files/2271/ohio_aerospace_2018.pdf



- Maintain and expand Ohio's position as a worldwide leader of cutting edge aerospace R&D, testing facilities and capabilities, i.e. hypersonic test facilities at AFRL, NASA GRC and Plum Brook Station, support the logistics transportation modifications from Mansfield airport to provide large test article transport to NASA Glenn Research Center Plum Brook Station
- Expand Ohio's aerospace supply network by supporting the expansion of Ohio's maintenance, repair, and overhaul (MRO) industry and support an MRO Center of Excellence to drive this expansion
- Develop a statewide initiative to provide greater focus and support for the retention and expansion of the Ohio aircraft power and propulsion development and manufacturing sector
- Develop and support a state-level Office of Government and Military Affairs reporting to the Governor to assure preparedness of regular military, national air guard, NASA, and other Federal installations associated with aerospace to secure against Base Realignment and Closure (BRAC) Federal initiatives
- Expand Ohio's DriveOhio initiative and assure an integrated focus on autonomous mobility solutions which include first and last mile UAS/PAV and aviation multi-modal connectivity with planned automotive strategies
- Support the national development of Air Traffic Reform, including the implementation, performance evaluation and testing of Next Generation (NextGen) technologies within Ohio commercial and general aviation airports
- Support development of the Ohio Unmanned Aircraft Systems (UAS) Industry through favorable regulatory policies to test and operate such systems with statewide pre-emption laws
- Assist in preparing Ohio's workforce to meet the in-demand job needs of the aerospace and aviation sectors through industry training partnerships and state based decision making for available Federal and state training initiatives
- Continue to maintain and improve Ohio's air service infrastructure aligned with NextGen Priorities Joint Implementation Plan
- Support programs and assets critical to the future of Ohio's primary Federal Aerospace and Defense facilities
- Leveraging Ohio's Federal and state aerospace and aviation research and development assets and support Ohio BOLD and other innovation cluster platforms
- Providing a mature general aviation tax exemption policy to drive aviation/UAV/PAV/MRO and other aircraft operation expansion
- Supporting STEM education from K-12 and state funded higher education programs aligned to industry needs
- Support Ohio Global Reach to Engage Academic Talent (G.R.E.A.T.) and other workforce and STEM education initiatives to facilitate policy, networking, and integration programs that keep aerospace and aviation academic talent in Ohio

One Ohio

The goal of the OAAC and the OAATC is to retain and expand the 100,000 direct jobs associated with Ohio's aerospace, aviation, and defense sectors. In developing their strategy, the OAAC/OAATC have benchmarked Ohio's advocacy efforts at the Federal and state levels, as compared to similar efforts by other states. It was found that Ohio's advocacy in support of these sectors is often conducted by regional partnership organizations, companies, and nonprofit organizations. Conversely, other major aviation and aerospace industry states benefit from aligned statewide advocacy to their Federal and state officials. To optimize Ohio's position, a framework supporting a One Ohio aviation and aerospace strategy has been developed to align our efforts and to serve as a call to ACTION of Ohio stakeholders. The OAAC/OAATC approach is to provide single points of contact with representation from all regional stakeholders resulting in a single inclusive industry agenda.



SECTION I: SUPPORT PROGRAMS CRITICAL TO THE FUTURE OF OHIO'S PRIMARY FEDERAL AEROSPACE AND DEFENSE FACILITIES

A. Annual National Defense Authorization Act, Budget Control Act and National Space Council

Joint Federal and State Request

Federal leaders are encouraged to work together on a balanced solution to the nation's fiscal challenges that allows for thorough consideration and funding of national defense priorities and next generation aerospace Research, Development, Test, and Evaluation (RDT&E).

The Budget Control Act (BCA) of 2011 and BCA Amendments⁴

The Budget Control Act of 2011⁵ mandated limits on National Defense discretionary base budget authority which indiscriminately required funding reductions to the Department of Defense budget over a ten year period commencing in 2013. While trimming of the defense budget may be necessary to reduce Federal budget deficits, it is essential that the future security of our nation not be compromised in the process. Due to this indiscriminate limit, it has negatively impacted and harmed the readiness of the U.S. military and was compounded due to operating for ten of the last 11 years under continuing resolutions of unpredictable duration.

Modifications in the Department of Defense spending should be based on thoughtful appraisal of the security threats to the nation and the future role our country intends to play in international relations, the contested domain of Space and increased threats of hypersonic weapons and falling behind in advanced technologies and cyber-attacks. While economic realities cannot be ignored, they are but one of the many factors that need to be considered in the development and funding of a national defense structure that adequately provides for the nation's security.

The indiscriminate Department of Defense Budget reduction process mandated by the Budget Control Act of 2011 does not provide opportunity for adequate consideration of the security challenges we face as a nation or the strategic alternatives necessary to address those challenges. We support the BCA amendments⁶.

Recommendations

Our Federal leaders are strongly urged to work together on a balanced solution to the nation's fiscal challenges that allows for thorough consideration and funding of national defense priorities and those priorities aligned to current and future changing threats. We support any amendment and/or direction that can provide for a more predictable and aligned strategic investment in RDT&E and the preparedness of our military to the new threats and that of the contested Space domain and cyber-attacks.

⁴ [The Defense Budget and Budget Control Act - frequently asked questions](#)

⁵ [Budget Control Act of 2011 - Wikipedia Page](#)

⁶ [The Defense Budget and Budget Control Act - frequently asked questions](#), Summary page - Bipartisan Budget Act of 2018 (P.L. 115-123)



B. Support retention of major Ohio aerospace and defense installations and industrial complexes at risk in future rounds of aerospace and defense consolidations and budget cutting

Joint Federal and State Request – Base Realignment and Closure (BRAC)

At the inception of the OAATC in the 131st General Assembly, Base Realignment and Closure (BRAC) was established as one of the five focus areas based on Ohio's military sectors connection and importance to Ohio's aerospace and aviation industries. This was a critical area of interest and priority for both the OAATC and the OAAC. At the beginning of the 132nd General Assembly, the Ohio House of Representatives preparing for a BRAC as early as 2019, created the 'BRAC and Military Affairs Task Force' (BMATF). The goal of the task force was to research the various Ohio military and NASA missions; assess strengths, weaknesses, and opportunities for missions; and provide recommendations on long-term sustainment of these installations, as well as processes to routinely and consistently ascertain and advocate for new opportunities.

The BMATF was stood up in August 2017. Its 12 members include military, community, and academic leaders, as well as legislators. This group reviewed all previous BRAC reports and inventories, visited 13 installations throughout the state, and interviewed numerous vital partners to come up with its recommendation. The culmination of recommendations and task force activities were released on 29 May 2018 and made available via the internet (**BRAC Taskforce Report**⁷). The primary recommendation of the committee has since been drafted into legislation and introduced in the Ohio House of Representatives as House Bill 696.

House Bill 696⁸ will establish the Office of Government and Military Affairs under the Governor. This office will be responsible for developing a facilities and installations strategy for Ohio and conduct a regular review of Federal installation strengths and weaknesses to include military value and facility conditions. Additionally, this office will work closely with the Department of Veteran Services and the Adjutant General to set up regular meetings and updates with military affairs committees across the state as well as visits to bases around the state to understand all mission sets. Perhaps its greatest purpose will be to advocate with legislators to secure funds during the operating and capital budgets to fund infrastructure and programs to increase the military value of Ohio's installations.

Given the redundant BRAC assessment task, the OAATC decided in 2017 to defer the focus on BRAC to the BMATF, and reform the committee based around three work groups (Education, Economic Development, and Advocacy). The OAATC fully supports the findings of the nine-month BMATF report.

⁷ [Ohio BRAC Task Force Report - Rep. Perales Released on 8/29/2018](#)

⁸ [Ohio House of Representatives Bill 696 summary](#)



Defense Base Realignment and Closure (BRAC)

The Trump Administration requested a BRAC in the 2018 Department of Defense Budget proposal of May 23, 2017⁹. On January 26, 2012, Defense Secretary Leon Panetta announced the Obama Administration's intention to request another round of base closures through the Defense Base Realignment and Closure (BRAC) process. This will continue to be a focus of the current administration and future presidential administrations.

Ohio is home to approximately 8,000 active duty military personnel, 25,000 civilian employees of the Department of Defense, and thousands of contractors who directly support our military bases. Of these, 27,000 are located on a single site – Wright-Patterson Air Force Base outside of Dayton – which is the largest single-site employer in Ohio. In addition, there are 43,000 Reservists and members of the National Guard in Ohio. Any of these jobs could be threatened by a base closure round. During the previous four BRAC rounds, three Department of Defense installations in Ohio were closed; 1991 Rickenbacker Air National Guard Base; 1993 Defense Information Technology Service Organization, Columbus Annex Dayton, 1993 Defense Information Technology Services Organization, Cleveland; 1993 Gentile Air Force Station (Defense Electronics Supply Center), Dayton; 1993 Newark Air Force Base. A BRAC round could also mean opportunity – those same BRAC rounds also reallocate missions and bring thousands of jobs into Ohio¹⁰.

Congressional approval is required to initiate a BRAC round. However, members of the delegation should be in contact with local military base supporters to begin coordinating efforts. During the last BRAC rounds, members of the delegation provided testimony during BRAC public hearings, contacted members of the BRAC commission, obtained essential data from the Department of Defense to support a community case, and helped publicly identify key BRAC issues.

Moreover, even in the absence of a formal BRAC, the Department of Defense Budget cuts and program realignments could place Ohio's major Department of Defense assets at risk. Examples of this include a proposed amendment by the Chairman of the U.S. House Armed Services Committee to the FY19 National Defense Authorization Act (NDAA) that would have impacted as many as 6,000 jobs at the Defense Supply Center of Columbus¹¹. It is critical to remain vigilant during the drafting and approval of the NDAA and actively assess and strengthen Ohio's bases so they are ready should formal or informal processes begin. Likewise, realignments and site selections for new missions could increase the state's defense assets.

Recommendations

Central to the State's BRAC efforts will be the protection of Wright-Patterson Air Force Base (WPAFB), which has by far the greatest at stake to lose. In that same token, WPAFB could have the largest potential wins for the state if work is consolidated there. Community leaders, led by the Dayton Development Coalition, are developing plans based on the previous BRAC efforts. All of Dayton has a stake in WPAFB, and as a result, can grow with mission expansion or suffer from losing missions

⁹ [DoD Releases FY 2018 Budget Proposal - press release, link to full budget within link](#)

¹⁰ [Ohio BRAC Task Force Report - Rep. Perales Released on 8/29/2018](#)

¹¹ [U.S. Congress Women Joyce Beatty - Statement - May 24th, 2018](#)



Joint Federal and State Request – NASA Glenn Research Center

Coordinate with local community development and major aerospace and defense organizations to develop strategies to ensure maximum state gains and minimal losses in future rounds of NASA consolidations and budget reductions.

NASA John H. Glenn Research Center and Plum Brook Station¹²

The National Aeronautics and Space Administration (NASA) John H. Glenn Research Center is located at Lewis Field, a 350-acre site adjacent to Cleveland Hopkins International Airport. NASA Glenn's physical plant includes more than 150 buildings that contain a unique collection of world-class test facilities. NASA Glenn also operates the 6,400-acre Plum Brook Station near Sandusky, Ohio, 50 miles west of Cleveland¹³. It specializes in large-scale tests associated with specialized test facilities and has special facilities that have safety risks associated with them and would be hazardous within the confines of the main campus. In a recent 2017 economic impact study by the Center for Economic Development of the Cleveland State University, NASA Glenn's current activities support over 7,000 jobs in Ohio and over 7,000 in Northeast Ohio generating \$123.7 million in local, state, and Federal taxes. These jobs generate an increase in labor income across the state by \$510.8 million. The largest occupational categories are scientists and engineers which drive innovation and support the advanced technology knowledge based economy of the state. NASA Glenn's activities in Northeast Ohio generate increased demand output valued at over \$1.42 billion for goods and services produced in the region and output at the State of Ohio of over \$1.48 billion¹⁴.

Recommendations

Coordinate with local community development and major aerospace and defense industrial organizations to develop strategies to ensure maximum state gains with minimal losses to employment at the NASA Glenn Research Center in future rounds of aerospace facility consolidations and budget reductions. Focus on supporting growth technologies and mission responsibilities being led by the center in physical and life science, power for space and more electrified aircraft, propulsion both air breathing and in-space electric propulsion, communications, materials and hypersonic testing.

Joint Federal and State Request – Aerospace and Defense Industrial Facilities

Coordinate with local community development and major aerospace and defense industrial organizations to develop strategies to ensure maximum state gains with minimal losses in future rounds of aerospace and defense consolidations and budget reductions.

¹² <https://www.nasa.gov/centers/glenn/about/testfacilities/index.html>

¹³ [Iryna Lendel, Jinhee Yun, The NASA Glenn Research Center: An Economic Impact Study Fiscal Year 2017, Maxine Goodman Levin College of Urban Affairs Cleveland State University](#)

¹⁴ [Iryna Lendel, Jinhee Yun, The NASA Glenn Research Center: An Economic Impact Study Fiscal Year 2017, Maxine Goodman Levin College of Urban Affairs Cleveland State University](#)



Major “At-Risk” Ohio Aerospace and Defense Industrial Facilities

As a result of the ongoing emphasis on defense expenditure, cost savings and reductions and facility consolidations, several major Ohio aerospace and defense industrial facilities are at risk of major employment reductions or potential out of state relocations. These include:

- The Joint Systems Manufacturing Center, (JSMC) Lima, Ohio: This center has long been tasked with the manufacturing and upgrading of the Army’s M1 Abrams battle tank. In 2011, the Army ceased its acquisition of new M1 Abrams battle tanks in anticipation of the development of a new line of tanks expected to be unveiled in 2017. Over the objections of the Army, the Congress approved \$255 million to upgrade dozens of M1s through 2014 and thereby sustain operation of the center. The future of the center and its jobs have been at risk over the years. The extension of the Abrams upgrade program and a new vehicle has given new life to the Lima operations requiring a resurgence and need for skilled labor like welders and other skilled trades.^{15,16}
- Boeing Guidance Repair Center, Central Ohio Aerospace and Technology Center (COATC), Heath, Ohio: The Boeing Company is in year 13 of a 15 year contract for maintenance, repair, and overhaul of inertial navigation and guidance systems for aircraft and missile systems at the Heath, Ohio, Boeing Guidance Repair Center. This location is Boeing’s largest physical presence in Ohio, a state in which the company subcontracted with over 490 vendors for \$8.2 billion worth of business in 2011. The Air Force customer re-competed the contract and Boeing Strategic Defense and Missile Systems was awarded the follow on Indefinite Delivery Indefinite Quantity contract through 2021¹⁷. The repair center was privatized in 1996 when before this it was known as the Newark Air Force Base¹⁸
- Air Force Primary Standards Laboratory (AFPSL) Flow Lab Modernization, Central Ohio Aerospace and Technology Center (COATC), Heath, Ohio: The largest of the Pentagon’s standards laboratories, the Air Force Primary Standards Laboratory (AFPSL) is outsourced to Bionetics Corporation and has been managed as a privatized lab since Privatization-in-Place in 1996. Bionetics, on behalf of the U.S. Air Force, provides world class metrology and calibration services with 52 labs operating in 19 different metrology disciplines. The privatized model has been a success. However, competing labs in other states have added systems that are similar to those at the AFPSL. The lab needs updates to retain its competitiveness and, long-term, be retained in Ohio. Most notably, planning is underway for modernization and upgrade of the flow lab capabilities at the AFPSL¹⁹
- Air Force Institute of Technology (AFIT), Wright Patterson Air Force Base, Ohio: AFIT is the Air Force’s Graduate School of Engineering and Management as well as its Institution for Technical Professional Continuing Education. It awards masters and doctorate degrees and provides

¹⁵ <https://www.forbes.com/sites/lorenthompson/2018/02/14/tanks-to-ohio-how-trumps-industrial-policy-shop-leverages-pentagon-spending-to-create-jobs/#11cfb63a177d>

¹⁶ <https://www.limaohio.com/news/252124/joint-systems-manufacturing-center-seeks-new-employees-as-tank-production-increases>

¹⁷ <https://www.dispatch.com/content/stories/business/2015/07/06/boeing-to-maintain-guidance-systems-for-u-s-missiles.html>

¹⁸ <https://www.boeing.com/news/frontiers/archive/2003/may/mainfeature.html>

¹⁹ <http://www.hnlcpa.com/news/ohioaerospacedaybriefing2008.pdf>



continuing education for thousands of students each year. In 1997, the Air Force Secretary decided to close AFIT, a decision which was later reversed. The 2005 Defense Base Closure and Realignment Commission considered then rejected a proposal to close the school. As recently as 2012, Air Force education leaders began plans to close the school. Closure of the AFIT would diminish the Air Force's education and research capacity

Recommendations

Coordinate with local community development and major aerospace and defense industrial organizations to develop strategies to ensure maximum state gains with minimal losses in future rounds of aerospace and defense consolidations and budget reductions.

C. Support the NASA Glenn Research Center (GRC)

Joint Federal and State Request

Support programs of critical importance to the viability of the NASA Glenn Research Center (GRC), specifically:

- Federal FY'19 Appropriation Requests
- State and Federal support for the re-opening of the Plum Brook hypersonic test facility

Federal FY'19 Appropriation Requests

Specific appropriation accounts that are critical to the health of the center and the region are Deep Space Exploration Systems, Exploration Research and Technology, Low Earth Orbit (LEO) and Spaceflight Operations, Science, Aeronautics, and Education. Within these accounts, NASA Glenn provides the following key NASA leadership:

Deep Space Exploration Systems

GRC is responsible for the first element to be launched as part of the Lunar Orbital Platform, known as Gateway. The first component will be the Power and Propulsion Element (PPE), used to maneuver the rest of the Platform with a core competency of NASA Glenn - Solar Electric Propulsion. The PPE will also contain another GRC competency – advanced space communications. GRC leads the integration of the European Service Module, which provides power and propulsion to the Orion crew capsule. GRC's Plum Brook Station is home to some of the world's most capable environmental test facilities for large-scale spaceflight hardware. At Plum Brook, Orion and several Commercial Crew providers will expose their spaceflight hardware to vibro-acoustic and thermal vacuum testing, and test fire their engines in a vacuum. In addition, GRC supports Explorations Systems Development, and advances capabilities in the International Space Station (ISS) research through fire safety, fluids characterization, human health evaluations, as well as exploration technologies.

Exploration Research and Technology LEO and Space Flight Operations

GRC leads the agency in technical expertise developing technology in electric power, spacecraft propulsion, advanced materials, and human research enabling safe and effective operations in various space environments. GRC leads the development for two technology demonstrations, solar electric propulsion, which will enable on-orbit transfer and accommodate increasing power demands for satellites, and the development and integration of cryogenic fluid technologies for the evolvable cryogenics project. GRC also leads sub-kilowatt electric propulsion, extreme environment solar power, rapid analysis & manufacturing propulsion technology, and composite technology for exploration technology development



projects. In addition, GRC provides technical oversight and management for the SBIR/STTR awards aligned with the GRC's technical expertise, and program management support for the Space Technology Research Grants program. GRC also conducts and supports the Human Research Program (HRP), develops GRC-based capabilities through the Center Innovation Fund, supports Technology Transfer activities, and provides strategic guidance to the Office of the Chief Technologist from the GRC's perspective.

LEO, Spaceflight Operations and Science

For LEO & Spaceflight Operations, GRC supports ISS, advanced communications capabilities for the Space Communications and Navigations (SCaN) program, and the Rocket Propulsion Test Program. GRC will continue to be responsible for the operation and exploration-related technology development and demonstrations as part of ISS Research in physical sciences, including operation of combustion and fluids research facilities. GRC provides SCaN radio frequency spectrum management, space communication technology development and commercial service strategy, and specific tests and experiments in space communications to drive commercial communication mission use. In addition, GRC manages the test stands for Rocket Propulsion Testing, located at Plum Brook Station, which support rocket engine components and full scale tests in a vacuum. GRC supports Planetary Science research and technology through advanced radioisotope power system development and ion propulsion development.

Aeronautics

GRC supports the Aeronautics strategic vision with significant contributions to multiple projects across the Aeronautics Research Mission Directorate (ARMD). Specifically, GRC leads the development of advanced aircraft propulsion technologies and systems, including revolutionary systems such as electric propulsion for fixed wing and vertical lift vehicles that reduce fuel consumption, noise, and emissions which enable the U.S. industry to maintain and advance its global leadership. GRC's research addresses communication technologies and related integration of Unmanned Aircraft Systems (UAS) in the national airspace. In addition, GRC conducts fundamental hypersonic research which will enhance development of tools and methods to more efficiently design future hypersonic vehicles. The GRC also manages critical ground test capabilities to demonstrate new technologies and investigate aircraft and engine icing.

In order to advance innovation through NASA exploration missions, aeronautics and continued utilization of commercial services and public-private partnerships, robust and properly funded technology development, exploration and Low Earth Orbit support of exploration programs will continue to be necessary to accomplish our nation's exploration and aeronautics goals.

Recommendations

- Full funding of the Trump Administrations FY 19 funding requests should be supported
- Support the addition of funding for NASA education programs
- Support the stable and continued support of aeronautics funding and to increase funding for aeronautics research in next generation electric propulsion for aircraft

Deep Space Exploration System Development

A new Multi-Purpose Crew Vehicle and Space Launch System are essential for human exploration of space beyond low earth orbit and maintaining the leadership of the United States in human exploration. GRC is providing significant contributions to the development of the Multi-Purpose Crew Vehicle and the Space Launch System. Of major importance is GRC's leadership responsibility for the integration of the



European Service Module, development of the Universal State Adapter (USA) and payload shroud for the Space Launch System (SLS). The USA payload shroud development is a high visibility effort and is large in terms of both funding and workforce utilization. GRC is responsible for the first element of the Lunar Orbital Platform known as Gateway deep space exploration. This first element and Gateway is a critical mission for the use of the SLS and comprises a critical GRC responsibility. The next generation in space propulsion is a critical system to the first phase of the Gateway development as part of the Power and Propulsion Element (PPE).

Full scale environmental testing is critical to the successful development of spaceflight hardware. The NASA Plum Brook Station Space Power Facility (also known as the Space Environmental Testing Facility) provides qualification and acceptance environmental testing for space vehicles and should be fully utilized for Exploration Systems Development and other NASA missions.

Recommendations

- Support the continued funding of the SLS
- Direct NASA to fully utilize Plum Brook and the Space Power Facility for Exploration Systems and encourage cross-agency utilization by Air Force Space Command, DOD, NRO, industry, and others
- Support the construction of a runway at Plum Brook to facilitate hardware transportation to optimize the use of Plum Brook and continue the effort that was accomplished by supporting the logistics work done to facilitate transport of large test articles from the Mansfield Airport

Research and Technology, LEO and Spaceflight Operations, and Science

GRC develops technology in electric propulsion, space craft propulsion, advanced materials, and human research enabling safe and effective operations in space. This includes developing technology and science in the physical and life science areas. Solar electric propulsion and development of cryogenic fluid management and systems are critical to the success of future deep space missions and operations. In addition, the development of sub-kilowatt electric propulsion is a critical driver for next generation LEO/MEO and small satellite operations also supporting Gateway needs. GRC provides operations and advanced communications capabilities for SCaN program, for LEO and for the first element PPE. GRC will continue to be responsible for ISS research in physical sciences including operations of the Fluids and Combustion Facility (FCF).

Full utilization of the ISS for life and physical sciences, human research, and technology development and demonstration is essential to provide a major return on the significant U.S. and International investments in this unique facility. With the limited lifetime of the ISS and the time needed to develop scientific payloads and complete the science investigations it is imperative to sustain and commit to funding for life and physical sciences.

Based on its current contributions to the ISS, GRC is the NASA Center best positioned to maximize the capability for physical science research, human research, and technology development on the International Space Station. In particular, developing and manifesting new inserts for the GRC-developed Combustion Integrated Rack and the Fluids Integrated Rack already on the ISS is critical for the full utilization of the ISS research capabilities.



Recommendations

- Support the FY 19 Budget for the exploration research and technology development and the utilization of LEO assets like the ISS
- Support the FY 19 Budget for LEO and Spaceflight operations and support increase to ISS operations to support transitions to research and technology development during ISS transition
- Support the FY 19 Budget for science and technology development and support stable funding for power system development including radioisotope systems and power systems for ion propulsion
- Support for and continued funding of Electric Propulsion (EP) technology development and the demonstration and flight implementation of new EP technology developed by GRC
- Funding should be supported for the continued utilization of ISS and for continued support through the transition to a commercially operated but significantly utilized ISS by NASA physical and life science research

Aeronautics

Supporting NASA's Aeronautics Research Mission is a major effort at GRC and involves significant utilization of GRC's workforce and major facilities. GRC is a performing center in projects including the Aviation Safety, Airspace Systems, Fundamental Aeronautics (the largest aeronautics project which includes subsonic fixed wing, subsonic rotary wing, supersonics, and hypersonics research), Aeronautics Test, and advanced aircraft propulsion technologies and systems including electric propulsion and more electrified aircraft. Airspace Systems directly addresses the air traffic management needs of Next-Gen.

Recommendations

- Support continued stability and long term commitment to NASA aeronautics funding
- Congress and Ohio's Federal representatives should support NASA's 10 year strategic plan in aeronautics
- Support increased GRC and Ohio participation in the NextGen efforts to accelerate research and development enabling NextGen capabilities and integration of autonomous vehicles in the National Air Space

State and Federal Legislation and Agency Request

Continued support to optimize the use of Plum Brook Station (PBS) facilities and for construction of a runway at Plum Brook Station.

GRC's 6,400-acre Plum Brook Station near Sandusky is home to very large-scale, one-of-a-kind aerospace test facilities including:

- The world's largest space environment vacuum chamber
- The world's only facility capable of testing full-scale upper-stage launch vehicles and rocket engines under simulated high-altitude conditions
- Cryogenic test facilities
- Hypersonic wind tunnel

Utilization of these facilities by the world's rapidly growing public and private space launch and satellite industry is hampered by inadequate air transportation to the PBS test site. Supporting the modification of transportation routes from the Mansfield Airport has provided relief and increased utilization for Plum Brook Station. However, extremely expensive and easily damaged space launch systems and satellites currently must be transported to the site by truck from distant airports in Cleveland and Mansfield, exposing them to great risk of damage and contamination. Construction of a runway at Plum Brook



Station would allow for the secure transit of large scale articles for test and verification procedures directly to PBS site by air and support optimal use of this one of a kind test facility.

Recommendations

State and local officials should support construction of a runway at Plum Brook Station to enable secure transit of large scale articles for test and verification procedures directly to PBS by air.

D. Support Wright-Patterson Air Force Base

Joint Federal and State Request

Support programs of critical importance to the viability of the Wright-Patterson Air Force Base (WPAFB) specifically:

Federal Appropriation/Legislation Requests

- Funding for WPAFB Acquisition Management Complex, Phase 5
- Continued funding of the Air Force Institute of Technology (AFIT)
- State actions in support of the Ohio Adjutant General's Infrastructure and Capabilities

Acquisition Management Complex, Phase 5²⁰

Demand for physical space is growing in Wright-Patterson's Life Cycle Management Center (AFLMC)²¹ because of an increased need to improve Department of Defense acquisition programs, the hiring of more government employees to perform work currently done by contractors ("insourcing"), and increased Foreign Military Sales. Wright Patterson AFB has seen steady growth of personnel across the acquisition programs and particularly in the Foreign Military Sales environment. Additional building space is required to support the continual growth.

To meet the space needs, the Air Force developed plans for the 5th phase of the Acquisition Management Complex (AMC). The AMC was initiated in the 1980s as a series of 10 buildings to consolidate the Aeronautical Systems Center (ASC) acquisition workforce. These are the workers who handle design, contracting, and other acquisition functions for aircraft and related weapons systems. To-date, the Air Force has completed phases 1, 2A, 2B, 3, 4A, and 4B of the AMC. The pace of construction was accelerated through a combination of Congressional inserts and support from the Congressional delegation.

The Acquisition Management Complex, Phase 5, is a secure, modern, flexible building equipped with the latest information systems technology. It will contain administrative space and special purpose space. Constructing this building is a critical element toward ensuring that Wright-Patterson AFB is a receiver site – not a donor site – if there is another round of base closures ("BRAC"). Without this building, work could migrate to other locations with available space, even without a BRAC.

²⁰ <https://www.wpafb.af.mil/Portals/60/documents/Index/environmental/161208-1-AMC-Phase-V-Draft-Final-EA-5Dec16.pdf?ver=2016-12-08-090226-387>

²¹ <https://www.wpafb.af.mil/aflcmc/>



Recommendations

Include construction budget at the next available opportunity in the President's Budget Request for the Air Force Military Construction Program for the construction of the Acquisition Management Complex, Phase 5, at Wright-Patterson Air Force Base.

Air Force Institute of Technology (AFIT)²²

The Air Force Institute of Technology (AFIT) is the Air Force's Graduate School of Engineering and Management, offering specialized, defense-related masters and doctoral degrees and Technical Professional Continuing Education. The total number of AFIT faculty, staff, and resident students is approximately 1,200. (AFIT students are full-time, paid workers – for economic development purposes they are equivalent to a job slot.)

However, AFIT's importance to WPAFB and to the Air Force is even more significant than this number suggests. AFIT is an essential pillar of the Dayton Region's "brain power". It employs world-renown scientists in fields such as nuclear engineering, unmanned aerial systems, cyberspace, and directed energy. AFIT works with other organizations on the base, adding to the strengths of WPAFB as a technological, research-oriented military base. Because so many up and coming Air Force personnel attend classes at AFIT, it serves as an introduction to WPAFB and Ohio for future Air Force leaders.

In fiscal year 2010, AFIT granted 289 masters degrees and 31 doctoral degrees. AFIT functions as both a fully-accredited academic and research institution and as an Air Force unit that supports the warfighter. As this role is not easily understood, AFIT has recently been threatened with closure. In the mid 1990s, the Air Force decided to close the school – then reversed the decision. The 2005 Defense Base Closure and Realignment Commission also considered closing AFIT. Additional provisions should be instituted in the 2019 National Defense Authorization Act (NDAA).

- Funding: AFIT needs sufficient operational funding to maintain quality education and top instructors
- Student Load: As every Air Force officer or enlisted personnel who attends AFIT full-time needs to be temporarily replaced while the individual is at school, there is pressure to cut the student load
- Construction: AFIT has identified a need for a new research laboratory building to replace buildings with inadequate facilities for sensitive scientific experiments (\$16 Million in Fiscal Year 2010)

Recommendations

Support sufficient funding, student load, stature, and military construction for the Air Force Institute of Technology at Wright-Patterson Air Force Base.

Support the Ohio Adjutant General's Infrastructure and Capabilities

If Ohio is to retain its aviation infrastructure and assets it is important that these assets be modernized so as to be consistent with Ohio and Department of Defense missions. Federal and State officials should

²² <https://www.afit.edu/>



support efforts by the Adjutant General of Ohio to ensure that Ohio's military personnel and facilities are modernized.

Recommendations

- State Legislature leadership should meet with the Chief of the National Guard Bureau and Army and Air Force Service Secretaries in Washington at earliest point of convenience to highlight Ohio capabilities
- Governor should meet with Secretary of Defense to promote the military capabilities across Ohio to encourage the consolidation of other missions into the state



SECTION II: SUPPORT DEVELOPMENT OF THE OHIO UNMANNED AERONAUTICAL SYSTEMS INDUSTRY

A. Target Ohio as place to test UAS, PAV, eVTOL and complex autonomous systems in parallel with ground AV/CV systems through DriveOhio.

Joint Federal and State Request

Federal Agency Actions

- Work with the FAA and NASA to enable Ohio to perform enhanced operations for UAS, PAV, eVTOL and other advanced systems such as; Operations Beyond Visual Line of Sight (BVLoS), above 400' feet above the ground and weigh more than 55lbs
- Enable operations in the lower altitude airspace through the FAA and NASA to facilitate advanced aerial data collection, movement of goods and people

Federal Legislative Actions

- Secure necessary legislation and funding to advance joint efforts in Ohio by the Department of Defense (working through the Air Force Research Laboratory), the FAA, and NASA exploring technical issues related to the integration of UAS in the National Airspace System (NAS)
- Secure Federal funding to aid in development of autonomous systems including UAS and connected vehicles
- Secure Federal funding with mobile radar for Ground Based Detection and Avoidance (GBDAA) system to operate anywhere in Ohio
- Review the Code of Federal Regulations CFR Title 14 Part 135²³ for operating requirements: commuter and on demand operations and rules governing persons on board such aircraft to present changes to the FAA and enable the adoption and implementation of new autonomous eVTOL technologies in Ohio

State Legislative and Administrative Actions

- Support the Ohio Adjutant General's Office in implementing UAS Airspace in Ohio, in conjunction with the Air Force, FAA, NASA, State of Ohio, and DriveOhio UAS Center
- Continue support the UAS Center in the advancement of UAS and the management of the lower altitude airspace in Ohio and continue to fund GBDAA and Route 33 Smart Corridor UTM
- Begin research in a statewide preemption proposal for the management of the lower altitude airspace to present the case to the FAA to ensure the State of Ohio is able to enable advanced UAS operations

Background

Dayton Region community and economic development groups have targeted UAS research, development, and manufacture as a top long-term goal for regional economic growth and job creation. The Air Force and the State of Ohio have partnered 50/50 on a \$5 million²⁴ UAS traffic management range (GBDAA system) to test complex UAS operations in a 200sq mi area located at Springfield Beckley Airport. The GBDAA system is scheduled to be fully operational by Q4 2018. Additionally, the Ohio Department of Transportation is creating a UAS Traffic Management (UTM) system over the Route 33 Smart Corridor

²³ https://www.faa.gov/about/initiatives/atos/135_certification/

²⁴ <http://www.govtech.com/fs/news/Ohio-Wants-to-Lead-in-Flying-Taxi-Research.html>



which stretches from Dublin to West Liberty where the Transportation Research Center is located. This project will pave the way for package delivery any personal air vehicles (PAV's) to operate in Ohio. Ohio has invested in great capabilities for testing UAS and PAV.²⁵

Research and Infrastructure Development

One of the keys to better utilizing unmanned aircraft is to ensure they will not pose a threat to other aircraft traveling in the area. Therefore, the Federal Government currently restricts most drone usage to areas within the line of sight of the operator. These research projects will make the development of an air traffic safety system a priority to support future operations such as advanced data collection, ground traffic monitoring, package delivery, and air taxi services, including how systems and UAS/PAV operations can be commercialized in Ohio sooner.

Ground-Based Detect-and-Avoid

Through a partnership with the Air Force Research Laboratory at Wright Patterson Air Force Base, the State of Ohio has invested \$5 million into the development of a ground-based detect-and-avoid radar system at the Springfield-Beckley Municipal Airport. The system gives the airport the unique capability of flying drones beyond the operator's visual line of sight.

Unmanned Aircraft Systems Traffic Management

The Ohio UAS Center also recently launched a 3-year, \$5.9 million²⁶ research project to study and manage drone traffic in the lower altitude airspace along the Route 33 Smart Mobility Corridor. This study will allow activities like advanced traffic monitoring in conjunction with the state's current fixed-location traffic camera system. The project will use sensors and communication devices to ensure the drones will not collide with each other or with manned aircraft, such as small planes and helicopters, which also use the lower altitude airspace.

Private sector giants from Amazon to Uber to UPS are investing heavily in drone research to find ways unmanned aircraft can improve the efficiency and quality of the services they provide. The State of Ohio's investment in the infrastructure and research needed to allow drones to operate remotely and safely is second-to-none in the nation.

²⁵ http://www.dot.state.oh.us/Divisions/Planning/SPR/Research/RFP/Documents/2019-RFPs/2019-03_UnmannedAircraftTrafficMgmt.pdf

²⁶

<http://www.dot.state.oh.us/Divisions/Planning/SPR/Research/reportsandplans/Lists/Final%20Reports%20All/Date%20Posted.aspx>

<http://www.govtech.com/fs/news/Ohio-Wants-to-Lead-in-Flying-Taxi-Research.html>



UAS Flight Operations

The Ohio UAS Center (UASC) performs flight operations primarily for the Ohio Department of Transportation/DriveOhio and acts as a shared service for other governmental entities. The UASC creates policy and sets procedures for flight operations for the State of Ohio for small UAS. This will be a continuous process as the regulatory and technological landscape changes and as part of DriveOhio's mission to lead the future of transportation with the development, testing and deployment of smart mobility technologies. By creating pathways for these alternative transportation methods transportation system reliability, increase system resiliency, and improved highway capacity in critical corridors are envisioned.

UAS Research & Development

ODOT/DriveOhio's UAS Center currently has \$2.1 million²⁷ in research projects with the University of Cincinnati (UC) directly supporting ground transportation infrastructure. Additionally, UC has pioneered advanced technology that allows UAS platforms to perform advanced operations and data analyses. Technologies such as streaming video feeds in real-time into Ohio Emergency Management Agency (EMA) and into the ODOT traffic management center, as well as, UAS that can operate continuously for several hours and at the same time collect real-time traffic flow statistics.

Recommendations

- Unmanned Aeronautical Systems (UAS) is projected to be a \$114 Billion industry and create over 100,000 jobs by 2025. Securing additional funding for GBDAA system and other advanced programs will enable the potential to bring manufacturing, testing, and training of UAS. The UAS industry is expected to create thousands of jobs in the U.S. within five to (10) years
- Enable the lower altitude airspace in Ohio for testing new aircraft technologies attracting major investments from DOD, Amazon, Google, Uber, and others
- Partner with FAA on next generation air traffic management
- Work with other states to align UAS UTM and Urban Air Mobility efforts
- Establish best practices in the UAS, PAV and eVTOL operations
- Monitor and inform our legislature on potential regulatory changes that may have a negative impact to Ohio potential UAS industry
- Guide and inform our legislature on productive changes that will be in Ohio's best interests

²⁷

<http://www.dot.state.oh.us/Divisions/Planning/SPR/Research/reportsandplans/Lists/Final%20Reports%20All/Item/displayifs.aspx?List=47f3581d-f21c-403b-9358-fea0b008772b&ID=602&Web=3bc523de-c756-4eeb-9b6c-f24c0435d45e>



SECTION III: PREPARE EMPLOYEES TO MEET THE NEEDS OF OHIO'S AEROSPACE, DEFENSE, AND BUSINESS AVIATION SECTORS

A. Support workforce development legislation to meet the needs of Ohio's Aerospace, Defense, and Business Aviation sectors

Joint Federal and State Request

Support Federal legislation that will ensure the availability of a highly-skilled Ohio labor force that meets the needs of the aerospace, aviation, and defense sectors.

Federal Agency and Legislative Actions

- NASA and the Department of Defense Student Internship Programs and innovative preparatory programs for aerospace students
- K-12, Undergraduate, and Graduate Educational Outreach Programs
- NASA Space Grant Program
- NASA Graduate Research Fellowship Program
- Federal Funding For University Aerospace R&D
- Department of Defense R&D Funding Stabilization
- Simplify and minimize Federal regulations associated with job training dollars and block grants allowing Ohio to focus funds on best regional requirements associated with aerospace and aviation sector needs
- Research and Development Tax Credit
- H1 Visas

State Legislative and Administrative Actions

- Marketing Program
- Ohio Space Grant Program
- Statewide Internship, Cooperative Education Programs and Innovation Next Generation Aerospace Workforce Development
- Support state funding of modern undergraduate labs with remote access experiments
- Support state funding for statewide aerospace capstone design competitions
- Support the establishment of regional job-training partnerships aligned with aerospace and aviation assets and industry clusters

NASA and Department of Defense Student Internship Programs

NASA and the Department of Defense Science, Technology, Engineering, and Mathematics (STEM) student internship programs provide vital opportunities to provide experiential learning to students pursuing STEM degrees. Internships have demonstrated impact on retention of students in STEM majors, where attrition prior to graduation is a serious problem.

An Innovation in Preparing the Aviation/Aerospace Workforce

The Battelle Center for Science, Engineering, and Public Policy at The Ohio State University has created and piloted a new career preparation program for students from any discipline who aspire to join the aviation and aerospace industries. These industries are global, dynamic, complex, and competitive, so



graduates will need to be systems-thinkers and life-long learners who are capable of creative, collaborative work, communicating across cultures and disciplines, and making decisions within an ethical framework. These skills are better learned outside the classroom, in work, play, coaching, relationships, innovation-challenges, and workshops — experiences which the Battelle Center's novel Student Community of Practice and Engagement (SCOPE) Program integrates together for the aviation/aerospace industries' specific needs.

Recommendations

- As deficit reduction measures are pursued, Congress and the Trump Administration should work to minimize the impact of these measures on NASA and DOD STEM student internship programs
- Congress should invest in institutionalizing the Battelle Center's innovative SCOPE workforce preparation program in order to support the growth of a large, diverse talent pool trained to contribute faster to aviation and aerospace missions

K-12, Undergraduate, and Graduate Educational Outreach Programs

Aerospace and Aviation agencies have unique opportunities to excite and inspire the next generations of scientists, technologists, engineers, and innovators and strengthen U.S. competitiveness. Early engagement of students in the excitement and wonder of space exploration and flight contributes directly to the retention and success of students in STEM disciplines, STEM majors, and STEM jobs. The pipeline of students entering the fields of aviation and aerospace must be expanded to meet the growing need for workers in all elements of aviation and aerospace. This can best be done by aggressively supporting programs structured to achieve this objective.

Recommendations

- Congress and the Trump Administration should provide support to K-12, undergraduate, and graduate educational outreach programs to the nation's aerospace and aviation agencies
- The State of Ohio must aggressively pursue programs at the K-12 level that support an expanding pipeline. Examples of such programs that meet this need are:
 - Air Camp---An innovative, hands on, week long, overnight camp that employs the rich aviation assets of the Dayton region and inspires students to pursue advance education and careers in aviation
 - Project Lead The Way (PLTW) ---An industry sponsored national program that provides STEM curricula for K-12. The PLTW aerospace program is currently employed in only a few schools across Ohio
 - Several local school districts and career centers have aviation specific programs
- The several university undergraduate and graduate level programs that contribute to an expanding pipeline should be supported and expanded where appropriate

NASA Space Grant Program²⁸

The Space Grant program administered through the National Aeronautics and Space Administration (NASA) directly supports the recruitment, retention, and support of students pursuing higher education in STEM disciplines that are critical to our nation's aerospace competitiveness. The Ohio Space Grant

²⁸ <https://www.nasa.gov/offices/education/programs/national/spacegrant/about/index.html>



Consortium of 23 institutions of higher education has provided over \$4 million in scholarships and fellowships to over 500 undergraduate and 150 graduate students to-date, and has impacted students from every Ohio Congressional District.

Recommendations

Congress should continue to provide strong support for the Space Grant Program administered through NASA.

NASA Graduate Research Fellowship Program

NASA's new graduate student research fellowship program encourages students to pursue careers in key engineering specialty areas important to our country's future in aerospace.

Recommendations

Congress should strongly support NASA's new graduate student research fellowship program, and increase funding for this program over the next several years.

Federal Funding for University Aerospace R&D

First-rate university research opportunities attract talented students into graduate STEM studies. University R&D dollars provide a fourfold return by supporting graduate students, generating knowledge, creating innovation opportunities for small businesses around universities, and building the next generation of talented engineers.

Recommendations

The Federal Government should invest in aerospace research infrastructure and increase R&D funding to universities.

Department of Defense R&D Funding Stabilization

The Trump Administration and Congress should stabilize the Department of Defense R&D funding at a sustainable and robust percentage of the DOD's overall budget. This will create a stable innovation economy for the Aerospace and Defense industry and foster more exciting and secure long-term career prospects for top quality engineering talent considering entering the industry. A more stable long-term industry environment offering opportunities for individuals to perform cutting edge work will enhance the Aerospace and Defense sector's ability to recruit and retain the best and the brightest scientists, engineers, and technicians.

Recommendations

The Administration and Congress should stabilize Department of Defense R&D funding at a sustainable and robust percentage of the Department's overall budget such as the three percent recommended by the American Institute of Aeronautics and Astronautics.



Research and Development Tax Credit

Congress should pass legislation to make the R&D tax credit permanent – providing stability to corporate fiscal policies and thereby extending a critical technology and engineering research environment that attracts the best and brightest into the technology and engineering fields.

Recommendations

Congress should pass legislation to make the R&D tax credit permanent.

H1 Visas

The Trump Administration and Congress should increase the number of H1 Visas available to highly-skilled foreigners, thus allowing an adequate supply of foreign students who were trained at U.S. universities to remain and contribute to U.S. needs.

Recommendations

The Trump Administration and Congress should increase the number of H1 Visas available to highly-skilled foreigners.

State Agency and Legislative Actions

Aerospace Marketing Program

The State of Ohio, through joint effort between JobsOhio, the Ohio Department of Development, and the Ohio Board of Regents, should support and participate in the development of effective marketing materials that communicate the range of training and education resources available to employers within Ohio at Ohio's institutions of higher learning and through state-supported programs.

Recommendations

The State of Ohio should support and participate in the development of effective marketing materials that communicate the range of aerospace training and education resources available in Ohio.

Ohio Space Grant Program²⁹

Through the Ohio Board of Regents, Ohio should provide strong support for the Ohio Space Grant Program administered through NASA as it directly supports the recruitment, retention, and support of students pursuing higher education in STEM disciplines that are critical to the nation's aerospace, aviation, and defense competitiveness. The Ohio Space Grant Consortium of 23 institutions of higher education has provided over \$4 Million in scholarships and fellowships to over 500 undergraduate and 150 graduate students to-date, and has impacted students from every Ohio County.

Recommendations

Ohio should provide strong support for the Ohio Space Grant program administered through NASA.

²⁹ <http://www.osgc.org/>



Statewide Internship, Cooperative Education Programs and Innovative Next Generation Aerospace Workforce Development

The State of Ohio should continue to support implementation of strategically-selected, sector-focused, aerospace and aviation vocational programs and statewide internship and cooperative education programs designed to provide students with work experience at Ohio employers and Federal Laboratories and educational institutes such as the Air Force Research Laboratory, the Air Force Institute of Technology, and the NASA Glenn Research Center, beginning as early as the summer prior to their entry to enrollment in higher education in a related discipline at an Ohio institution of higher learning. Aerospace, aviation, and defense should represent such a strategic area of investment. This will enable Ohio graduates to graduate with a significant amount of work experience, and better able to serve the needs of Ohio employers. This will also contribute significantly to retention of Ohio students in STEM disciplines and allied fields since STEM work experience is a powerful factor for retention of students in STEM majors up to graduation. The Battelle Center for Science, Engineering, and Public Policy at The Ohio State University offers an innovation course, “Solving Real Public Agency Problems” that permits students from any discipline to grapple with actual, complex problems facing aviation and aerospace agencies and industries in their missions. Agencies and companies interact directly with students who bring creative approaches to problem-solving.

Recommendations

- The State of Ohio should support the implementation of strategically-selected, sector-focused, aerospace and aviation focused vocational programs and statewide internship and cooperative education programs designed to provide students with work experience at Ohio employers and Federal Laboratories and educational institutes such as the Air Force Research Laboratory, the Air Force Institute of Technology, and the NASA Glenn Research Center
- Congress should invest in institutionalizing Battelle Center’s “Solving Real Public Agency Problems” course so that more aviation and aerospace agencies and companies can innovate at low-risk and low-cost with the next generation workforce

State Funding Modern Undergraduate Labs with Remote Access Experiments

Support higher education efforts to provide outstanding learning through hands on experience in labs with modern equipment and the latest software. Funds are needed to bridge the gap generated by declining state funding and capping state university tuition. Undergraduate labs equipped with modern equipment and software offer students unique learning experience through:

- Operation of modern equipment and use of modern software
- Learning about safety measures and requirements

Recommendations

Federal and state officials should develop competitive funding opportunities for developing and updating undergraduate laboratories with modern equipment and software. Support competitive proposals that demonstrate how to effectively:

- Integrate the experimental learning into the educational program
- Share the educational benefits with other institutions through remote experiments



UAS Initiatives and Capabilities at Ohio Academic Institutions³⁰

Over 25 Ohio higher learning institutions have active UAS programs and projects in work. These opportunities attract talented students into graduate STEM studies and prepare Ohio's youth to be engaged participants in a critical emerging industry. University R&D dollars provide a fourfold return by supporting graduate students, generating knowledge, creating innovation opportunities for small businesses around universities, and building the next generation of talented engineers.

Recommendations

- The State Government should invest in UAS programs at all state higher learning levels, support inter-scholastic cooperative research, increase academic/industry partnerships, and increase R&D funding to state higher learning institutions

Fund Statewide Aerospace Design Competitions

Capstone Design Competitions enhance student learning through:

- Multidisciplinary project designs under realistic technical, economical, and environmental constraints
- Teamwork, project planning, and technical presentations
- Learn diverse approaches through watching other competing teams' presentations

Recommendations

- Reinstate Capstone design competitions through funding from Ohio Federal Laboratories

³⁰ Chancellor John Carrey, Ohio Department of Education. *UAS Initiatives and Capabilities on Institutions Campuses*. April 2018.



SECTION IV: MAINTAIN AND IMPROVE THE NATION'S AIR SERVICE INFRASTRUCTURE AND THE ATTRACTIVENESS OF OHIO AS AN AIR SERVICE LOCATION

A. Ensure stable funding for maintenance of the Nation's air service infrastructure and implementation of the Next Generation Air Transportation System (NextGen).

Joint Federal and State Request

- Federal and State Officials should work with the private sector and local communities to retain and expand domestic and international commercial air services at airports serving Ohio's major metropolitan areas
- Federal and State Officials should support the addition of an Ohio NextGen operational performance location
- Federal and State Officials should work to support all major Ohio Airports (i.e. Cleveland, Columbus, and Cincinnati) and implement the NextGen Data Communications program to allow pilots and air traffic controllers to communicate enhanced air traffic information
- Support the funding provided in the FAA Reauthorization Act to enable continued deployment of the NextGen air control system, including development of a demonstration project at one of Ohio's airports

Maintaining Ohio's Commercial Air Services and Extending International Service

Efficient and competitive air service benefits all of Ohio. Retaining and expanding highly sought international airline routes will enable Ohio to effectively compete in the global economy. With an annual economic impact of \$4 billion, the United Airlines Cleveland Hopkins International Airport hub, Ohio's only remaining international air service hub, is critical to the Ohio's economy, economic development, leisure travel, and tourism.

Recommendations

Federal and State Officials should work with the private sector and local communities to retain and expand domestic and international commercial air services at airports serving Ohio's major metropolitan areas.

Federal Legislative Request

Federal Aviation Administration Modernization and Reform Act of 2012³¹

The Federal Aviation Administration (FAA) provides services and funding essential to the commerce of the Nation, the safety of the public and critical investments in the Nation's air service infrastructure.

Passage of the FAA Modernization and Reform Act of 2012, provides \$63.4 billion to fund the agency through 2015. This new law includes approximately \$11 billion towards the FAA's proposed NextGen air traffic control system.

³¹ <https://www.congress.gov/bill/112th-congress/house-bill/658/text>



NextGen is a wide ranging transformation of the entire national air transportation system in order to meet future demands and avoid gridlock in the sky and in the airports. NextGen moves away from legacy ground-based technologies to a new and more dynamic satellite-based technology. These new capabilities, and the highly interdependent technologies that support them, will change the way the aviation system operates, reducing congestion, and improving the passenger experience.

The President and Congress are to be commended for passage of a long-term funding act that will allow investment in the nation's air service infrastructure, and most particularly NextGen, to proceed in an efficient and businesslike manner.

Recommendations

- Federal Legislators should continue to support of funding for the modernization of the nation's air infrastructure through deployment of the NextGen air traffic control system and exercise appropriate oversight of the FAA to ensure that the NextGen system is deployed in a timely and efficient manner
- Ohio's Congressional Delegation along with FAA officials, State and Local elected offices should support an Ohio NextGen Demonstration project at one of Ohio's General Aviation Airports
- The Ohio State University Airport, for example, could be the site for such NextGen Demonstration and tie it to an educational program on NextGen operation for their Flight School

Oppose the \$100 Per-Flight Fee as Detrimental to Ohio's Commercial and General Aviation Industries

A bipartisan group of members from both houses of Congress sent letters to President Obama opposing his advocacy of a \$100-per-flight fee on turbine-powered aircraft that fly in "controlled airspace". The current system of ticket and fuel taxes is an appropriate mechanism for the industry to fund its use of our national air system. Moreover, the aviation industry is one of the most highly taxed industries in our economy. Now is certainly not the time to consider additional taxing measures when the industry is struggling to recover from the recent economic downturn.

Recommendations

- Ohio's Congressional Delegation should oppose the \$100 per-flight fee as detrimental to Ohio's Commercial and General Aviation industries, and urge President Trump to support this opposition



SECTION V: LEVERAGE OHIO'S FEDERAL AND STATE AEROSPACE AND AVIATION RESEARCH AND DEVELOPMENT ASSETS

A. Leverage Ohio's Unique Aerospace R&D and Testing Capabilities

State Request

Actively market Ohio's aerospace R&D and testing capabilities including industry and university assets to the global aerospace industry through JobsOhio

Leveraging Ohio Aerospace R&D and Testing Capabilities

Ohio is extremely fortunate to have a large number of organizations performing or managing world-class aerospace R&D, including:

- Air Force Research Laboratories at Wright-Patterson Air Force Base
- NASA Glenn Research Center
- General Electric Aviation
- Battelle Memorial Institute
- The University of Ohio System
- Ohio Edison Technology Centers

Further, as indicated earlier, many of these installations have unique, world-class R&D and testing capabilities. Attracting use of these facilities by the global aerospace industry would benefit Ohio in many ways, including:

- The creation of jobs in the aerospace R&D sector
- Generation of revenues for the support of Ohio's R&D providers, particularly in the government and non-profit research centers
- Enhancement of Ohio's capabilities and attractiveness as an aerospace research and manufacturing center

To encourage the utilization of Ohio's R&D and testing capabilities, Ohio should actively market JobsOhio, Ohio's aerospace R&D and testing capabilities, including industry and university assets, to the global aerospace industry.

Recommendations

- JobsOhio should actively market Ohio's aerospace R&D and testing capabilities, including industry and university assets, to the global aerospace industry



Glossary of Acronyms

AFB – Air Force Base

AFIT – Air Force Institute of Technology

AFPSL – Air Force Primary Standards Laboratory

AFRL – U.S. Air Force Research Laboratory

AMC – Acquisition Management Complex

ARMMD – Aeronautics Research Mission Directorate

ASC – Aeronautical Systems Center

BCA – Budget Control Act

BMATF – BRAC and Military Affairs Task Force

BRAC - Base Realignment and Closure

BVLoS – Beyond Visual Line of Sight

COATC – Central Ohio Aerospace and Technology Center

DOD – Department of Defense

DOT – Department of Transportation

EMA – Emergency Management Agency

EP – Electric Propulsion

eVTOL – Electric Vertical Take-Off

FCF – Fluids and Combustion Facility

FAA – Federal Aviation Administration

FY – Fiscal Year

GBDAA – Ground Based Detection and Avoidance

GRC – NASA Glenn Research Center

GREAT – Global Reach to Engage Academic Talent

HQ - Headquarters



HRP – Human Research Program

ISS – International Space Station

JSMC – Joint Systems Manufacturing Center

LEO – Low Earth Orbit

MEO – Medium Earth Orbit

MRO – Maintenance, Repair, and Overhaul

NAS – National Airspace System

NASA – National Aeronautics and Space Administration

NDAA – National Defense Authorization Act

NextGen – Next Generation

NRO – National Reconnaissance Office

OAAC – Ohio Aerospace and Aviation Council

OAATC – Ohio Aerospace and Aviation Technology Committee

ODOT – Ohio Department of Transportation

PAV – Personal Air Vehicles

PBS – NASA Plum Brook Station

PLTW – Project Lead the Way

PPE – Power and Propulsion Element

RDT&E – Research, Development, Test and Evaluation

R&D – Research and Development

SCaN – Space Communications and Navigations

SCOPE – Student Community of Practice and Engagement

SLS – Space Launch System

STEM – Science, Technology, Engineering, and Mathematics

UAS – Unmanned Aircraft Systems

UASC – UAS Center



Ohio Aerospace &
Aviation Technology
Committee

Ohio

Aerospace &
Aviation Council

USA – Universal State Adapter

UTM – UAS Traffic Management

U.S. – United States

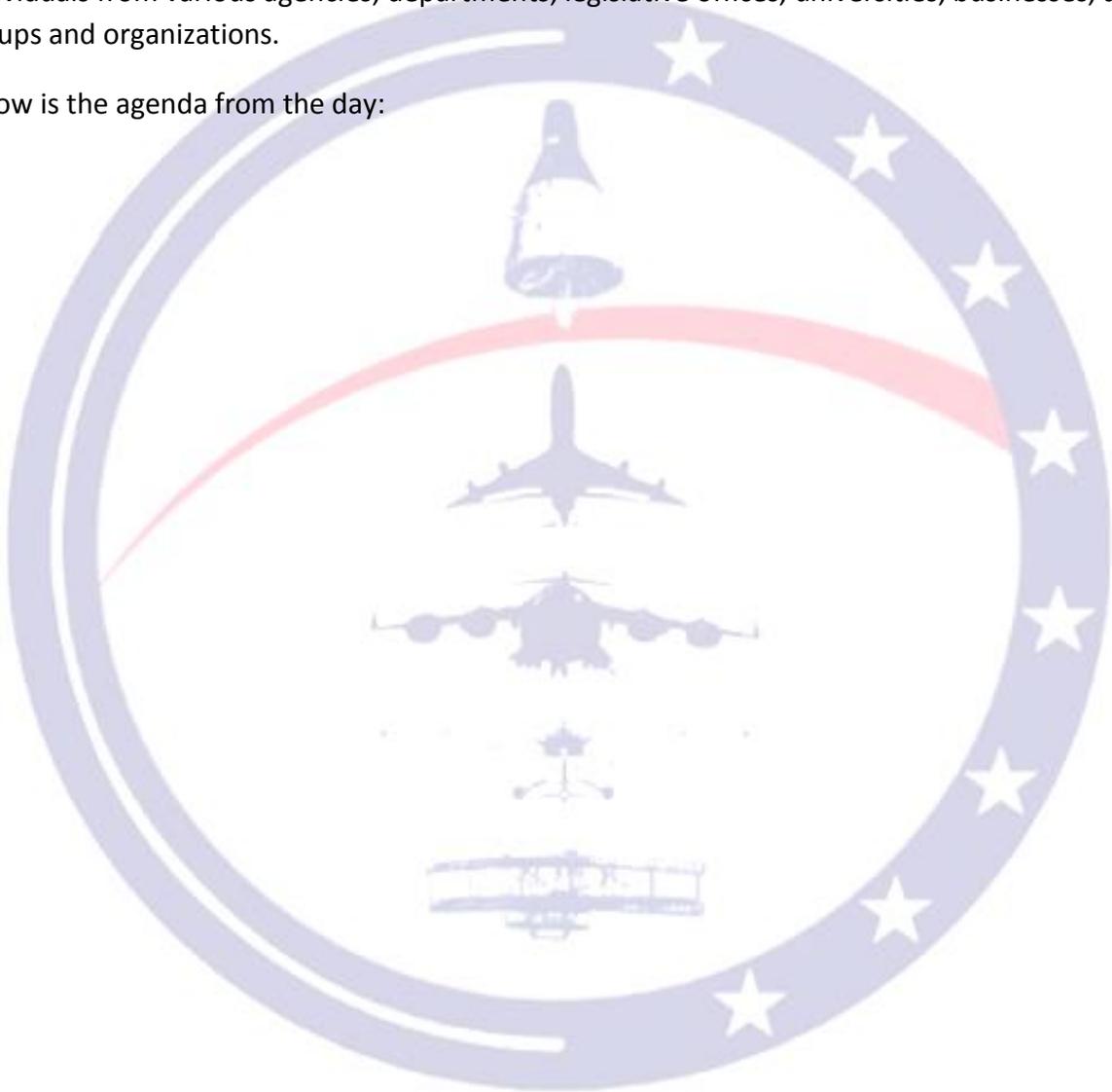
WPAFB – Wright Patterson Air Force Base

Ohio Aerospace and Aviation Technology Committee

December 5, 2018 – Ohio Statehouse, 1 Capitol Square, Columbus, Ohio 43215

Chairman Bill Beagle, in coordination with Chairman Carlos Grosdsinky of the OAAC hosted Ohio Aerospace Day 2018. The event was an outstanding opportunity for statewide networking with the aerospace and aviation community. The event was attended by approximately 200 individuals from various agencies, departments, legislative offices, universities, businesses, and groups and organizations.

Below is the agenda from the day:



The Ohio Aerospace and Aviation Technology Committee
& Ohio Aerospace and Aviation Council
Present
Ohio Aerospace Day
December 5, 2018
Ohio Statehouse, Columbus, Ohio
Agenda

- 8:00 – 9:00 a.m.: Registration (**Statehouse Atrium**)
- 9:00 – 11:00 a.m.: Hearing/Meeting with Caucus (**Senate Finance Hearing Room**)
- 1: (9:05-9:25) OAATC Report to Audience (**Dr. Carlos Grodsinsky - OAAC Chair/Senator Beagle**)
 - 2: (9:30-9:55) Impact to Economic Development (**Dr. John Sankovic - OAI President**)
 - 3: (10:00-10:25) Workforce Development (**Dr. Christina Bloebaum - Dean KSU Aeronautics and Eng**)
 - 4: (10:30-10:55) Advocacy/Call to Action (**Jim Barna with Fred Judson & Rich Granger– Drive Ohio**)
 - 5: (11:00-11:10) Ohio National Guard Aviation Update (**Major General Mark Bartman**)
- 11:10 – 11:25 a.m.: Networking/Break
- 11:25-11:45 Introduction of Exhibitors (Michael Johanson – OAD Co-Chair)
- 11:45 – 1:45 p.m.: Lunch/keynote (**Statehouse Atrium**) (Facilitator Carlos Grodsinsky - OAAC Chair)
- 11:45-12:15 Keynote Speech (**Mike Hawes– Lockheed Martin Orion Program Manager**)
 - 12:15-12:20 Panelists Introduction (**Carlos Grodsinsky - OAAC Chair**)
 - 12:20-12:30 Policy/Regulation (**State Senator Bill Beagle - OAATC Chair**)
 - 12:30-12:40 Opportunities (**Glenn Richardson – Jobs Ohio**)
 - 12:40-12:50 Workforce (**Ryan Burgess –Ohio Office of Workforce Transformation**)
 - 12:50-1:00 Research (**Dennis Andersh – OFRN**)
 - 1:00-1:10 International/Investment (**Peter Lengyel - Safran USA**)
 - 1:10-1:20 Education (**Meyer (Mike) Benzakein - Assistant VP for Aerospace & Aviation, OSU**)
 - 1:20-1:30 Resiliency (**Jim Free – Former NASA Executive, Peerless Small Business**)
 - 1:30-1:45 Moderated Panel Forum – **Moderator: Carlos Grodsinsky**
- 1:45 – 2:45 p.m.: Reception/Networking (**Statehouse Atrium**)
- 2:00-2:10 Networking Message - Incoming Lieutenant Governor Jon Husted**
- 2:45 – 3:30 p.m.: Executive Committee Wrap Up (Council Only)

Ohio Aerospace and Aviation Technology Committee

December 12, 2018 – Conference Call

Ohio Aerospace Day Planning Committee wrap-up discussion.

