

Ohio Aerospace and Aviation Technology Committee (OAATC)



**Annual Report
2016**

Letter from the Chairman

When we issued the annual report of the Ohio Aerospace and Aviation Technology Committee last year we were but a fledgling committee, only 4 months out from our first full meeting. In that report we set goals to unite Ohio's too often disparate aerospace and aviation community in order to promote and grow the industry upon our state's rich heritage.

Now, as we issue our second annual report, I am proud to announce that we have made great strides in that direction. It brings me pleasure to say with confidence that the following achievements would not have been possible without the work of the OAATC. Based on recommendations made by the Committee, an additional \$12 million dollars was secured in the biennial for airport improvements, which supports the infrastructure and safety of Ohio's extensive airport network. Ohio's airports are instrumental in attracting new business to Ohio and it is important that we maintain and enhance them. The OAATC, in conjunction with the Ohio Aerospace and Aviation Council, also hosted the first annual Aerospace Day at the Statehouse on October 6th, 2015. This event brought together leaders in the aerospace community from all over the state to dialogue on how they can speak with one voice to promote the Ohio aerospace industry.

As part of its efforts to brand Ohio as the preeminent place to do business in aerospace, the OAATC recommended and brought to fruition HCR 8, which passed in October 2015. This resolution repudiated Connecticut's claim that Gustave Whitehead was first in flight, and thus preserved the legacy of the Wright brothers against those who wish to tarnish it. Upon recommendation by the committee I also introduced HB 386, which would add a depiction of the Wright Flyer to the Ohio seal. This bill passed unanimously through the House State Government Committee in February. Similar bills have been introduced several times in the past, but HB 386 has made it further than any of them. I and the OAATC will continue to push for a floor vote for HB 386 so that we may show to the nation that Ohio still holds, and reveres the unique place in aviation history that the Wright brothers secured for it.

Though we have made great strides, there is still much to do. In continued efforts to brand Ohio, the committee is pursuing a plan to establish an Ohio Aviation Hall of Fame. Upon recommendation of the Workforce Development workgroup, we will be working to implement STEM programs in more schools across Ohio. We are working with Project Lead the Way, a national non-profit that develops STEM curricula, to ensure that Ohio students are given skills and opportunity to enter fruitful careers in the aerospace industry. The industry support group has also done extensive research into tax initiatives that could benefit Ohio companies. Each year aviation companies lose out on millions of dollars on aircraft purchases, maintenance, and upgrades because our tax climate is not favorable to aircraft purchasers. The industry support

work group is recommending and ready to support legislation that implements a “fly away” tax exemption, something that already exists in 30 other states. This will make Ohio even more competitive with other states and help to draw aviation business to our companies.

I look to the future with great hope for Ohio’s aerospace industry. The OAATC has proven that it is an effective instrument to get industry leaders communicating and collaborating. These leaders have begun to align their objectives with each other, and Ohio is reaping the benefits. With continued efforts this community will become even more unified and be able to take the industry to new heights that we have only dreamed of.

Respectfully,

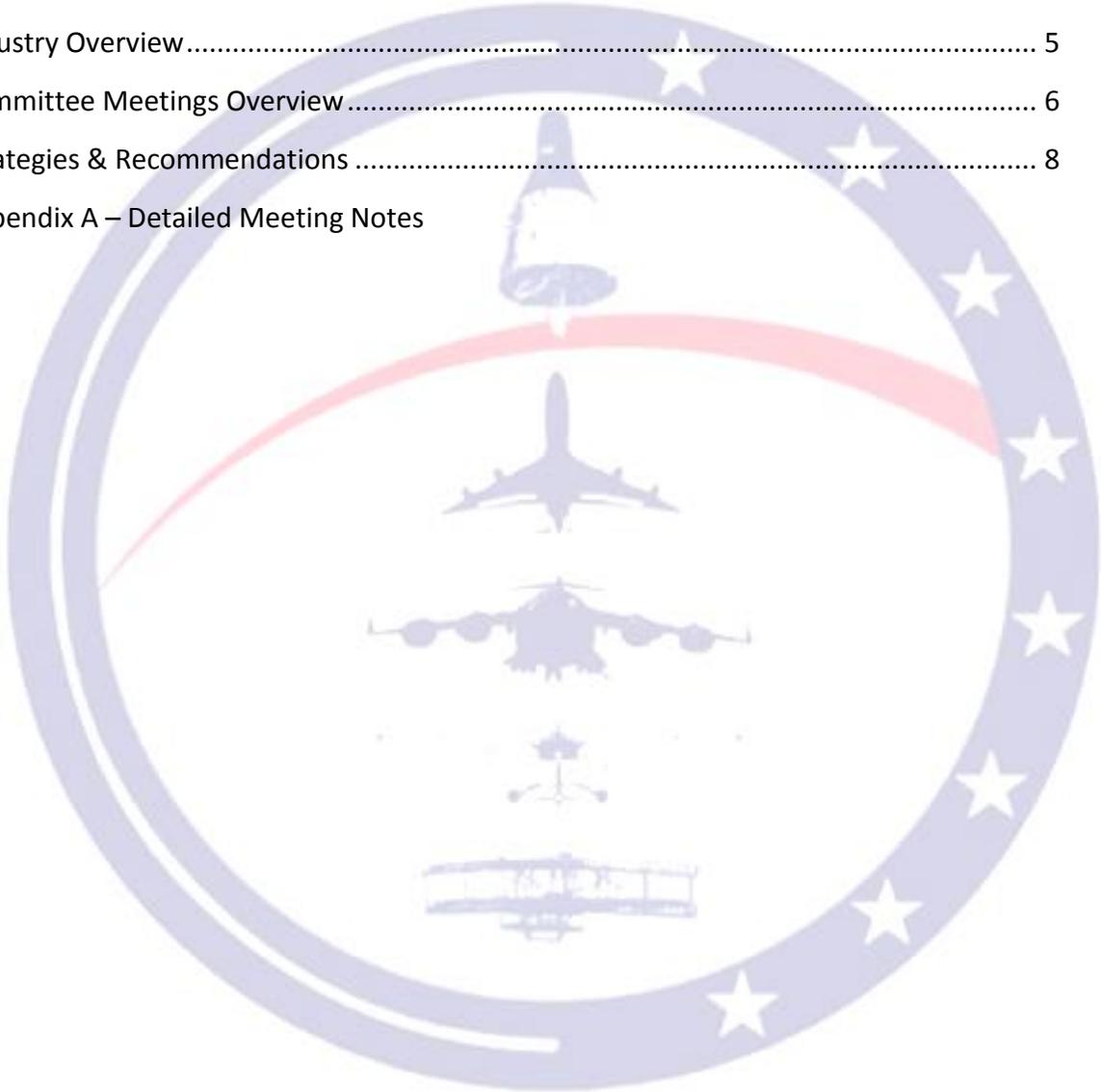


Representative Rick Perales
Chairman, Ohio Aerospace and Aviation Technology Committee
73rd Ohio House District



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Committee History

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 William G. Batchelder and Senate President Keith Faber appoint the six legislative members to the OAATC.

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

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

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

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 lead.

October 6, 2015 – OAATC hosts 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 leads. The University of Dayton Research Institute and Bob Doyle from the Triumph of Flight project testify to the committee.

December 9, 2015 – OAATC meets and invites partner agencies such as the OAAC, 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 hosts an informal committee meeting for workgroup leads to prioritize recommendations for the rest of the year.

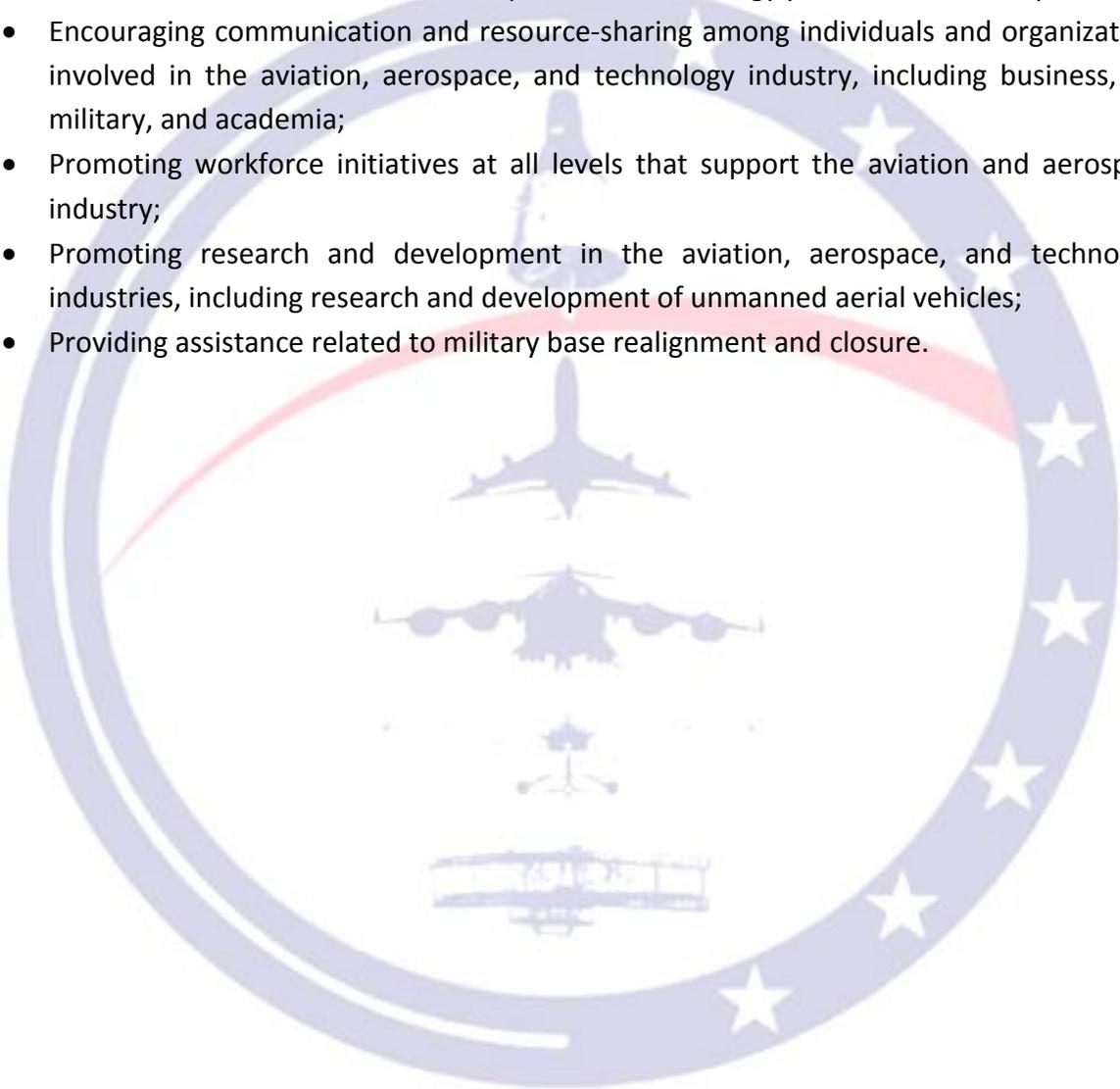
May 11, 2016 – OAATC meets to hear updates from partners such as the Ohio Federal Military Jobs Commission and the National Aviation Heritage Area. Relevant legislation is also discussed, and workgroup updates are given.

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.

Committee Charge

According to the enabling language of HB 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, the 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.



Committee Membership

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

General Assembly Members:

- Representative Rick Perales (R-Beavercreek) – Chairman
- Representative Nan Baker (R-Westlake)
- Senator Bill Beagle (R-Tipp City)
- Representative Sean O’Brien (D-Bazetta)
- Senator Joe Schiavoni (D-Boardman)
- Senator Joe Uecker (R-Miami)

Public Members:

- Tony Bailey – Spirit Aeronautics
- Mark Brown – Mark Brown Consulting LLC
- Mike Heil – Ohio Aerospace Institute
- Jay Jabour – Wright “B” Flyer Inc.
- John Leland – University of Dayton Research Institute
- Susan Louscher – University of Akron
- Maureen McFarland – Kent State University
- Paul Orkwis – University of Cincinnati
- Jeffery Rolf – Parker Hannifin
- Vincent Russo – Aerospace Technologies Associates
- Ron Shroder – Frontier Technology Inc.
- Terry Slaybaugh – Dayton International Airport
- Robert Tanner – NetJets Inc.
- David Williams – The Ohio State University
- Carlos Grodsinsky – ZIN Technologies, Inc.

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

Focus Areas

Focus areas were also adopted at the April 22, 2015 meeting. The following five primary focus areas are meant to reflect the broadest categories that need to be studied by the committee in small informal workgroups:

- **Outreach and Branding**
 - Lead – Tony Bailey
- **Workforce Development**
 - Lead – Vince Russo
- **Technology Development**
 - Lead – Paul Orkwis
- **Industry Support**
 - Co-Lead – Ron Shroder
 - Co-Lead – Tony Bailey
- **Federal Installations Support**
 - Lead – Jay Jabour

Industry Overview

Ohio's Aerospace and Aviation Industry Quick Facts

- 41,000 full-time employees statewide
- 591 businesses statewide
- \$7.37 billion gross state product (GSP)
- \$109,775 average wage per worker
- Number 1 ranked supplier state to Airbus and Boeing¹

Over \$10 billion is invested annually into engineering **research and development** in Ohio, of which a significant portion is aerospace related.¹ 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. In addition to these facilities there are numerous industry leaders, state universities, and research institutes throughout the state that specialize in aerospace and aviation technologies. 45 Ohio colleges and universities currently offer programs supporting aerospace and aviation. According to the US Bureau of Labor Statistics, there are 4,850 aerospace engineers working in the state.

Manufacturing accounts for 17% of Ohio's Gross Domestic Product (GDP), in part because Ohio is the top supplier state to both Boeing and Airbus. According to the US Bureau of Labor Statistics, over 12,000 workers are employed within aircraft engine and parts manufacturing sectors alone.

A market analysis by The Teal Group projects that annual worldwide **Unmanned Aerial Systems** (UAS) production will rise from \$4 billion to \$14 billion in the next ten years.² A 2013 study by the Association for Unmanned Vehicle Systems International (AUVSI), forecasts that the UAS industry will have a national economic impact of \$13.6 billion in the first three years after it is integrated into the National Airspace System, and create over 100,000 new jobs in the US by 2025.³ The Federal Aviation Administration is currently working on this integration, which will unleash the UAS market to become a dynamic force in the United States. Ohio is positioned to capture \$2.1 billion in economic activity from this market and over 2,725 new jobs by 2025.³ The authors of the AUVSI study note that these numbers could be even greater, "states that create favorable regulatory and business environments for the industry and the technology will likely siphon jobs away from states that do not."³

¹ Courtesy of JobsOhio

² Phil, Finnegan. *Press Release: UAV Production Will Total \$93 Billion*. 2015. Accessed on June 10, 2016.

<http://www.tealgroup.com/index.php/teal-group-news-media/item/press-release-uav-production-will-total-93-billion>

³Jenkins, Darryl, and Vasigh, Bijan. *The Economic Impact of Unmanned Aircraft Systems Integration in the United States*. 2013. Accessed on June 10, 2016. <http://www.auvsi.org/auvsiresources/economicreport>

Meetings Overview

The following is a brief overview of the Ohio Aerospace and Aviation Technology Committee's (OAATC) meetings since the Chairman's Report. For more detailed notes on the activities of each committee meeting, please refer to Appendix A.

OAATC Meeting in Brief – 10/6/2015

- The committee hosted its annual Aerospace Day in partnership with the Ohio Aerospace & Aviation Council (OAAC). Ohio Aerospace Day 2015 served to highlight, promote, and unify Ohio's rich aerospace industries.
- The committee also held a luncheon with panelists representing NASA Glenn Research Center, Wright-Patterson Air Force Base, and industry leaders, including Airbus and Boeing.
- Workgroup leads updated the committee at the regular formal meeting.
- The Ohio Aviation Association presented a proposal to change Ohio aviation fuel taxes from sales to an excise, and to distribute the increased revenue to airport improvements.
- NextGen, the Ohio/Indiana UAS Center, and JobsOhio also testified.

OAATC Meeting in Brief – 11/18/2015

- The committee met for a formal meeting to discuss workgroup updates from each of the 5 focus areas.
- Bob Doyle of the Triumph of Flight project and Jessica Orr from the University of Dayton Research Institute testified to the Committee.

OAATC Meeting in Brief – 12/9/2015

- The Committee met to discuss member appointments and the status of relevant legislation.
- Bryan Smith from the NASA Glenn Research Center and Mike Hripko from Youngstown State University testified to the Committee.
- Partner Updates from the OAAC and the Ohio Aerospace Institute (OAI) were given to the Committee.
- Workgroup leads stated their visions and goals for 2016.

OAATC Meeting in Brief – 2/24/2016

- The OSU Flight Team presented their nationally distinguished aviation program award to the Committee.

- Dave Deskins from the Greene County Career Center testified to the Committee.
- Partner updates from the OAAC, OAI, and JobsOhio were also provided.
- Workgroup leads provided updated recommendations to the Committee.

OAATC Meeting in Brief – 5/11/2016

- Senator Uecker is welcomed as the newest legislative member of the committee.
- The legislative members of the committee voted to appoint Carlos Grodsinsky as the newest public member, filing a vacancy that was left in December 2015.
- C.D. Moore provided information on the Grand Opening Regional Working Group's efforts to promote the grand opening of the 4th Hanger at the National Museum of the United States Air Force on June 8th, 2016.
- Colleen Ryan, Dennis Andersh, and Marty Kresh provided updates on the work of the Ohio Federal Military Jobs Commission and the Federal Research Network
- Workgroup leads provided their updated recommendations to the Committee.

OAATC Meeting in Brief – 6/23/2016

- The committee held a field meeting at NASA Glenn Research Center, showcasing the aerospace and aviation industry in Northeast Ohio.
- Representatives from NASA Glenn Research Center, ZIN Technologies, Meggitt Aircraft Braking Systems, Ohio Aerospace Institute, Parker Hannifin, Stofiel Aerospace, Event38, and Dronewerx testified on their organizations and on the challenges facing the aerospace industry.
- Members of the OAATC and guests toured the NASA Glenn Research Center facilities.

Recommendations & Strategies

The following descriptions represent each of the working groups' top priorities and strategies developed during the past year:

Outreach and Branding

- Lead – Tony Bailey

The intent of the Outreach and Branding work group is to:

1. Brand Ohio as a nationally renowned location for the aerospace and aviation industry
2. Build support for aerospace and aviation within the state
3. Market Ohio's aerospace and aviation industry
4. Increase aviation tourism

Detailed Recommendations & Strategies:

1. OAATC Director of Marketing

In order to promote Ohio's aviation industry and brand Ohio as an attractive location for more aviation related businesses, we recommend the creation of a Director of Marketing position with support and funding to dutifully take on the action of dedicated marketing for Ohio's aviation industry. The Director of Marketing would be tasked with managing the OAATC website and making it a hub for aerospace and aviation news. The Director would also collaborate with other organizations such as the Ohio Aerospace and Aviation Council, JobsOhio, and the Ohio Aviation Association to ensure effective communication within the aerospace industry, and to promote aerospace initiatives across the state.

2. Ohio Aviation Hall of Fame

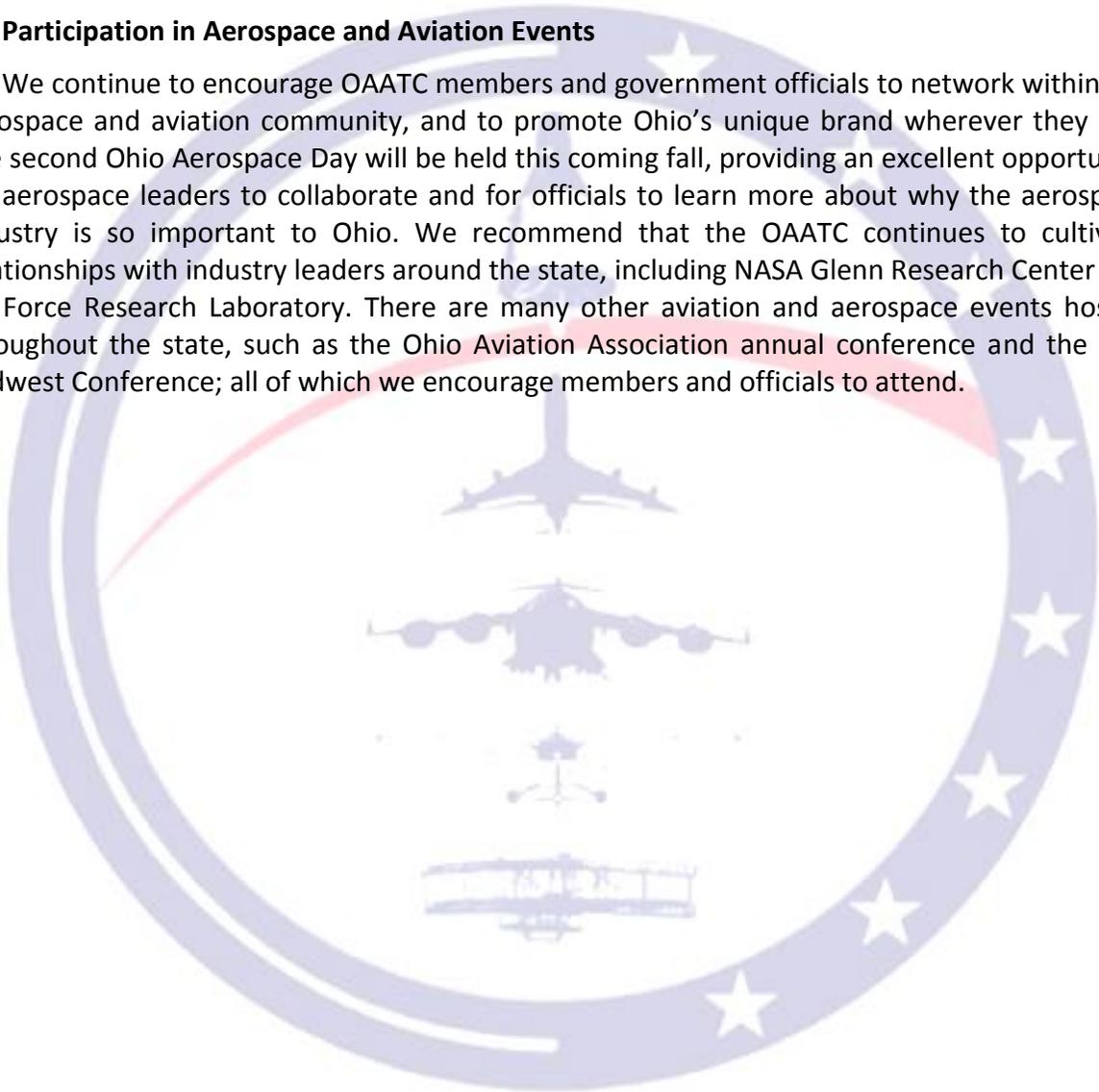
As part of the promotion of Ohio's aviation industry and the adoption by the state of the birthplace of aviation, we recommend the creation of the Ohio Aviation Hall of Fame and Learning Center, in collaboration with industry partners for funding and support. Most people do not realize that Ohio does not have a state hall of fame, because the National Aviation Hall of Fame (NAHOF) is located in Dayton, Ohio. We are fortunate to be able to host the NAHOF, but the creation of an Ohio centric Hall of Fame is also important to highlight the unique place that our state holds in aviation history. It would give Ohio the opportunity to showcase its famous aviators and to set them apart from other American aviators. The inventors of the airplane, the first American to orbit the Earth, and the first man on the moon all hail from Ohio. A state hall of fame would allow us to celebrate these facts, and to show the nation that Ohio is the place for innovation, especially in aviation.

3. Adoption of HB 386 – Depiction of Wright Flyer on the State Seal

In continued dedication to Ohio's unique aviation heritage, the committee recommends the adoption of HB 386 into law. Ohio's State Seal currently resembles other state seals quite closely, with nothing to set it apart. By adding a subtle depiction of the Wright Flyer without changing other components of the seal, we would be simultaneously celebrating the accomplishments of the Wright Brothers and branding Ohio as a unique space in aerospace and aviation.

4. Participation in Aerospace and Aviation Events

We continue to encourage OAATC members and government officials to network within the aerospace and aviation community, and to promote Ohio's unique brand wherever they can. The second Ohio Aerospace Day will be held this coming fall, providing an excellent opportunity for aerospace leaders to collaborate and for officials to learn more about why the aerospace industry is so important to Ohio. We recommend that the OAATC continues to cultivate relationships with industry leaders around the state, including NASA Glenn Research Center and Air Force Research Laboratory. There are many other aviation and aerospace events hosted throughout the state, such as the Ohio Aviation Association annual conference and the UAS Midwest Conference; all of which we encourage members and officials to attend.



Workforce Development

- Lead – Vince Russo

The purpose Workforce Development work group is to:

1. Work with industry to identify work force needs
2. Work with K-12 and higher education to address the needs of industry
3. Promote and encourage STEM career pathways
4. Improve access to educational and employment opportunities

Detailed Recommendations & Strategies:

1. Create an Ohio Aerospace and Aviation Business Round Table

The Ohio Aerospace and Aviation Business Round Table (OAABRT) would be a private non-profit, industry-led organization of aerospace and aviation leaders committed to growing business in Ohio. The Round Table would be comprised of CEO-level industry members and equivalent leaders of our key aerospace and aviation government institutions.

The Round Table would meet twice per year; once for the formulation and continuance of actions in support of the charter, and once associated with a specific event, for example “Aerospace Day”, which would include a meeting with the Governor. Meeting attendance should not be delegated, however, additional meetings for furthering the actions of the Round Table could be held and staffed by delegates.

This organization should have funded administrative support, be served by volunteer members and have a formal and continuous channel of communication into the legislature and the Governor’s office.

The first Chairperson of the Round Table should have significant name recognition, buy-in and membership of key Ohio industry. Possible Chairperson and membership recommendations have been developed and are available upon request.

2. Secure State Funding Support for “Project Lead the Way” (PLTW)

Project Lead The Way (PLTW) is the nation’s leading provider of K-12 STEM programs. Their world-class curriculum and high-quality teacher/professional development model, combined with an engaged network of educators and corporate and community partners, help students develop the skills necessary to succeed in our global economy. As a 501(c)(3) non-profit organization, PLTW programs are delivered to more than 9,100 elementary, middle and high schools in all 50 states and the District of Columbia. PLTW schools may be found in rural, urban and suburban districts; across all income levels; as well as, in public, private and charter schools. The program continues to grow exponentially and by 2015 had a total of 457 programs and trained 247 teachers from all across the country.

In 2013, PLTW launched a K-5 elementary program. With the implementation of this important piece, PLTW now offers STEM for K-12 graders, giving students immersion in STEM

curriculum from the day they start school until the day they graduate. PLTW students who enroll in STEM programs in college stay in that field at higher rates than non-PLTW students. Due to their high quality of knowledge, skill level and problem solving abilities graduates are sought by companies for their apprenticeship programs.

Ohio's Project Lead the Way program was organized in 2004 with a group of 13 schools who independently joined the program. During the first year, 11 new schools entered the program and a total of 25 teachers were trained. From 2006 to 2009, the state of Ohio supported PLTW with \$1,000,000 per year.

In 2009, Ohio's PLTW offered Aerospace Engineering (AE) training for the first time. From 2009 – 2015, 39 teachers attended training with 19 programs in Ohio schools. AE teachers cover topics such as; radio navigation, turbine engines, rocket design and launching, orbital mechanics, flight simulator, satellites, aerodynamics and much more. They build and test a composite wing in the wind tunnel, build a robot for space exploration, fly in an airplane simulator, learn about air traffic controllers, test flight data and much more.

AE is designed as an engineering course typically offered in the junior or senior year of high school. This recommendation is to expand the number of Ohio high schools currently offering the AE program from 19 to at least 350 and have PLTW re-instated in the Ohio budget. The cost estimate for this expansion is available upon request.

3. Develop Targeted Workforce Development Activities

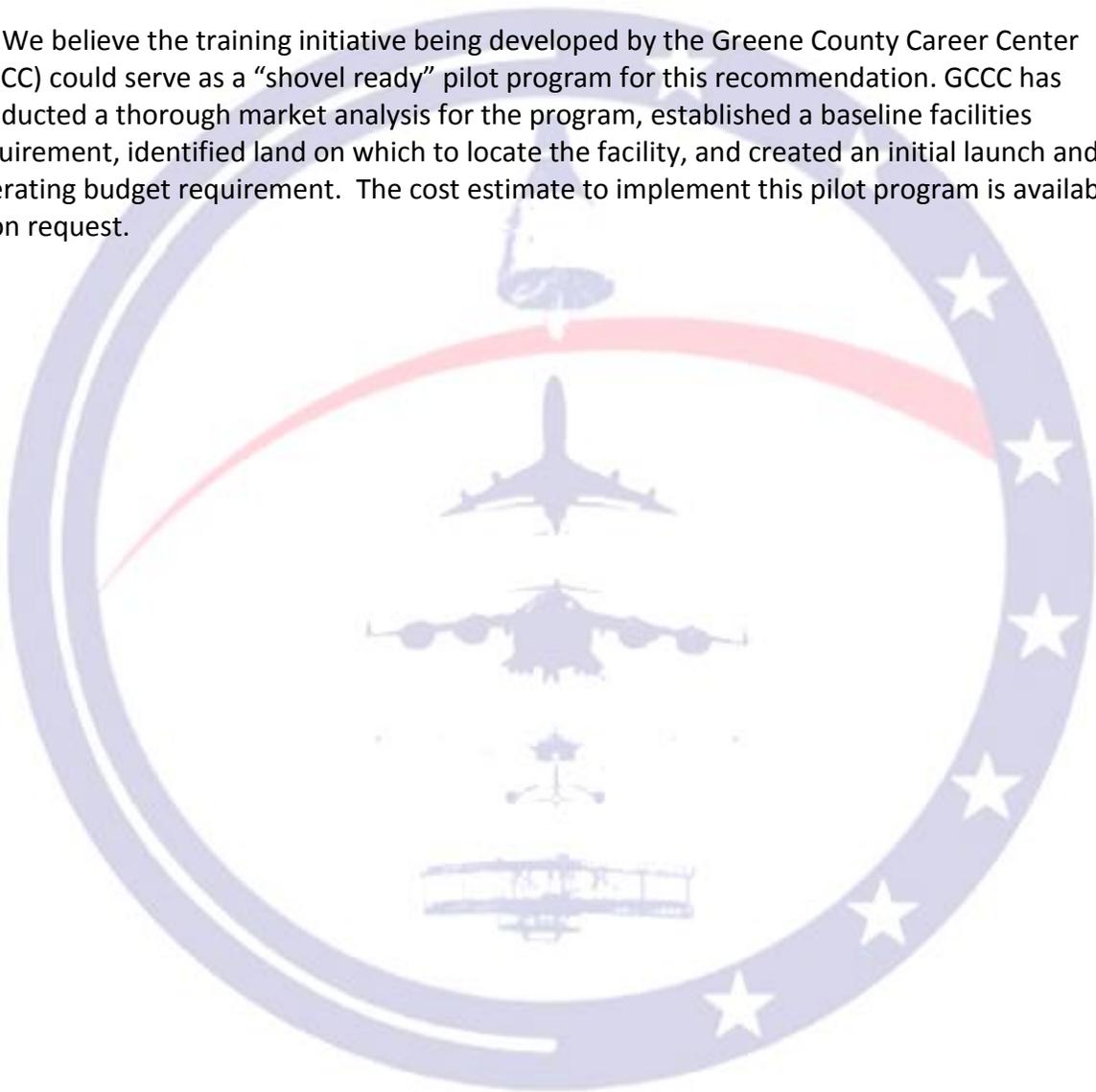
Company executives have reported severe challenges in filling existing employment opportunities due to a lack of qualified candidates. Additionally, there is an incomplete understanding of the education and training resources across Ohio which could be tapped to address the stated needs of the aerospace and aviation sectors. Also, there are opportunities to collaborate with relevant industry associations and educational institutions to extend and complement the currently available education and training resources. Finally, the JobsOhio customized training program is a positive step towards addressing these stated needs and should be expanded to solve aerospace and aviation needs. There may be similar opportunities to bring universities and public schools into the solution through collaboration with the Ohio Department of Higher Education and the Department of Education.

It is recommended the State fund a comprehensive gap analysis of education and training requirements and resources related to existing and near-term aerospace and aviation jobs. The analysis should include: compilation and assessment of existing data from known sources, formal electronic survey of Ohio companies known to operate in the aerospace and aviation marketplace, focus group meetings with targeted groups of companies engaged in the various subsectors of aerospace and aviation marketplace which focus on critical skills needed for that particular field, identify existing national training curricula and certificate programs offered through professional associations, public agencies or private entities and identify ways to negotiate statewide contracts to enable educational institutions to readily access these resources in order to provide training to Ohio companies, and analyze collected data and compilation of a final gap analysis report which illustrated in-demand jobs, training-related

hiring barriers, other hiring barriers, skills requirements and skills gaps. The cost estimates for the gap analysis is available upon request.

It is also recommended that the Ohio Department of Job and Family Services (ODJFS), selected employer volunteers from the aerospace and aviation sectors and the Federal Aviation Administration (FAA) meet to develop an aerospace-centric training program element under the larger ODJFS pilot.

We believe the training initiative being developed by the Greene County Career Center (GCCC) could serve as a “shovel ready” pilot program for this recommendation. GCCC has conducted a thorough market analysis for the program, established a baseline facilities requirement, identified land on which to locate the facility, and created an initial launch and operating budget requirement. The cost estimate to implement this pilot program is available upon request.



Technology Development

- Lead – Paul Orkwis

The purpose of the Technology Development work group (TDWG) is to:

1. Identify the critical technologies needed by the aerospace industry and government laboratories and foster their development at Ohio academic institutions
2. Identify the barriers to effective collaboration between industry and academic and between academic institutions

The work group is cognizant of the fact that several efforts are ongoing at the Ohio Federal Research Network (FRN), AFRL and NASA Glenn directly focused on Item 1. Consequently, our effort has been focused on Item 2.

Detailed Recommendations & Strategies:

1. Ohio Virtual Research Collaborative

Obtain funds from the State to establish a position responsible for developing and maintaining a database of aerospace and aviation related research conducted in the State of Ohio. This position should capitalize on the efforts of the FRN and the Ohio Innovation Exchange that have started this process, however, this should be a full time permanent position dedicated to this effort. This effort should be coordinated through JobsOhio and the Ohio Department of Higher Education.

2. Academic Discussion and Collaboration

An effort should be undertaken by the Ohio Engineering Deans Council to identify, discuss and remove barriers to collaboration between institutions. An effective program then needs to be developed to coordinate and encourage collaboration between Ohio universities, including providing incentives for joint research and short term faculty visits.

Industry Support

- Co-Lead – Ron Shroder
- Co-Lead – Tony Bailey

The purpose of the Industry Support work group is to:

1. Gather data and evaluate the needs of Aviation businesses in the State of Ohio in order to aid in incentives that would bring more aerospace and aviation related business and jobs to the state
2. Identify Tax incentives that would enhance aviation business climate within the state
3. Help develop change that would assist Ohio small businesses to capture more research and development opportunities, bringing more work and jobs to the state

Detailed Recommendations & Strategies:

1. Tax Exemption Initiatives

The Industry Support work group recommends changing the Ohio Tax code on aircraft sales to make the state more competitive with other states. Florida recently adopted some of the tax law changes we recommend, and published an impact study that concluded:

- The sales/use tax exemption would generate 354 additional aircraft sales in Florida that are currently lost to surrounding states. With each of these sales comes tourism dollars, and the potential for permanently basing the aircraft in Florida.
- The additional aircraft sales would generate \$22.4 million in direct statewide economic impact.
- 294 permanent jobs would be created in Florida, representing \$38 million in economic impact.

In addition, this proposal has zero cost associated as the state does not currently capture sales related transactions. Ohio's current tax code puts the state in an uncompetitive position for these transactions. Approximately 34 other states have some form of aircraft sales tax incentive which benefits the state and state businesses. In Massachusetts a study found that the number of aircraft sales based in the state increased by 40% after the state implemented a tax exemption on aircraft sales.

The Industry Support Group recommends that the state adopt Aircraft Sales Tax exemptions, such as the fly-away tax exemption, as quickly as possible to bring more work and jobs to Ohio aviation businesses.

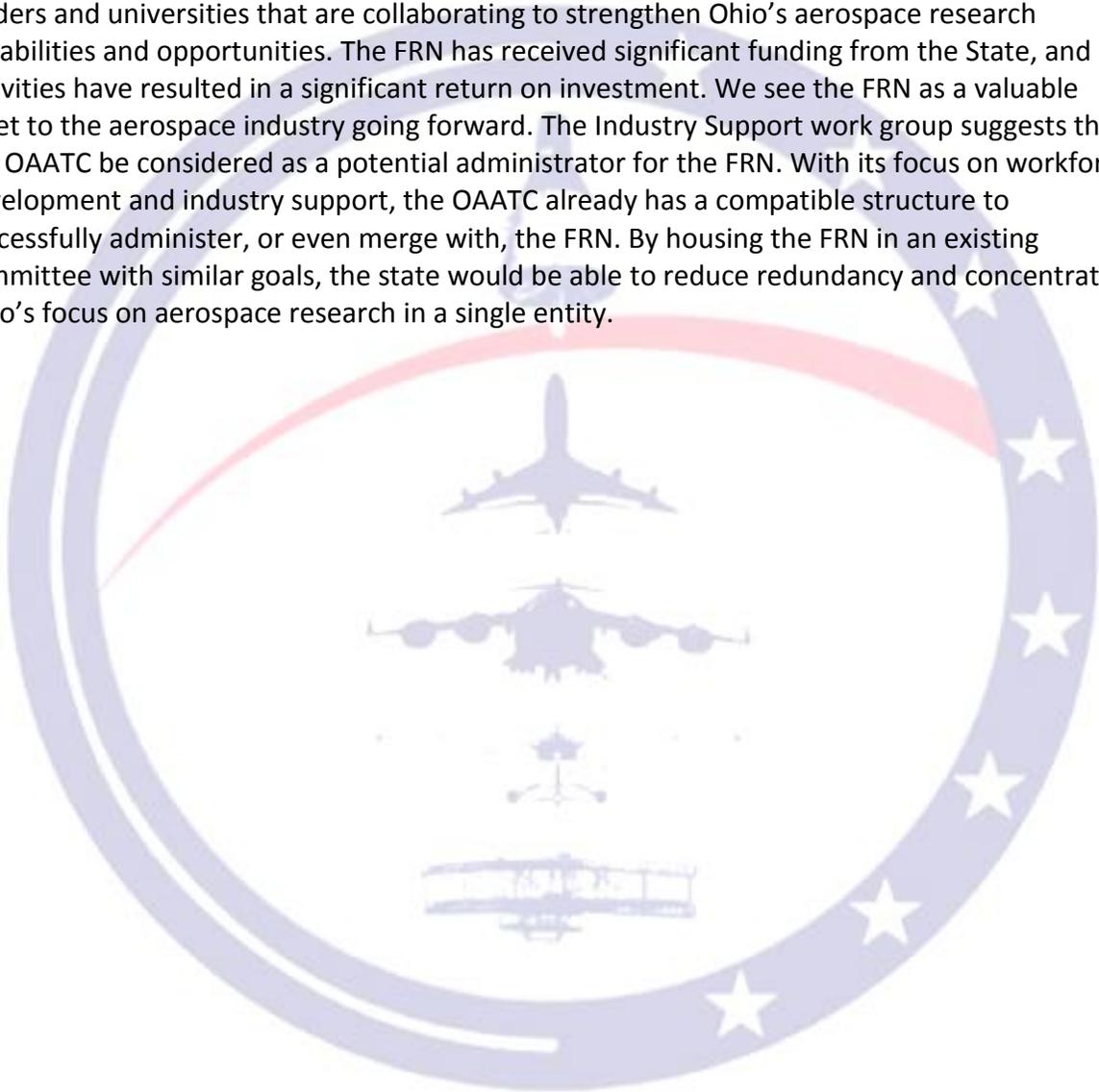
2. FAA Reauthorization Bill

Legislation was recently passed that makes a transformational change to move the Air Traffic Control (ATC) system out from under the FAA and to a private non-profit entity. Because this impacts virtually every aspect of our industry, from UAS to NextGen and more, the Industry

Support work group is working to be acquainted with the issues and make recommendations that help aid Ohio businesses during these changes.

3. Maintain the Federal Research Network (FRN)

With the Ohio Federal Military Jobs Commission (OFMJC) having completed its assigned duties, it is imperative that the state find a new home for the administration and oversight of the Federal Research Network(FRN). The FRN, created by the OFMJC, is a network of industry leaders and universities that are collaborating to strengthen Ohio’s aerospace research capabilities and opportunities. The FRN has received significant funding from the State, and its activities have resulted in a significant return on investment. We see the FRN as a valuable asset to the aerospace industry going forward. The Industry Support work group suggests that the OAATC be considered as a potential administrator for the FRN. With its focus on workforce development and industry support, the OAATC already has a compatible structure to successfully administer, or even merge with, the FRN. By housing the FRN in an existing committee with similar goals, the state would be able to reduce redundancy and concentrate Ohio’s focus on aerospace research in a single entity.



Federal Installations Support

- Lead – Jay Jabour

The purpose of the Federal Installations Support work group is to:

1. Coordinate local and regional efforts that posture federal installations for future force structure actions
2. Identify state regulations that would enhance contractor support to federal installations
3. Make workforce recommendations that posture the state for future force structure actions

Detailed Recommendations & Strategies:

1. Coordination of Local and Regional Installation Efforts

The Federal Installation work group's recommendation for state regulations and workforce activities were covered by other OAATC work groups and no additional actions were taken.

2. Coordination of local and regional efforts that support federal facilities in future force structure actions.

Subsequent to additional actions, we studied the recently released OFMJC report. That group did extensive research into local and regional support to federal installations and recommends that the state creates a position of Executive Director to report to the TAG that would essentially do what our OAATC panel recommends. Our work group therefore offers its support for the creation of a new Executive Director. Under HB 64, the Ohio military facilities commission was created and tasked with developing a program to assist with financing and correcting federal installation deficiencies while at the same time helping to implement enhancements which make the installations more viable in the event of a forced reduction exercise (Defense Base Realignment and Closure(BRAC)). The strategies and processes developed by this new commission will supersede those developed by the OFMJC and the OAATC.



Appendix A: Detailed Committee Notes



Ohio Aerospace and Aviation Technology Committee

October 6, 2015 – Approved Minutes

Statehouse Room 017

Chairman Perales called the meeting of the Ohio Aerospace and Aviation Technology Committee (OAATC) to order at 9:36 AM on October 6, 2015.

- The roll was called. A quorum was present.
- Chairman Perales asked members to review the minutes from the previous meeting. With no objections the minutes were approved.
- Chairman Perales decided that in the interest of time the committee would skip the administrative updates and begin with the day's presenters.
- Chairman Perales called upon Carlos Grodsinsky, Chair of the Ohio Aerospace and Aviation Council, to testify before the committee.
- Carlos Grodsinsky testified on Ohio Aerospace Day 2015.
 - Mr. Grodsinsky expressed the importance of the Ohio aerospace and aviation communities to maximize and leverage the contributions to the industry.
 - Mr. Grodsinsky explained that Ohio is the 4th largest advanced manufacturing state and the 3rd largest related workforce in the US, and emphasized the importance of supporting the state's aerospace infrastructure to bring not only high paying jobs within the industry, but also tangential opportunities in other sectors.
 - Mr. Grodsinsky identified a list of key stakeholders that he sees as playing substantial roles in the success of Ohio aerospace and aviation industries:
 - Ohio's higher education institutions
 - Wright-Patterson Air Force Base (WPAFB)
 - Air Force Research Laboratory (AFRL)
 - NASA Glenn Research Center
 - Ohio Aerospace and Aviation Council (OAAC)
 - JobsOhio
 - regional economic development organizations
 - Ohio Federal and Military Jobs Commission (OFMJC)

- Ohio Research Network
 - United States Department of Defense (DoD)
- Mr. Grodsinsky continued to state that Ohio Aerospace Day is an event that is designed to promote the collaboration of all of the aforementioned groups, and the criticality of all Ohio’s aerospace and aviation parties to come together with “One Voice”.
- Chairman Perales thanked Mr. Grodsinsky for his testimony and asked for any questions from the committee or audience. There were none.
- Chairman Perales invited Bob Tanner, VP of NetJets Inc. and OAATC member, to testify.
- Bob Tanner testified on NextGen technology.
 - Mr. Tanner explained that the Federal Aviation Administration (FAA) continues to collaborate with the industry to convert the air traffic control system from a radar/tower based system to a satellite/GPS system.
 - NextGen navigation will ease air traffic congestion, optimize fuel efficiency and increase the overall safety of the air traffic control system in the US.
 - Mr. Tanner elaborated on the nationwide challenge of educating the various stakeholders of NextGen navigation:
 - pilots and operators
 - air traffic control
 - airports
 - avionics suppliers
 - elected/appointed officials who have oversight responsibilities
 - Mr. Tanner explained that Ohio has had many opportunities in the field of NextGen, however it lacks a certain amount of available funding to make the infrastructure improvements to support the technology.
 - Mr. Tanner urged the committee to buy-in to NextGen technology so that Ohio can lead the charge in this historic endeavor.
- Chairman Perales thanked Mr. Tanner for his testimony, and asked if there were any questions from the committee or the audience. There were none.
- Chairman Perales called upon Greg Heaton and Doug Hammon, representing the Ohio Aviation Association (OAA), to testify on aviation fuel tax issues.
 - Mr. Heaton explained that over the last decade, funding for airports in the state had dropped 250%, and that in the last fiscal year, funding for the Ohio Airport Grant Program was set at \$1 million per year.
 - Mr. Heaton also noted that until recently, Ohio have seen declining grants from the FAA Airport Improvement Program. However, in the most recent FAA grants the state saw a substantial increase in funding.

- Mr. Heaton explained that availability to airports is a significant factor in businesses looking to move or expand in Ohio and explained that Ohio is struggling to maintain competitiveness in this area.
- Mr. Heaton continued to explain their proposal to create an excise tax structure for aircraft fuel in Ohio, similar to the structure of motor vehicles.
 - Under this structure, all tax revenues would be rolled back into Ohio's airports.
- Mr. Heaton explained that under the current sales tax structure, the state generates \$15.9 million in tax revenue, all of which goes into the General Revenue Fund (GRF) and then is appropriated. This causes all funding for airports in Ohio to be reliant on GRF appropriations every two years.
- Mr. Hammon, Director of the Ohio State University Airport, testified on OAA's proposal, specifically how they propose the funds be distributed.
- Mr. Hammon suggested 3 primary changes to the Ohio Airport Grant Program:
 - Local Match Support for FAA Grants: In recent years, ODOT Airport Grant Program funds were not allowed to be used to meet local match requirements for airports seeking funds from the FAA Airport Improvement Program. FAA grants require a 10% local match, so any state funds used to draw down these grants will have a significant return. Every state that borders Ohio has a state fund that provides match support.
 - Broaden Eligible Projects and Fund Uses: The Ohio Airport Grant Program only allows funding to be used for preservation of existing pavement, obstruction clearing, and limited navigational aid upgrades. In response to increased funding, we expect ODOT to broaden fund uses going forward. However, we recommend that eligible projects and costs for state funding be aligned with current FAA AIP rules. This would create synergy with federal funding and allow airports to fully utilize their state grants.
 - Allow All Airports to Participate: Currently, Ohio Airport Grant Program funding can only be used by general aviation airports, even though revenue from fuel sales is generated at both general aviation and commercial airports. We recommend that all airports that are part of FAA National Plan of Integrated Airports System (NPIAS) or the ODOT Ohio State Airport System Plan be eligible for state funding.
- Mr. Hammon reiterated that OAA believes that aviation funding in Ohio will provide opportunities for increased FAA grant awards to Ohio along with new jobs and economic development in and around Ohio's airports.
- Chairman Perales thanked Mr. Heaton and Mr. Hammon for their testimony and asked if there were any questions from the committee or the audience.

- Representative O'Brien asked the witnesses how funding was divided up between the small airports and larger ones?
- Mr. Heaton explained that currently the Ohio Airport Grant Program (OAGP), administered by the Ohio Department of Transportation (ODOT), has full control of awarding the funds that are appropriated to it. Mr. Heaton reiterated some of the limiting factors of the current Ohio Airport Grant Program.
- Representative O'Brien asked if Mr. Heaton anticipated ODOT making changes on their own in the near future.
- Mr. Heaton commended ODOT for their reaction to the recent budget changes. He explained that after the increased appropriation in the 2016-2017 two-year state operating budget, the OAGP began allowing their grants to be used as matching funds, and they also reissued grant requests in order to efficiently distribute those new funds.
- Chairman Perales thanked Mr. Heaton and Mr. Hammon for their testimony.
- Chairman Perales called upon David Gallagher, Chief of Staff, UAS Center & Test Complex, to testify on Unmanned Aircraft Systems (UAS).
- Mr. Gallagher testified on the Ohio/Indiana UAS Center.
 - Mr. Gallagher gave a brief overview of the program's key partners and locations
 - Mr. Gallagher explained that the UAS Center is eager to work with this committee to identify and promote UAS friendly legislation and programs. He continued that they could be a key resource to identify UAS unfriendly legislation as well.
 - Chairman Perales asked if Mr. Gallagher could elaborate on any current legislation regarding UAS.
 - Mr. Gallagher explained that there were currently two bills that he was watching closely as they could have unintended consequences.
 - HB 218 (Rep. Barnes) - To enact sections 4561.50 and 4561.51 of the Revised Code to regulate the operation of drones near airports and to impose certain record-keeping requirements on retail sellers of drones.
 - HB 228 (Rep. Cupp) - To amend sections 2981.01 and 2981.02 and to enact section 2917.48 of the Revised Code to prohibit the commission of any of a list of specified offenses by using a drone or by directing or supervising another person's use of a drone.
- Chairman Perales thanked Mr. Gallagher for filling in for his colleague Ryan Smith and for his testimony and asked for any questions from the committee or audience. There were none.
- Chairman Perales called upon Glenn Richardson, JobsOhio, to testify.
- Mr. Richardson testified on manufacturing workforce shortages.
 - Mr. Richardson explained that workforce issues are incredibly complex to resolve.

- Mr. Richardson stated that hands down the single most important issue that companies in the aerospace and advanced manufacturing fields are facing in Ohio is the lack of qualified workers.
- Mr. Richardson emphasized the importance of critical career paths stemming from high school, associates, and bachelors degree programs. He continued stating the need to identify which programs are best suited to each specific field within manufacturing and other aerospace related industries.
- Mr. Richardson explained that experiential learning in the classroom with hands-on curriculum and in the workplace through internships are necessary early on to develop the crucial combination of technical and soft skills, that are difficult to develop in other ways.
- Mr. Richardson explained that the most successful companies that he has dealt with are companies that focus on talent development.
- Chairman Perales asked if Mr. Richardson could identify where the efforts of the committee should be most focused.
- Mr. Richardson said that there were many great examples at the local level of partnerships between institutions of learning and industry members. However, he stated that the specific ways to expand this on the state level has not yet been identified.
- Tony Bailey stated that from his standpoint a major issue is the experience gap. He stated that he has no trouble finding educated candidates, but he struggles to find experienced candidates. He suggested that internships are crucial for eliminating that gap.
- Rep. Baker asked if the education system was part of the issue when it comes to developing a qualified workforce. She asked if the current teaching environment is embracing new technologies in their curriculum to the extent that is needed.
- Glenn Richardson explained that while he is not an expert in the education field, as he comes from an economic development background, he believes that kids come out of school with an idealist view of the world, and that is a result of a lack of experiential learning.
- Sue Louscher added that at the last workforce development workgroup meeting there was a discussion about previous programs that targeted resource partnering and lacked the curricula development component.
- Ms. Louscher continued to suggest a program that targets veterans, many of whom already have technical training. She suggested creating accessing a database of enlisted persons, and target their exit dates with a letter from the Governor or legislature encouraging them to come to Ohio.
- Chairman Perales thanked Mr. Richardson for his testimony

- Chairman Perales called upon Mark Brown to give the committee an update on the Outreach workgroup.
- Mark Brown explained that to an extent the actions of the Outreach workgroup are dependent on the actions of other groups.
 - Mr. Brown Described the goals of the Outreach workgroup:
 - To Brand Ohio as an aerospace and aviation state outside the state
 - Build support for aerospace and aviation within the state
 - Market Ohio’s aerospace and aviation industry
 - Promote aviation tourism
 - Mr. Brown laid out a few future actions for the Outreach workgroup:
 - Identify specific branding needs
 - Addition of Aviation related “Events” page to website
 - Research opportunities for an Ohio Aviation Hall of Fame
 - Consider low-hanging fruit legislative actions such as:
 - Revise Title 1, Chapter 122 of the ORC to include a new section 122.100 Aviation Marketed Growth in Ohio. As Ohio is the Birthplace of Aviation (as stipulated in U.S. House Resolution 378-3), all state aided/funded programs that promote Ohio will include Aviation in in marketing and promotional materials in any format (electronic, media, print, etc). As a minimum, the tag line “Ohio – Birthplace of Aviation” will be added. Exempt from this requirement is legal and required notifications that are published in any format.
 - Revise the OAATC code 122.98 to include the following: (E) The Ohio aerospace and aviation technology committee will, as a matter of charter utilizing committee members, provide support and education to state promoted youth education programs such as and strive to ensure the promotion of Aviation as a career for Ohio youth is fully explored.
- Mike Heil suggested for the Ohio Aviation Hall of Fame, that the committee look into partnerships with organizations such as Triumph of Flight
 - Mr. Heil continued by stating that the committee should be sure to not conflict in any way with other Aviation Hall of Fames in the state and country.
- Chairman Perales agreed and thanked Mark Brown for his update.
- Chairman Perales called upon Jeff Rolf to give the committee an update on the Workforce workgroup on behalf of Vince Russo.
- Jeff Rolf explained that the Workforce Development workgroup is still in the data gathering mode and that the next phase would be identifying recommendation to the OAATC.

- Mr. Rolf added that through their previous meetings they were able to identify many workforce initiatives that are already in place with other organizations:
 - JobsOhio Initiatives – Glenn Richardson
 - Assist aerospace and aviation companies to locate and remain in Ohio
 - Jobs and Family Services – what is needed, skill sets, and jobs created
 - Customized Workforce Training
 - Need focus on high school students not headed to Universities
 - Ohio Federal-Military Jobs Commission Workforce Initiatives – Chad Watchorn
 - Chapter 3 Update---report in final stages
 - One-stop Jobs Centers in six regions of Ohio
 - The Ohio State University Workforce Initiatives – David Williams
 - OSU Airport
 - Keep Federal Government aware of importance of WPAFB and NASA Glenn
- Mr. Rolf added that the workgroup is compiling all of the these initiatives such that the OAATC can find a niche that has the most bang for the buck.
- Chairman Perales thanked him for the update.
- Chairman Perales called upon Paul Orkwis to give the committee an update on the Technology Development workgroup.
- Paul Orkwis explained that the Technology Development workgroup has two priorities at this time:
 - Priority 1- Identify the critical technologies needed by the Ohio aerospace industry and government laboratories, and foster their development at Ohio academic and research institutions.
 - Priority 2- Identify barriers to effective collaboration between industry and academia and between academic institutions.
- Mr. Orkwis explained that in order to further delve into these priorities, the workgroup used a brainstorming exercise.
 - Mr. Orkwis highlighted 3 key ideas for collaboration between industry and academia
 - Visiting Professor Exchange – Ohio universities can create a one semester exchange, 1 for 1, where, for example, a UC professor might go to UD in the Fall and the UD professor comes to UC in the Spring, they teach some specific classes, meet people and gain trusted colleagues – probably a no cost option but State might provide travel funds (po)
 - Academia-Industry-Lab Exchange – Two (or more) nonacademic organizations can exchange visitors for a semester, academician working on real-world

problems, industry/lab researcher teaching some class – might be more practical part time or over a sabbatical but would probably involve the hosting institution paying something or the State covering the costs to make it happen on both ends (po)

- Encourage Ohio university faculty to take sabbaticals with Ohio industry, federal laboratories
- Mr. Orkwis suggested that the Technology Development working group should focus on those technologies that perhaps support the broader aviation and aerospace infrastructure and that would ALSO give Ohio a competitive advantage over other states.
 - Mr. Orkwis identified a critical need for some Ohio businesses and airports in development and implementation of NEXTGEN air traffic management procedures.
- Chairman Perales thanked Mr. Orkwis for his input and emphasized the importance of working closely with the Ohio Federal Military Jobs Commission to not duplicate efforts.
- Chairman Perales called upon Tony Bailey to give the committee an update on the Industry Support workgroup.
- Tony Bailey explained that the Industry Support workgroup has been holding regular meetings on all industry issues, however the primary focus of discussions were related to tax exemptions.
 - For legislative purposes, there are two approaches to be presented to OAATC for review:
 - A tax abatement on business category aircraft sales called a “Fly-Away” tax defined in a previous session. This topic is now open for clarification.
 - A tax abatement on all aircraft sales transactions that occur in the State of Ohio. This topic is now open for clarification.
 - Mr. Bailey explained that the Industry Support group will continue to collect as much data as possible specific to aviation related tax incentives and the application of aviation sales incentives in other States.
 - Mr. Bailey explained that the industry support group will continue to look into small business issues regarding R&D and SBIR as the primary focus.
- Bob Tanner elaborated that the broader general aviation sales and use tax exemption has already been passed in 6 states, and emphasized that companies like NetJets and others pay very close attention to state tax structures when making transactions of aircraft.
- Tony Bailey explained that both tax incentives could be leaving millions if not billions on the table for Ohio.
- Representative Baker emphasized the need to collect data on the potential return on investment of these tax policies.

- Chairman Perales agreed and added the importance that Ohio not be put at a disadvantage in tax policies.
- Chairman Perales thanked Tony Bailey and Bob Tanner for the update.
- Chairman Perales called upon Mike Heil to give the committee an update on the Installations Support workgroup.
- Mike Heil explained that the objective of the Installations Support workgroup is to recommend to the Committee legislation or policies that support State and Federal Aerospace and Aviation related installations
 - Mr. Heil identified three priorities:
 - Identify recommendations on how to coordinate local and regional efforts that are focused on supporting Active/Guard/Reserve/Research installations in upcoming or potential force structure actions
 - Mr. Heil explained that for this priority, it will be important to work in balance with the newly formed Ohio Military Facilities Commission.
 - Identify economic or regulatory recommendations for the committee that would enhance Ohio businesses and suppliers to State and Federal Installations to better posture those installations during force structure evaluations
 - Mr. Heil explained that the recommended actions for this priority is to reach out to businesses, educational and trade organizations to identify any economic or regulations that they feel would enhance their posture to support Installations in a force structure evaluation.
 - Mr. Heil elaborates that the Installations Support workgroup believes this would require a state funded study.
 - Mr. Heil continued to emphasize that a strong industry support base is crucial in the case of force structure actions.
 - Identify specific workforce related initiatives that Federal installations could benefit from and recommend to the committee how to implement them
 - Mr. Heil explained that this priority would fall under the Ohio Federal Military Jobs commission and the workgroup recommends no action on this item.
- Chairman Perales thanked him for his update.
- Chairman Perales asked if anyone on the committee or in the audience had anything to add to the discussions.
- Brady Templeton, President of Airborne Maintenance and Engineering Services, Inc., requested to speak briefly.

- Mr. Templeton commended JobsOhio and Glenn Richardson for doing such a great job, and expressed that it was nice to hear someone listening to these workforce issues.
- Mr. Templeton explained that he sees a great opportunity with vocational schools, and described a partnership that Airborne is currently utilizing to this end.
- Mr. Templeton suggested that the Ohio Department of Education, parents, teachers and administrators promote the vocational school pathway moving forward.
- Mr. Templeton explained that there are many more opportunities similar to his situation and that the state of Ohio as well as the aerospace and aviation industries could greatly benefit from promoting programs similar to his.
- Chairman Perales thanked all of the committee members, witnesses and audience members for attending the meeting, and encouraged everyone to stick around for the rest of Aerospace Day 2015.
- Chairman Perales adjourned the meeting at 11:39am.



Ohio Aerospace and Aviation Technology Committee

November 18, 2015 – Approved Minutes

Statehouse Room 017

10:00 AM – 12:00 PM

Chairman Perales called the meeting of the Ohio Aerospace and Aviation Technology Committee (OAATC) to order at 10:05 AM on November 18, 2015.

- The roll was called. A quorum was not present.
- Chairman Perales asked members of the committee and the audience to introduce themselves.
- Chairman Perales stated that he appreciated all the time and dedication the committee members have contributed to the committee.
- Chairman Perales indicated that since there is no quorum of the committee members, the minutes from the October 6th and November 18th meetings will be presented and approved at the next scheduled meeting on December 9, 2015.
 - Representative Perales indicated that he will announce and schedule four meetings in 2016.
- Chairman Perales encouraged committee to investigate the possibility of incorporating interns to assist in the workgroups. Possible interns could be students from universities, young professionals, professionals from Wright-Patterson Air Force Base, NASA Glenn, and aerospace industries/companies. Anyone in the audience with knowledge of possible interns was advised to contact the Chairman's office.
- Chairman Perales introduced his legislative aide, Andy Swaim, to present current legislation related to aerospace and aviation.
 - House Bill 218 – To enact sections 4561.50 and 4561.51 of the Revised Code to regulate the operation of drones near airports and to impose certain record-keeping requirements on retail sellers of drones (<https://www.legislature.ohio.gov/legislation/legislation-summary?id=GA131-HB-218>).
 - HB 218 had been scheduled twice for hearing in House Transportation and Infrastructure committee since October 6, 2015 meeting but had not yet heard.

- Chairman Perales stated that awareness of unintended consequences of UAS legislation is an important role of the committee.
 - House Bill 386 - To amend sections 5.04 and 5.10 of the Revised Code to add a representation of the Wright Brothers' first piloted airplane to the Coat of Arms and Great Seal of the State of Ohio (<https://www.legislature.ohio.gov/legislation/legislation-documents?id=GA131-HB-386>).
 - HB 386 had been introduced and referred to House State Government Committee.
 - Chairman Perales elaborated on need for an updated state seal. Emphasized the importance of “heritage” and adding an icon specific to Ohio to the state seal, since Ohio is the only United States state to be officially identified as the birthplace of aviation. HB Bill 386 has support of 40 co-sponsors.
- Chairman Perales introduced Bob Doyle with the “Triumph of Flight.”
- Mr. Doyle testified about new project to build a new monument in Ohio called “The Triumph of Flight” and invited colleague Curt Nelson to elaborate on the endeavor.
- Curt Nelson went into detail over the monument and the goals of the Triumph of Flight:
 - The monument is a replica of the 1903 Wright Flyer to be placed near the southwest corner of Ohio, the heart of Aviation Heritage Area (crossroads of I-70 and I-75).
 - Mr. Nelson stated that more than 53 million vehicles pass through this area.
 - He also noted that the site would include a large reflecting pool, a gift shop, and an educational area for acknowledging aviation and aerospace in Ohio.
 - The purpose of the monument will not just highlight Southwest Ohio, but all of Ohio as an aviation and aerospace powerhouse.
 - The monument would also potentially include a display of the Ohio Aviation Hall of Fame.
 - The monument will also include a statue of Wilbur and Orville Wright, a statue of Icarus and a statue of Neil Armstrong stepping on the moon.
- Chairman Perales thanked Bob Doyle and Curt Nelson for the progression of the project and the presentation and opened the floor for questions and/or comments
 - Dr. Mike Heil noted that he has been in contact with former Governor George Voinovich who supports the monument. He stated he would like to bring more of Northeast Ohio into the picture. He also elaborated by saying the project features ample space where different parts of Ohio may portray their heritage on the site.
 - Chairman Perales emphasized that the monument will encompass the whole state of Ohio to portray the collective aerospace and aviation heritage.
 - Dr. Vincent Russo asked if state funding has been requested.
 - Mr. Doyle replied that they have requested \$10M from the state capital budget. He explained that the entire project will cost \$20 million.
- No further questions were asked. Curt Nelson and Bob Doyle were thanked for their briefing on the project.

- Chairman Perales introduced Jessica Orr with Techhub to testify.
 - Jessica Orr testified on manufacturing in Ohio and the correlation it has with aerospace.
 - She stated that the Manufacturing Extension Partnership (MEP) was started over 20 years ago to be a catalyst for strengthening American manufacturing.
 - The MEP is a manufacturing life line staffed by trusted advisors with a background in manufacturing.
 - The MEP exists to:
 - Enhance competitiveness
 - Move quickly to find solutions
 - Engage the right resources
 - Deliver results for operations
 - The Ohio Manufacturing Extension Partnership (MEP) has 6 affiliates in Ohio.
 - The main focus of the program is on small and medium affiliates.
 - 5 key solution areas in the MEP are:
 - Continuous Improvement
 - Supply Chain Development
 - Workforce Development
 - Sustainability
 - Tech Accelerations
 - Their facility is currently housed with the University of Dayton's Research Institute.
 - Ms. Orr concluded that the MEP is a program suited to position Ohio's supply chain to respond to commercial aviation opportunities.
- Chairman Perales thanked Ms. Orr for the presentation and testimony then opened the floor for questions and/or comments.
 - John Leland stated this is a multi-year program which UDRI (University of Dayton Research Institute) hopes to have much success. He stated that they are open to reaching new suppliers and collaborating with others to assist these suppliers.
- Chairman Perales asked what type of metrics are in place determine success of the project.
 - Jessica Orr stated that metrics will be seen through multiple avenues, such as:
 - Impact to Ohio finances and job creations
 - Number of jobs retained
 - Amount of new equipment added and incorporated
 - Number of new suppliers obtained
- Dr. Paul Orkwis asked what type of academia influences they have or aspire to have in the future. Dr. Orkwis stated we need to spread the word concerning this program and be proactive to see what sticks and what will impact the next generation of commercial relations.
 - Jessica Orr responded that they have a proactive approach to applying to small business and engaging with academia.

- Chairman Perales asked if there are any other questions. There were none. He thanked Ms. Orr again for her testimony.
- Chairman Perales introduced Mike Hripko to testify.
 - Mr. Hripko, Vice President of Youngstown State University, identified the improvements and developments of aerospace education at his university.
 - He then elaborated on the relevance and importance of work with Wright-Patterson Air Force Base and NASA Glenn Research Center.
- Chairman Perales thanked Mr. Hripko for his testimony. He then opened floor to committee members for questions or comments. There were none.
- Chairman Perales moved on to workgroup updates.
- Due to the absence of Mark Brown, Chairman Perales gave the update for the Outreach and Branding workgroup.
 - Chairman Perales identified 3 main outreach challenges:
 - Marketing
 - Messaging
 - Public Relations
- Chairman Perales introduced Bob Tanner to elaborate more on outreach.
 - Bob elaborated on the great aspects of the trade organization and aviation in Ohio. He also noted that the outreach subcommittee published articles on the national platform.
- Chairman Perales thanked Bob Tanner.
- Chairman Perales then mentioned the notion of the PR department.
 - He identified key components such as the new website, articles, TV, events, social media, etc.
- Chairman Perales invited his legislative aide, Andy Swaim, to elaborate on the OAATC Website.
 - Mr. Swaim testified on the website, stating that is currently being developed to accommodate professionals to share, edit, and collaborate on documents online.
 - Mr. Swaim then elaborated on the ability for individuals to receive/input information, publish events, view and post news articles and reports from workgroups, and the ability for committee members to share documents and collaborate.
 - Chairman Perales stated the website's purpose is to get information out to the public. He called it a one-stop shop for aerospace and aviation in Ohio and the US.
- Chairman Perales then emphasized the need for public publishing and outreach.
- Representative Baker stated that social media is a prevalent avenue for youth to inform themselves on the committee.
 - She advised that social media be emphasized even more.
- Chairman Perales agreed then reiterated that the new website should be able to accommodate all aspects of Aviation/Aerospace in Ohio and to establish credibility for committee.

- He then stated that he wants pictures and documents to be consistently posted on the website.
- Chairman Perales went on to introduce the Workforce Development Group and Dr. Vincent Russo.
 - Dr. Russo first thanked Melinda Forsythe for her continual contribution.
 - He then went on to introduce a chart that correlated OAATC with OFMJC. He emphasized there is a significant distinction between the two entities.
- Dr. Russo went on to introduce 3 recommendations:
 - The first is to create an Ohio Aerospace and Aviation Business Round Table.
 - This would include high ranking business officials who would report to the legislators and establish goals for legislative actions.
 - Russo continually emphasized the need for a business round table to achieve its goals.
 - Chairman Perales thanked the suggestion and said he will look into it.
 - Recommendation #2 would be to develop and implement “targeted workforce development activities” among Aerospace and Aviation industries to nearby colleges and high schools.
 - Recommendation #3 is to develop a relationship between the State and Project Lead the Way that would lead to increasing interest in STEM careers.
 - Dr. Russo reported the next steps of the workforce development group would include finalizing each recommendation, preparing a report for Phase One, support OAATC as needed, and develop additional recommendations during Phase Two for next fall.
- Chairman Perales thanked Mr. Russo and his workforce group.
- Chairman Perales then asked committee members for any comments or questions.
 - Representative Baker asked how kids can gain enthusiasm for these opportunities and how these opportunities can be reached. She also asked how it can lead to well-paying jobs for them in the future.
- Dr. Russo emphasized that academia will be further addressed specifically.
- Chairman Perales then introduced Dr. Paul Orkwis for the Technology Development workgroup.
 - Dr. Orkwis reiterated the fundamental set of priorities (as previously stated in last meeting’s notes).
 - He then went straight to “Board 3” in his presentation and elaborated on NEXTGEN Air Traffic Management.
- Chairman Perales thanked Dr. Orkwis. He then asked for any questions.
- Committee member Dr. Russo asked if the technology development workgroup had discussed any emerging technologies pertaining to spacecraft.
 - Dr. Mike Heil responded that the Ohio Aerospace and Aviation Council is working on a space strategic plan that makes next generation space development a priority, since Ohio has a step up on other states in terms of resources.
 - Dr. Orkwis stated he would like more input from the committee for this idea.

- Chairman Perales emphasized that Ohio should be at the forefront of technology and aerospace.
- He then reiterated that “We have the resources.”
- Chairman Perales introduced Glenn Richardson with JobsOhio.
 - Mr. Richardson reported that Carlos Grodsinsky and he are working to get Airbus support to develop the next satellite constellation for advanced GPS.
 - He also stated that JobsOhio is looking for more collaboration with companies like Airbus to engage in further opportunities with aerospace in Ohio.
- Chairman Perales stated that JobsOhio will have more time in further meetings to discuss their developments due to their significant progress and relevant work.
- Chairman Perales introduced Ron Shroder with Industry Support workgroup
 - Mr. Shroder testified on the following key components:
 - The workforce group has 3 priorities that include data gathering, tax implications, and small businesses/research.
 - He also stated that he would like to compare Ohio’s aerospace with Alabama’s well-recognized aerospace industry.
 - Mr. Shroder explained that the Industry Support workgroup had drafted 2 potential legislation actions (general aviation tax exemption and fly-away sales tax exemption) to boost the aviation and aerospace industry in Ohio.
 - He stated that New York has also included a tax exemption around the sale on aviation aircrafts along with other states.
 - He asked Chairman Perales to take the legislative proposals into further consideration.
- Chairman Perales said an update will be provided in the next meeting.
 - Mr. Shroder noted that Bryan Budds was also added to the committee.
- Chairman Perales thanked Mr. Shroder for the update. He asked if there are any comments or questions. No further comments introduced.
- Chairman Perales introduced Dr. Russo to address Installations Support progress
 - Mr. Russo noted that no progress was reported from Jay Jabour, Installations Support Workgroup Lead.
- Chairman Perales thanked Dr. Russo and invited the audience to contribute to the discussion.
- Jeff Banks with Applied Aviation Technology approached the podium to testify. He identified the following concerns:
 - He encouraged construction of engines and aircrafts at a systematic level for Ohio and believed the entire process can be done in Ohio.
 - He noted that getting aircraft production to Ohio is extremely hard due to labor laws and that they need to be reformed.
- Chairman Perales noted that the infrastructure is not available yet.
 - Mr. Banks then emphasized that the general aviation industry has not been updated in 70 years; he believes general aviation is being neglected while commercial aviation is the primary focus.

- Chairman Perales thanked Mr. Banks for his input. He will further discuss this topic at the next meeting.
- Chairman Perales then invited Russ Kline from CBD Advisors to talk about aviation fuel.
 - Mr. Kline testified that ODOT and FAA are interested in supporting local airports.
- Chairman Perales thanked Mr. Kline for his testimony then introduced Doug Hammon, Director of OSU airport, to testify.
 - Mr. Hammon testified that ODOT is providing more in airport grants to general aviation airports in Ohio. He explained that there was more work to be done regarding state grant funding.
- Chairman Perales suggested that ODOT should look into allocating more staff for the Office of Aviation.
- He thanked Mr. Hammon for his input and asked for any comments.
- Dr. Orkwis announced that the University of Cincinnati is looking for 5 new professors for Aerospace Engineering and a chair professor in space exploration.
- Chairman Perales mentioned the new website should be able to provide such an avenue for these positions to be posted.
- Chairman Perales asked if anyone else has any questions. There were none.
- Chairman Perales then thanked all of the committee members and audience for attending the meeting.
- Chairman Perales adjourned the meeting at 11:58 am.



Ohio Aerospace and Aviation Technology Committee

December 9th, 2015 – Approved Minutes

Statehouse Room 017

Chairman Perales called the meeting of the Ohio Aerospace and Aviation Technology Committee (OAATC) to order at 10:02 AM on October 9, 2015.

- The roll was called. A quorum was present.
- Chairman Perales asked members to review the minutes from the previous two meetings. With no objections the minutes were approved.
- Chairman Perales called upon legislative aid, Andy Swaim, to provide pertinent legislative updates to the committee.
 - Mr. Swaim brought to the committee's attention House Concurrent Resolution 8, which repudiates Connecticut's claim that Gustave Whitehead flew a powered, heavier-than-air machine on August 14, 1901 or any other date.
 - Mr. Swaim explained that HCR 8 was scheduled for consideration on the Ohio Senate floor that day.
 - Mr. Swaim explained that the \$6 million line item in House Bill 64, the state two-year operating budget, that was appropriated for local and regional airports has been awarded by the Ohio Department of Transportation's Office of Aviation.
- Chairman Perales introduced Johann Klein from ODOT's legislative affairs office to the committee and audience.
 - Mr. Klein brought to everyone's attention that they do in fact have an aviation division.
 - Mr. Klein then thanked Chairman Perales and the committee for their support of local and regional airports.
- Chairman Perales thanked Mr. Klein for attending and emphasized his appreciation for ODOT's contributions to the aviation industry.
- Chairman Perales took time to note that House Bill 386, which would add a representation of the Wright Flyer to the Great Seal of the State of Ohio and the Ohio Coat of Arms, has been introduced and referred to House State Government Committee.

- Chairman Perales brought to the committee's attention that committee member Roderick Munn has resigned from the committee.
 - Chairman Perales noted that his position will need to be filled and that the committee will continue accept applications for the position through the website.
 - Chairman Perales emphasized that the committee should look for geographically diverse members when considering someone to fill this position.
 - Chairman Perales encouraged members of the committee and the audience to spread the word.
- Chairman Perales then introduced Brian Smith, director of space flight systems at the Plum Brook Station Facility in the NASA Glenn Research Center, to testify on the Orion project.
 - Mr. Smith started his presentation with a video that visually depicted the stages of the Orion project which encompass a 2 year project pertaining to space exploration.
 - Mr. Smith then brought to the committee's attention all the facilities the NASA Glenn Research Center has and their significance:
 - Such facilities include the Space Power Facility, the Mechanical Vibrations Facility, the Reverberant Acoustic Test Facility, the Space Vacuum Chamber, and the European Structural Test Article.
 - Mr. Smith noted that all these facilities will be able to successfully mimic the environmental conditions the Orion module will face in space.
 - Mr. Smith then stated that some of the aforementioned facilities are the biggest and most accurate facilities in the world in terms of aerospace condition mimicking.
 - He also noted that many international partners use their facilities and also provide instruments to the NASA Glenn Research Center to help achieve their goals.
 - Mr. Smith emphasized the need for success in space exploration and stated that Ohio's participation in space exploration is significant in the international aerospace community.
- Chairman Perales asked Mr. Smith what this project will lead to.
 - Mr. Smith responded that as the mission expands and as new missions surface, their facilities will be able highly accurate testing for their modules and spacecrafts.
 - Mr. Smith also noted that many European companies have been interested for using their facilities as well.
- Representative Sean O'Brien brought to the committee's attention NASA's current funding dilemma and asked if it affected this program.
 - Mr. Smith responded that the funds Representative O'Brien talked about are not pertinent to this project.
- Chairman Perales thanked Mr. Smith for his testimony and asked the committee and the audience if they had any questions. There were none.

- Chairman Perales then introduced Mike Hripko, Associate Vice President of Youngstown State University, to testify on the subject of creating research opportunities through innovative models of engagement.
 - Mr. Hripko commenced his testimony with some background statistics of his institution, such as the current amount of undergraduate and graduate students, the number of current undergraduate and master’s programs, and the types of doctorates in different fields.
 - Mr. Hripko noted that they have encountered an increase in staff due to their significant growth in research.
 - He then stated that his institution encompasses the full spectrum of advanced manufacturing, from working with basic molecules to printing metal prototypes to engaging with local partnerships.
 - Mr. Hripko continued his testimony by elaborating on their significant work in advanced materials and manufacturing.
 - Mr. Hripko emphasized that their research is primarily focused on full-spectrum metal manufacturing.
 - He also brought to the committee’s attention their state-of-the-art, high-quality laboratory equipment and their ability to produce printed metal parts at an extremely efficient rate.
 - Mr. Hripko noted that the facilities at Youngstown State University enable them to design and create prototype replacement parts within a matter of days for the aerospace industry.
 - Mr. Hripko noted that his institution has called forth a national panel to perform studies on the future of advanced hybrid manufacturing. He also stated that his institution is constantly looking to apply their manufactured products to small and medium businesses that need them.
 - Mr. Hripko concluded that he looks forward to collaborating with legislation and members of the committee.
- Representative O’Brien noted that Mr. Hripko’s institution was able to provide an irreplaceable part for the Airforce within a matter of days, a feat which no one else in the industry was able to do.
 - Mr. Hripko noted that their 3D metal printing capabilities have come a long way but are still being constantly tested through “destructive testing.”
- Chairman Perales thanked Mr. Hripko for his testimony and asked the members of the committee if they had any comments or questions.
- John Leland noted that Youngstown State University’s manufacturing parts are impressive; however, 3D printing does not ensure guaranteed and fully-tested parts.

- He also noted that his institution, the University of Dayton, has a major partnership with Youngstown State University and that they engage in combining technologies to develop critical parts for the manufacturing industry.
- Susan Louscher commended research institutes in Ohio and their ability to produce additive parts for the aerospace industry; she noted that the progress is incredible and extremely underrated.
- Ms. Louscher also emphasized that repairing, replacing, and rebuilding parts with additive manufacturing through collaboration is significant for the state of Ohio.
- Dr. David Williams also noted that Ohio is a player in 3 of the major hubs for manufacturing, which is a significant feat.
- Bob Tanner asked members of the committee representing research institutions how they approach the FAA in terms of producing and certifying their parts.
 - Ms. Louscher responded that their parts are always subject to FAA certification, as they have members of the staff who are FAA engineering representatives.
- Mr. Hripko also noted that the FAA inspects his institution's parts as well.
- Chairman Perales thanked Mr. Hripko for his testimony and introduced Carlos Grodsinsky to testify on the updates from the OAAC (Ohio Aerospace & Aviation Council).
 - Mr. Grodsinsky started his testimony by stating the OAAC's mission, which is to identify and promote business initiatives to retain market positions, drive new business opportunities, and attract new businesses to Ohio.
 - Mr. Grodsinsky noted that they are constantly looking for accelerators in their mission, such as the NASA Glenn Research Center.
 - Mr. Grodsinsky continued his testimony by emphasizing the need for alignment and integration for all aspects of their goals.
 - He also noted that they are having a council meeting to identify key projects to move forward and facilitate the alignment of new technologies.
 - He then emphasized that one of their main goals is to accelerate the time that new and emerging technologies can be introduced into the industry.
 - He also noted that this acceleration must be aligned with federal expenditures and assets in the state.
 - Mr. Grodsinsky then stated that facilities in Ohio are at the forefront of this technology and are essential to the whole country.
 - He then noted that electric propulsion is a significant, emerging technology that has a large amount of commercial interest. He then said entities like NASA Glenn Research Center do not have the funding to research and develop next-gen electric propulsion.
- Chairman Perales asked if any committee members had any questions.
- Dr. Vincent Russo asked Mr. Grodsinsky if the OAAC report to the governor since their council was initially appointed by the governor.

- Mr. Grodsinsky responded that they do not, as they are not funded by the state. They do however provide him with regular reports.
- Chairman Perales thanked Mr. Grodsinsky for his testimony and stated his appreciation for him and the OAAC's work.
- Chairman Perales then introduced Ann Heyward to update the committee on the recent activities of the Ohio Aerospace Institute.
 - Ms. Heyward started her testimony with the current collaborative activities in the industry, universities, and federal labs.
 - She noted that they are engaging in ongoing research projects in materials, structures, instrumentation, aero and space propulsion, and computational modeling of aerospace systems. These projects are being carried out at NASA Glenn Research Center and the Air Force Research Laboratory.
 - She then elaborated on their work in advanced manufacturing technologies for aerospace consortiums.
 - She noted that OAI is focused on identification of standards and technology gaps to enable full exploitation of AM technology for aerospace applications.
 - Ms. Heyward then elaborated on the following relevant activities that OAI is working on:
 - Their engagement with Honeywell, Pratt & Whitney, Rolls Royce and NASA GRC in collaborative funding of research efforts to characterize and mitigate commercial jet engine noise through a 15 year collaboration.
 - Halon Alternatives for Advanced Propulsion Systems (HAAPS) Consortium which engages Airbus, Boeing, Bombardier, Embraer and Textron in collaboration to identify alternatives to halon in fire suppression systems for engines and APU's.
 - Engineered Surfaces, Materials and Coatings (ESMC) for Drag Reduction Program with the Air Force: A competitive program looking for technology from new sources.
 - Distributed Engine Controls Working Group which engages Air Force, NASA, other Federal agencies and multiple companies to develop technologies for distributed engine controls.
 - Propulsion Instrumentation Working Group which engages Air Force, NASA, other Federal agencies and multiple companies to develop new instrumentation for engine monitoring and test in harsh environments.
 - Versatile Affordable Advanced Turbine Engine Contract – AFRL, \$20M ceiling
 - 5 active delivery orders which involve multiple Ohio companies/universities. Delivery orders include:
 - Advanced Integrated Controls
 - Probabilistic Analysis Consortium for Engines (PACE)

- Guide Consortium
 - Distributed Intelligent Robust Controls Technologies (DIRCT)
 - Digital Thread/Digital Twin (DT/DTw)
- Ms. Heyward then went on to elaborate on OAI's current business assistance activities:
 - Federal and State Technology Partnership (FAST), which is OAI assisting Ohio and Midwest small women, minority, and veteran owned businesses in accessing SBIR funds in aerospace related technology development.
 - Jumpstart Entrepreneurial Network. OAI supports this Third Frontier supported activity by providing SBIR proposal assistance and training to small businesses.
 - Market Development Cooperator Program (Commerce), which is coming to conclusion. OAI assists companies in accessing new export markets in aerospace via support for attendance at international trade fairs, trade missions, and through training in export related topics.
 - The Circle Hopkins Alliance (Cuyahoga County), which OAI is working with NASA Glenn, cities of Cleveland, Brook Park, Fairview Park, Berea, North Olmsted to cast and market area immediately adjacent to Cleveland Hopkins International Airport as an economic development district.
- Ms. Heyward then listed their current and upcoming events/interactions:
 - OAI joined the Workforce Working Group of OAATC.
 - Northern Ohio UAS Association: Board and meeting hosting.
 - CWRU Aerospace Engineering Industry Advisory Board, continued participation on OSU Aerospace Advisory Board, University of Cincinnati Advisory Board.
 - OAI briefed Ohio Engineering Deans Council on June 30 to discuss collaborative possibilities.
 - The US – Canada Aerospace Technology Exchange which occurred September 28-30.
 - Aerospace States Association Foreign Direct Investment Exposition in Los Angeles, late October.
 - OAI hosted Ohio Development Services Agency DoD Procurement Economic Impact Evaluation Model regional workshop on October, 28th.
 - OAI led Ohio participation for AirTech International Aerospace Supply Fair in Munich November 3rd-5th.
- Ms. Heyward concluded her testimony by elaborating on OAI's current workforce development activities:
 - The Ohio Space Grant Consortium which is NASA funded and matched by participants 1-1; it engages 23 Ohio institutions of higher education plus NASA,

AFRL and provides undergraduate scholarships and graduate fellowships to US Citizen students attending Ohio institutions seeking STEM or STEM education related degrees. They currently have 50 undergraduate scholarships and 10 graduate fellowships awarded this year.

- CC-STARS: A collaboration between OSGC and multiple community colleges (Lorain, Cuyahoga, Columbus State, Sinclair) to support student scholarships, transition from 2-year to 4 year institutions, and project based activities.
 - FIRST Robotics, a program OAI continually supports.
 - Ohio Means Internships which has partnerships with multiple colleges/universities.
 - AFRL Senior Capstone Project which is continuing activity that supports engineering students' senior capstone projects responsive to AFRL technology challenges.
- Representative Baker commented by thanking Ms. Heyward for all that OAI does. She also noted that students are very engaged in their programs that OAI provides.
 - Chairman Perales thanked her for her testimony and noted that OAI is crucial in bringing different aspects of Ohio aerospace together.
 - Chairman Perales then introduced Mark Brown to present his workgroup's slide with Outreach & Branding.
 - Mr. Brown began his presentation by outlining the 3 main elements needed for Outreach to be successful. These elements include:
 - Marketing (which is non-existent)
 - Public Relations
 - Messaging (which is very limited)
 - Mr. Brown then noted that it is imperative that the committee formally organize and charter all three activities.
 - He also noted that in the commercial world, marketing is the process of taking your goal and translating it to your clients, which is imperative.
 - He then stated that the Public Relations department is the transmission mechanism that highlights the accomplishments of the committee.
 - Mr. Brown emphasized the need to mature the 3 elements through the following recommendations:
 - The first is to open the doors for a business working group. A fully comprehensive approach is necessary in which all aspects of the industry come together, from parts and components to commercial and academia aspects.
 - He also noted that the committee needs to tailor a plan to incentivize companies to come to Ohio to do business.

- Mr. Brown then reiterated that the committee should deeply consider publishing and displaying all the great things Ohio is doing in the aviation and aerospace industry.
- Mr. Brown then surfaced the idea of creating a full-time position of an OAATC Director of Marketing.
 - He stated that his person would be responsible for the aforementioned recommendations.
 - This person to fill this position would also facilitate the previously suggested business working group.
 - He noted that the person to fill this position could come from any industry, as long as their qualified.
- Mr. Brown concluded by suggesting the authority to proceed and deeply consider these recommendations.
- Mr. Brown highlighted the fact that all the raw material is available and that it is time to start the campaign.
- Ms. Louscher added that there is messaging out there being done in “pockets.” She then stated that a unified message is needed to be pushed out at the State level through a messaging campaign to rival other exemplary states.
- Dr. Russo also added that this campaign would be needed to be done from the top and eventually translate downwards; preliminary leadership is needed in order to be effective.
- Chairman Perales thanked Mr. Brown for the update.
- Dr. Russo then began presenting the Workforce Development Group updates.
 - Dr. Russo noted that a detailed report would be provided by February.
 - He then stated that his workgroup will be “on-call” to make sure everything is properly implemented.
 - Dr. Russo then went on to reiterate the groups 3 recommendations:
 - Creating a business round table; He suggested the idea that it would include business CEOs only. This would enable the round table to focus on economic aspects primarily.
 - The next recommendation is to coordinate with academia to pick 3 or 4 major aerospace companies to work with local universities to develop a pipeline starting with early age students and facilitate their path to the aerospace industry.
 - This would in turn eliminate the need for tedious interview processes and the possibility of hiring potentially non-suitable employees.
 - The final recommendation is in regards to Project Lead the Way. Dr. Russo stated that it could more prevalent in Ohio through a targeted program for

aerospace. Currently, only 18 high-schools are engaged in the program; Dr. Russo stated that this number needs to increase.

- Chairman Perales thanked Dr. Russo for his updates and then introduced Dr. Paul Orkwis with the Technology Development Workgroup.
 - Dr. Orkwis started the workgroup's updates by noting that innovation hubs, such as Silicon Valley, are not present in Ohio because there is no large institution present to instigate such a hub. Dr. Orkwis brought up the notion that such an innovation hub is possible in Ohio if there was unification in the aerospace industry and academia.
 - Dr. Orkwis then mentioned the need for a catalogue of research by an independent institution that is not linked to a university, government, or business.
 - Dr. Orkwis recommended OAI as a natural candidate and used OFMJC as an example.
 - Dr. Orkwis then noted the need for unification cannot be emphasized enough; coordination on the academic side is also necessary.
- A member of the audience, Todd Colquitt, noted that a virtual portal has been talked about already by other entities. He questioned the committee by asking if there is any overlapping occurring.
 - Ms. Louscher noted that a lot of the subgroup's recommendations are overlapping. It is imperative that in a more informal setting, "we cross reference and coordinate all our ideas." She noted that independent paths are constantly leading at the same conclusion.
- Chairman Perales thanked Dr. Orkwis for his updates and recommendations. He then introduced Tony Bailey with the Industry Support workgroup.
 - Mr. Bailey started his updates by identifying a broad range of focus areas for his group.
 - Mr. Bailey then took time to applaud the workgroup for taking initiative to move tax reliefs forward.
 - He stated that their proposed tax relief ideas are now in the hands of the Ohio Legislative Service Commission, who are currently drafting the information in a legislative format.
 - Mr. Bailey noted that the NBAA was reached out to and that the CEO offered to help with analysis of the tax reliefs.
 - Mr. Bailey then stated that he spoke with government relations officials of the NBAA to gather additional data.
 - He also added that his workgroup has been working with the Technology Development workgroup to foster initiative within the industry.
 - Mr. Bailey also noted that the workgroup is working with GE Aviation to initiate and promote aviation manufacturing within the state.

- The workgroup is also working on research and development initiatives in 3 primary areas:
 - Facilitating Job Growth through Ohio Federal Agencies policies on R&D activities.
 - Understanding the R&D Inventory of Assets in the State.
 - Engaging in Small Business Innovation Research (SBIR) expansion investments.
- Ron Shroder noted that businesses understand the nuances to enable R&D in the state and elevate it to another level, not just at the small business level.
 - He also stated that the SBIR program noted that a lot of emerging technology is usually halted at earlier stages due to lack of funding and that allocation of funding to enhance the facilitation of progression of technology through the industry and federal sides is needed.
- Mr. Bailey concluded the updates by outlining the next steps of the workgroup:
 - Continue to work to advance the Aviation Tax Exemption initiatives.
 - Continue discussions with GE Aviation to further understand the needs of aviation product manufacturers in the state to see how we can help foster growth.
 - Continue to work on Small Business Innovation Research (SBIR) opportunities for the aviation industry in the state.
 - Continue to collaborate with the other work groups.
- Chairman Perales thanked Mr. Bailey and the workgroup for their updates.
- Chairman Perales then introduced Jay Jabour with the Installations Support workgroup.
 - Mr. Jabour started the updates by reiterating that workgroup's 3 priorities:
 - Identify recommendations on how to coordinate local and regional efforts that are focused on supporting Active/Guard/Reserve/Research installations in upcoming or potential force structure actions.
 - Identify economic or regulatory recommendations for the committee that would enhance Ohio businesses and suppliers to State and Federal Installations to better posture those installations during force structure evaluations.
 - Identify specific workforce related initiatives that Federal installations could benefit from and recommend to the committee how to implement them.
 - Mr. Jabour then stated the need to identify key federal installations using existing resources through 3 categories
 - Active Military Installations
 - National Guard Installations
 - NASA Installations
 - Mr. Jabour also noted the need to contact leadership at identified installations and identify any local activities or organizations that can or do provide support during federal force structure actions by location.

- He concluded by recommending that the OAATC a structure to bring together local and regional activities.
 - The committee would do this by anticipating future periodic coordinating meetings to:
 - Build consistent state messages for use during federal force structure actions
 - Identify state activities that might help better posture installations
 - Identify for the state vulnerabilities by location
- He also noted that it is likely that this recommendation is beyond the scope of the OAATC, and that this charter will need a “home” somewhere in the state.
- Chairman Perales thanked Mr. Jabour for his workgroup’s updates.
- Chairman Perales then asked the committee and the audience if they had any final comments or questions; there were none.
- Chairman Perales concluded the meeting by encouraging the committee and the audience to spread the word of possibly acquiring interns or volunteer contributors for the OAATC.
- Chairman Perales thanked all of the committee members, witnesses and audience members for attending the meeting.
- Chairman Perales adjourned the meeting at 11:58 am.



Ohio Aerospace and Aviation Technology Committee

February 24th, 2016 – Approved Minutes

Statehouse Room 017

Chairman Perales called the meeting of the Ohio Aerospace and Aviation Technology Committee (OAATC) to order at 10:04 AM.

- The roll was called. A quorum was present.
- Chairman Perales asked members to review the minutes from the previous meeting. With no objections the minutes were approved.
- Chairman Perales noted that committee days are very busy. He reiterated that legislators must come and go to attend other sessions.
- Chairman Perales also thanked committee members and the audience for volunteering their time.
- Chairman Perales called upon legislative aid, Andy Swaim, to provide pertinent legislative updates to the committee. Go through committee members and audience to introduce themselves
 - Mr. Swaim noted that 2 bills that have changed status since 12/9.
 - Mr. Swaim brought to everyone's attention House Bill 386, a bill to add the Wright Flyer to the State Seal.
 - He noted that the bill got voted out of committee, which is farther than any previous attempts to add the Wright Flyer to the State Seal has gone.
 - Mr. Swaim also brought to everyone's attention Senate Bill 251, which would regulate the use of drones in gathering evidence by law enforcement.
- Chairman Perales emphasized that one of the committee's next steps is to request funding, which will be outlined in the upcoming annual report.
- Chairman Perales then stated that Bryan Wynne, the president and CEO of the Association for Unmanned Vehicle Systems International (AUVSI), has been invited to speak in Columbus and asked members of the audience to join.
- Chairman Perales then brought up member appointment.

- He noted that a legislative member would first need to be appointed (to fill in Senator Widener's position).
- Chairman Perales then stated that once that position was filled, the opening for a committee member could then be filled.
- Chairman Perales invited Representative Boggs and Representative Baker to take pictures with the OSU flight team who recently won an award for the most outstanding collegiate aviation program.
 - Representative Boggs and Chairman Perales congratulated the Ohio State University Flight Team for their championship trophy. Representative Boggs commended the Flight Team for their excellent work and representation of our state and the Ohio State University.
 - Once pictures were taken, faculty advisor Seth Young, who is also director of aviation studies at the Ohio State University, congratulated the flight team for their excellence.
- Chairman Perales once again congratulated the Ohio State flight team and then invited Glenn Richardson from JobsOhio to testify.
 - Mr. Richardson thanked the members of OAATC and Chairman Perales for allowing him to providing him the time to update the committee.
 - Mr. Richardson then announced that Tim Sweeney has joined JobsOhio as Sector Director of Aerospace & Advanced Manufacturing. He mentioned that Mr. Sweeney is a great addition to the team due his networking and his input regarding the aerospace industry.
 - Mr. Richardson stated their aerospace sector is built on a platform of technology. Specifically through lightweight materials, additive manufacturing, and sensors/autonomy.
- Chairman Perales thanked Mr. Richardson for his testimony and asked if anyone had any questions. There were none.
- Chairman Perales invited Superintendent Dave Deskins to testify on behalf of Greene County Career Center.
 - Mr. Deskins thanked Chairman Perales for allowing him to present his organization's initiatives.
 - Mr. Deskins presented to the committee his organizations' Take Flight initiative.
 - The initiative encompasses the overall need to fill positions in the aerospace sector with students involved in STEM programs.
 - Mr. Deskins stated that the GCCC worked with The Greentree Group to conduct an in-depth analysis on potential workforce needs and solutions.
 - Mr. Deskins concluded that the Take Flight initiative is the initial design of a unique, world-class GCCC transformation to better serve the workforce needs of the Dayton region. He also noted that this initiative has the potential to expand to the entire state and possibly even the country.
 - Mr. Deskins then invited Chris Jones from The GreenTree Group to elaborate.
 - Mr. Jones emphasized that their organization is aiming to find a solution to find students work in the aerospace sector through two different pathways.

- The first pathway would be to ready students for post-secondary education with local college and university courseware.
 - The second pathway would prepare students to fill local job needs with realistic training environments and college credit.
 - Mr. Jones reiterated the notion that they could introduce students at the as early as the 9th grade level to STEM concepts.
 - He emphasized that their program would induce students to be more attracted to STEM programs by enabling them to be directly incorporated into the aerospace, manufacturing, and IT sectors.
 - He also stated that their program would directly target workforce needs.
- Mr. Deskins concluded his testimony by thanking the committee and reiterating their passion for increasing exposure through the mentioned avenues.
- Chairman Perales thanked Mr. Jones and Mr. Deskins for their time and their update. He also stated his appreciation for their scope to one day incorporate all of Ohio, not just Greene County.
- Dr. Paul Orkwis stated that it's a great idea and that the University of Cincinnati would love to one day partake in the opportunity.
- Susan Louscher from the University of Akron stated that she is also excited about the vision. She stated that her work group has had discourse about career centers and providing similar opportunities, especially through regional hubs.
- Ms. Louscher also noted that they are trying to figure out how to tap into FAA requirements for the job positions so that students could be aligned with FAA standards when entering the workforce.
- Mr. Richardson stated that JobsOhio has been working the FAA in getting adequate licensure and complete testing to comply with the industry standards that Ms. Louscher mentioned.
- Vincent Russo mentioned that education is only half the problem. He emphasized that "soft skills" would need to be incorporated into the program so that students would have not only the education, but the proper etiquette and demeanor for the workplace.
- Mr. Deskins agreed that students should be aware of soft skills in the workplace; he noted that it is an important incorporation that his organization takes into account.
- Dave Williams stated that they would love to help Mr. Deskins with this effort at the Ohio State University.
- Mr. Deskins noted that collaboration is key in order to make a comprehensive, aligned program.
- Mike Heil added that Northeast Ohio is a large manufacturing contributor and that his organization would be interested in supporting this endeavor as well.
- Mr. Deskins thanked Chairman Perales and the committee for their input.
- Chairman Perales then invited Carlos Grodsinsky with OAAC asked to testify.
 - Mr. Grodsinsky began his testimony with OAAC's overall project identification, which encompassed the need to align and identify possible teaming and partnership arrangements to support accelerated/proactive engagement of Ohio aerospace industry firms.

- Mr. Grodsinsky then highlighted the importance of industry recruitment; two new industry participants had been added to represent Dayton and NEO service organizations (Ball Aerospace and Peerless).
- He also mentioned the need for state integrated alignment, stating that they have formal representation on OFRN and OAATC.
- Mr. Grodsinsky went on to mention their key initiatives for 2016.
 - The first main initiative is to strengthen and support Ohio executive oversight and legislative advocacy (through OAATC, JobsOhio, and OFMJC).
 - The next initiative is to continually pursue attracting new companies and opportunities.
 - The third initiative that was mentioned is to facilitate industry alignment and support of Ohio federal research networks to achieve long term competitiveness in aerospace technology areas.
 - The final initiative is to develop programs and alignment to increase federal expenditures in focus areas and drive federal aerospace asset use.
- Mr. Grodsinsky concluded his presentation with the key project areas that OAAC is focusing on for 2016.
 - The first focus area is related to NextGen through an airspace navigation system that would be developed with the FAA and partner airports.
 - The next focus area would be in regards to Unmanned Aerial Systems (UAS) in an effort to develop short, mid and long term goals and objectives of Ohio's UAS industry.
 - The final project area relates to "Space Internet Small Satellite Supply Chain," which would ultimately identify supplier contracts and develop/pursue OEM site locations.
- Mr. Grodsinsky then asked the committee if they had any questions upon concluding his testimony. There were none.
- Chairman Perales thanked Mr. Grodsinsky for his testimony.
- Chairman Perales then asked Mike Heil to testify on behalf of OAI.
 - Mr. Heil began his testimony by outlining the overall mission for OAI, which is to enhance their partners' aerospace competitiveness through research and technology development, workforce preparedness, and engagement with global networks for innovation and advocacy.
 - Mr. Heil then went on to describe OAI's economic impact on Ohio.
 - Mr. Heil noted that OAI's employment impact was approximately 1,702 jobs.
 - He also noted that their output (total value of goods and services) was approximately \$232.3 million.
 - OAI's activities also generated, on average, 95 jobs per year and \$12.9 million in output each year.
 - Mr. Heil went on by outlining OAI's engagement with the aerospace community in Ohio, stating their associate membership to Aerospace States Association

- (ASA) and the Aerospace Industries Association (AIA), as well as their corporate membership with the American Institute of Aeronautics and Astronautics (AIAA).
- Mr. Heil concluded his testimony by outlining OAI's upcoming events, which are the AIAA Congressional Visit Day (March, 17th), the AIA Spring Supplier Management Council (March 15th – 17th), and the ASA Annual Meeting at Oshkosh, Wisconsin (July 25th – 26th).
 - Chairman Perales thanked Mr. Heil for his testimony then went on to ask the working groups to provide updates.
 - Ms. Louscher started the work group updates on behalf of the Outreach & Branding work group.
 - The first recommendation Ms. Louscher outlined was the objective of facilitating an OAATC working group meeting to clearly define and document the committee's goals as well as identifying an initial target audience for each goal.
 - Ms. Louscher then went on to identify other objectives pertaining to the 1st recommendation, which are to begin cataloging positive messages as well as identifying specific projects for action.
 - The 2nd recommendation that Ms. Louscher brought to the committee's attention was to create a full time position of an OAATC Director of Marketing.
 - Ms. Louscher then outlined the actions that her work group has taken since the last committee meeting, which were to outline a possible marketing campaign for putting the Wright Flyer on the Ohio State Seal, establishing an Ohio Aviation Hall of Fame, and attracting aerospace companies to Ohio.
 - Dr. Vince Russo went on to give a status report for his work group, the Workforce Development Group.
 - Dr. Russo mentioned that there were three major recommendations being finalized and that future activities will depend on the success of implementing those recommendations.
 - The first recommendation would be to create an Ohio Aerospace and Aviation business Round Table.
 - The second recommendation is to develop and implement "targeted" workforce development activities among Aerospace and Aviation industries and their nearby community colleges and high schools.
 - The final recommendation is to develop a relationship between the state and Project Lead the Way that would lead to increasing interest in STEM careers related to Aerospace and Aviation.
 - Dr. Paul Orkwis then testified for the Technology Development work group.
 - Dr. Orkwis began by outlining the work group's goals for the first half of 2016 which are to:
 - Start the Ohio "Virtual" Research Collaborative.
 - Reach out to FMJC and industry to identify areas that would benefit from the mentioned collaborative.
 - Coordinate an academic discussion of barriers to collaboration, possibly through the Ohio State Engineering Dean's Council.

- Effectively communicate with other working groups regarding joint areas of interest.
 - Ron Shroder then testified on behalf of the Industry Support work group.
 - Mr. Shroder began by outlining the progress of his work group.
 - The work group is continually working to advance the Aviation Tax Exemption initiative.
 - The work group has also continuously been discussion with Aviation product manufacturers to see how they can help foster growth in the state.
 - Mr. Shroder then went on to describe the Industry Support work group's concerns.
 - The 1st concern is the pending FAA Reauthorization bill and the 2nd concern is the Sales Tax Exemption hearing. Mr. Shroder states the members of the OAATC should be acquainted with these concerns for further possible implications.
 - Mr. Shroder concluded his update by stating his work group's next steps, which are to:
 - Continue to work on Sales Tax initiatives.
 - Continue to work with aviation manufacturers.
 - Continue to work on Small Business Innovation Research (SBIR) opportunities for the aviation industry in the state.
 - Jay Jabour concluded the work group updates by testifying on behalf of the Installations Support work group.
 - Mr. Jabour stated that his work group identified three priorities, which are to:
 - Identify recommendations on how to coordinate local and regional efforts that are focused on supporting Active/Guard/Reserve/Research installations in upcoming or potential force structure actions
 - Identify economic or regulatory recommendations for the committee that would enhance Ohio businesses and suppliers to State and Federal Installations to better posture those installations during force structure evaluations
 - Identify specific workforce related initiatives that Federal installations could benefit from and recommend to the committee how to implement them
 - Mr. Jabour also noted that his work group reviewed the Ohio Federal Military Jobs Commission report and stated that there was a unanimous consensus in regards to supporting an Executive Director position.
- Chairman Perales thanked all the work groups for their updates.
- He also reiterated the necessity that the work groups do not overlap their recommendations since everyone is volunteering their time.

- Chairman Perales then went on to ask Bob Tanner if he could elaborate on the FAA Reauthorization bill.
- Mr. Tanner stated that the bill aims to drive the industry, however, what's different about this bill is that it aims to privatize air traffic control by taking control away from the FAA and into the control of an 11 member board.
- Chairman Perales thanked Mr. Tanner for his elaboration and opened up the floor for members to comment or provide questions. There were none.
- Chairman Perales thanked the members and the audience for their time, energy, and efforts. He then invited the audience to network and talk once the meeting was adjourned.
- Chairman Perales adjourned the meeting at 12:03 pm.



Ohio Aerospace and Aviation Technology Committee

May 11, 2016 – Approved Minutes

Statehouse Room 017

- Chairman Perales called the meeting of the Ohio Aerospace and Aviation Technology Committee (OAATC) to order at 10:06 AM.
- Chairman Perales thanked committee members and the audience for volunteering their time to attend the OAATC meeting.
- Chairman Perales reiterated this meeting is scheduled for 10:00 am – 12:00 noon and that the meeting will conclude at noon to accommodate the volunteers' schedules.
- Chairman Perales asked committee members and audience to introduce themselves including their affiliation.
- Chairman Perales stated that due to a full agenda this meeting will veer from the published agenda to accommodate schedules and to respect everyone's time.
- Chairman Perales mentioned the attendance of Andy Swaim, former Legislative Aide, due to new Legislative Aide, Brent Rossman not being able to attend. Intern, Kareem Amr, will act as Aide for today's meeting.
- Chairman Perales introduced C.D. Moore (National Aviation Heritage Alliance).
- Mr. Moore thanked Chairman Perales and the Committee for the opportunity to present the Grand Opening Regional Working Group, a grand opportunity to promote Ohio and the Dayton region.
 - The grand opening of the 4th Hanger at the National Museum of the United States Air Force is scheduled for June 8, 2016 with the grand opening weekend scheduled for June 11-12, 2016.
 - Mr. Moore mentioned the mission of the Grand Opening Regional Working Group:
 - Support the USAF and its aviation heritage.
 - Increase visitors to the National Museum of the United States Air Force.
 - Encourage visitors to explore the Dayton region and all of Ohio.
 - Efforts represent the first-time community organizations that joined together to promote the opening of the new building at the Museum.
 - Mr. Moore mentioned the participants of this effort (please refer to distributed slide presentation). Some of the participants are not associated with aviation, but are excited about the USAF Museum.

- Mr. Moore encourages people to explore and visit the USAF Museum, the Dayton region and all of Ohio while visiting other attractions in the state. 2015 attendee figures:
 - National Museum of the US Air Force – 1 million visitors.
 - Kings Island and Cedar Point – 3.2 million visitors each.
- Mr. Moore reiterated the USAF Museum has free parking and free admission, showcases the rich heritage of aviation, and although the USAF Museum did not receive a Space Shuttle, the USAF Museum has a training module enabling visitors to experience what it is like to be in a Space Shuttle.
- Mr. Moore mentioned STEM Learning Nodes:
 - The USAF Museum offers diverse learning experiences to a full range of audience.
 - Will accommodate student-centered, technology-enhanced active learning through hands-on programs, demonstrations and lectures, as well as extensions of the exhibit experience.
- All funds were raised through the Air Force Museum Foundation through private donations.
- Mr. Moore shared the economic impact the USAF Museum has on the Dayton region and the impact of increased visitors to the area.
- Mr. Moore mentioned the advertising efforts associated with the Grand Opening led by AF Museum Foundation with support from Tourism Ohio, CVBs and NAHA.
- Mr. Moore mentioned other significant upcoming opportunities to the Dayton region:
 - Inaugural 2016 Presidential Debate at WSU in September.
 - The Wright Brothers HBO mini-series led by Tom Hanks.
- Mr. Moore stated “what we can do”:
 - Promote the USAF Museum in publications and communications (Grand Opening weekend and beyond).
 - Provide a point of contact for social media activities.
 - Identify opportunities to make this presentation.
- Mr. Moore presented contacts to obtain more information.
 - National Museum of the United States Air Force, Public Affairs Division, NMUSAF.MUP@US.AF.MIL
 - Regional Working Group, Tony Schulimbrene (937) 475-7627, AFS@AVIATIONHERITAGEAREA.ORG
- Chairman Perales asked if there were questions or comments for Mr. Moore concerning his presentation.
 - Mr. Mike Heil mentioned another important event for Ohio is the Republican National Convention in Cleveland, July 18-21, 2016.
- Chairman Perales introduced Ms. Colleen Ryan, former Commander at the Wright-Patterson Air Force base, to discuss the Ohio Federal Military Jobs Commission (OFMJC) Final Report (please refer to distributed slide presentation).
- Ms. Ryan mentioned the Vectren Air Show is June 18-19, 2016.
- Ms. Ryan addressed the agenda for OFMJC presentation:
 - Legislative Task

- Develop and maintain an on-going strategy for retention and growth of federal-military agencies and missions and associated private sector jobs in the state of Ohio.
 - Such a strategy did not exist before this commission. There are 30 or more US states which have extensive strategies around their military assets. Ohio did not until the OFMJC was formed.
- Commission Background
 - Legislation passed in September 2014 with monthly meetings beginning in November 2014.
 - Initial product delivered to state by Commissioners in April 2015; final report submitted to state in December 2015.
- Commissioners
 - Governor, Senate and House appointed Commissioners
- Chairman Perales mentioned the Commissioners are highly qualified in the areas for which they were appointed.
- Ms. Ryan mentioned the state-wide representation to speak on behalf of all state constituents
 - Chapter 1 – Facilities and Installations
 - Look at facilities and installations to review their strengths, weaknesses and what needs to be done to protect them from future BRAC or down-sizing. How to attract growth to those installations.
 - Number 1 recommendation: Establish a Facilities Executive Director who works with the Ohio Adjutant General.
 - To review other recommendations, please refer to distributed slide presentation.
 - Chapter 2 – Research and Development
 - Mr. Dennis Andersh will present the successes from the research network.
 - Chapter 3 – Small Business
 - Develop a connection with small businesses and an educational outreach to educate small businesses on federal contracting opportunities.
 - Chapter 4 – Workforce
 - Link education, job training and placement with federal installations and private sector contractors seeking workforce placement.
 - Attract veterans to stay in Ohio, bring more people to work in federal installations.
 - Retaining, retraining, recruiting veterans to Ohio.
 - For workforce needs in Ohio, please refer to distributed slide presentation.
 - Chapter 5 – Structure and Plan Next Steps
 - Budget Requirements
 - Ms. Ryan mentioned there are funds for the previously mentioned Executive Director position. Although, at this time no action has been taken.
 - Summary
 - The OJMJC report may be viewed at <http://ong.ohio.gov/OFMJC/011516-CommissionReport.pdf>
 - At this time, the report and recommendations are not being addressed except for Research and Development which Mr. Dennis Andersh will address.

- Ms. Ryan shared a letter dated April 12, 2016 from the Deputy Secretary of Defense to the Chairman of the Committee and Arms Services.
 - Ms. Ryan stated that from this letter there will be another BRAC and if Ohio doesn't get serious about protecting our military installations, we will lose.
- Ms. Ryan mentioned Representative Perales and the OAATC can have an impact on the OFMJC report. She mentioned the Speaker is putting together another committee to take recommendations and put into action.
- Chairman Perales made a note that he will check on the status of the Executive Director position.
- Chairman Perales mentioned that the slides of this presentation will be posted on the OAATC website to share with organizations to move communication to as many individuals as possible.
- Chairman Perales asked for questions or comments from the group.
- Mr. Vincent Russo mentioned one of the recommendations of the OAATC Workforce and Development workgroup is to establish a business round table lead by senior leaders of big businesses in aerospace. Mr. Russo asked Ms. Ryan if there is a need for a leadership lead organization.
- Ms. Ryan stated there are leaders in the portion which Mr. Andersh will address.
- Chairman Perales thanked Ms. Ryan for her presentation.
- Chairman Perales thanked the international individuals attending the meeting who will see how Ohio legislative committees work.
- Chairman Perales introduced Mr. Dennis Andersh (Wright State Applied Research Corp./Wright State Research Institute) and Mr. Martin Kress (Ohio State University).
- Mr. Kress reminded the group that the Ohio Federal Military Jobs Commission was created to be better equipped when BRAC comes around.
- Mr. Kress mentioned the Research & Development cannot be the legacy of OFMJC.
- Mr. Kress mentioned there is no state support for requirements at major installations by integrating our universities.
- Mr. Kress mentioned the support from JobsOhio, Third Frontier, AFRL, NASA Glenn, the Navy and NASIC is phenomenal.
- Chairman Perales mentioned this OAATC meeting is during a session day when Legislative colleagues are able to attend.
- Chairman Perales asked Legislators to introduce themselves:
 - Senator Bill Beagle (5th District)
 - Senator Joe Uecker (14th District)
 - Representative Sean O'Brien (63rd District)
 - Representative Nan Baker (16th District)
- Chairman Perales asked Mr. Dennis Andersh to continue the OFMJC presentation.
- Mr. Andersh stated the AFRL, NASA Glenn, NASIC and the Naval Medical Research Unit have been actively engaged throughout entire OFMJC process with recommendations for the next 10 – 15 years.
- Mr. Andersh stated the focus is on Applied Research to create industry jobs to better support WPAFB, NASA Glenn and industry in Ohio.

- Mr. Andersh mentioned the creation of 6 Centers of Excellence of which only 4 received awards through Round 1.
- Mr. Andersh mentioned the creation of the Commercialization and Workforce Development Support Team with Clark State University and Lorain County Community College.
- Mr. Andersh mentioned the existence of an Executive Review Board and Technical Review Council with members throughout the state. The Committee is looking for additional industry individuals to be on these boards/councils with next review scheduled for June 2016.
- Mr. Kress mentioned the importance of the Wright State Applied Research Corp. (WSARC) for producing RFPs, white papers, proposals, and evaluation processes.
- Mr. Andersh gave an update on the OFRN funding allocation (please refer to distributed slide presentation).
- Mr. Kress mentioned interest with FAA and DARPA (Defense Advanced Research Project Agency, a national based firm).
- Mr. Andersh discussed Round 1 – Technical Awardees with collaboration between universities.
- Mr. Andersh discussed Round 2.
 - Completed a technical review committee evaluation, requested proposals from 13 projects across the state using review process similar to DARPA.
 - Selected white papers/projects with each Center of Excellence (CoE) receiving a project.
 - RFP is ready to receive full proposals.
 - Focus is workforce development, job creation, commercialization and research sources throughout the country.
- Mr. Kress mentioned they are near \$100M in new proposals formulated by the team.
- Chairman Perales thanked Mr. Andersh and Mr. Kress for their time and presentation.
- Chairman Perales asked for questions and comments.
- Chairman Perales recognized the arrival of students from the Dayton STEM program.
- Chairman Perales called Therese Griebel (NASA Glenn) to the podium to address one of the objectives of OAATC (spreading the word about aviation and aerospace, networking and hold the OAATC meeting at other locations).
- Ms. Griebel stated on behalf of Janet Kavandi, NASA Glenn’s Research Center Director, an invitation to OAATC to hold a field meeting at NASA Glenn on Thursday, June 23, 2016 at the 400-person capacity Mission Integration Center. Before or following the meeting, OAATC committee members will have opportunity to have lunch with Dr. Kavandi and members from the center senior leadership team and tour the center’s world-class facilities.
- Chairman Perales thanked Ms. Griebel and NASA Glenn for this opportunity for an open meeting of OAATC. For those unable to attend there will be video capabilities to as part of the meeting.
- Ms. Griebel mentioned 3 other NASA Glenn exciting events:
 - May 24 – Technology Day
 - May 21–22 – Open House to celebrate 75th year of NASA Glenn Center
 - June 11–12 – Open House for Plumbrook Station in Sandusky

- Chairman Perales mentioned May 24, 2016 event with Brian Wynne, President and CEO of Association of Unmanned Vehicle Systems International (AUVSI). This event is for Legislative colleagues to understand what can be done for Ohio to accommodate and capture impact of UAVs.
 - Ohio State University will host Mr. Wynne at the Blackwell Hotel on May 24, 2016 (please refer to the OAATC website for details).
- Chairman Perales introduced the OAATC Workgroup updates.
- Outreach and Branding presented by Mr. Tony Bailey, newly appointed lead
 - Recommendation 1 – facilitate an OAATC group meeting to:
 - clearly define and document OAATC goals
 - Identify initial target audiences for each goal
 - Begin cataloging positive messages
 - Identify specific projects for action
 - Recommendation 2 – create a full time position of OAATC Director of Marketing
 - Actions:
 - outline a marketing campaign for an opportunity as an example of what could and should be done
 - Put Wright Flyer on state seal
 - Establish an Ohio Hall of Fame in Columbus to recognize individuals and organizations that have excelled through an annual enshrinement event and use of the facility for education, motivation and tourist attraction
 - Attract aerospace companies to Ohio
- Chairman Perales asked for questions or comments pertaining to the Outreach and Branding Workgroup presentation
- Chairman Perales discussed the 5 workgroups for OAATC: Outreach and Branding, Workforce Development, Technology Development, Industry Support, and Installations Support
- Chairman Perales mentioned the opening for an OAATC committee member which requires at least 4 legislators present to proceed
- State Senator, Joe Uecker introduced himself. Senator Uecker is replacing Senator Chris Widener.
- 20 applications received to fill the open membership position. Chairman Perales mentioned those applications will be kept on file in the event of another vacant position. Legislative committee members reviewed all 20 applications.
- Chairman Perales asked for nominations.
- Representative Sean O'Brien nominated Carlos Grodsinsky, Chief Operating Office and Senior Vice President of Technology, ZIN Technologies and Chair of Ohio Aerospace & Aviation Council, to fill position.
- Senator Joe Uecker seconded the nomination.
- Vote called for and unanimously approved and nomination closed.
- Chairman Perales asked for formal nominations.

- Representative Sean O’Brien formally nominated Carlos Grodsinsky, Chief Operating Office and Senior Vice President of Technology, ZIN Technologies and Chair of Ohio Aerospace & Aviation Council, to fill position.
- Senator Bill Beagle seconded the nomination.
- Vote called for and unanimously approved and nomination closed.
- Mr. Grodsinsky formally appointed as OAATC member.
- Chairman Perales stated the importance of a state-wide organization.
- Chairman Perales thanked the legislative members for their participation.
- Chairman Perales introduced Mr. Vincent Russo, OAATC Workforce Development workgroup lead.
- Mr. Russo shared the workgroup’s 3 recommendations:
 - Create an industry-lead Ohio Aerospace and Aviation Business Roundtable.
 - Develop and implement “targeted” workforce development activities among Aerospace and Aviation industries and their nearby colleges and high schools.
 - Develop a relationship between the state and Project Lead The Way (PLTW) that would lead to increased interest in STEM careers related to Aerospace and Aviation.
- Mr. Russo introduced Mr. William White, PLTW Midwest Region Vice President
- Mr. White stated the background and beginning of PLTW
 - non-profit K-12 organization began in 1997 with 8 Science and Math teachers in upstate New York
 - currently in all 50 states in over 10,000 schools – rural, remote, urban, inner city, private
 - attracts kids to learn that education is fun and “cool”
 - Aerospace module is in 1st, 3rd, and 5th grade
 - Aerospace Engineering (PLTW Engineering) - 17 schools
 - Flight and Space (PLTW Gateway) – 23 schools
 - Stability and Motion: Science of Flight (3rd grade module from PLTW Launch) – 40 schools
 - PLTW was in Ohio budget but removed in 2010. Need to get PLTW back into budget.
 - Exposure is the key
 - Kettering Fairmont High School PLTW designed an **airplane oil cap remover** in their Engineering Design and Development course. This design received a patent and the group will donate funds received from patent to Fairmont High School to PLTW program.
 - There are 10,000 jobs annually in Ohio in aerospace. We need to interest our children toward these programs.
- Mr. Russo mentioned the workgroup’s recommendation for the state to re-enter PLTW into the state budget. PLTW Aerospace program is currently in 11 schools but needs to be in 600 schools where it will cost \$10k - \$12k per school.
- Chairman Perales stated this is an excellent program and that there is no need to recreate programs that are already out there.
- Chairman Perales mentioned that Mr. White has met with the Finance Chair and the Higher Ed Chair.
- Chairman Perales asked Mr. White to share his background with the STEM students.

- Chairman Perales asked STEM students if they had any questions or comments.
- Chairman Perales introduced Paul Orkwis, Technology Development workgroup lead.
- Mr. Orkwis gave the workgroup update:
 - Ohio “Virtual” Research Collaborative (OVRC).
 - Don’t step over what is already being done.
 - Coordinate an academic discussion of barriers to collaboration, possibly through the Ohio Engineering Dean’s Council.
 - Working groups lead meeting finds similar goals throughout the OAATC.
- Chairman Perales thanked Mr. Orkwis for the workgroup update and asked for questions or comments.
- Chairman Perales introduced the Industry Support workgroup lead, Mr. Tony Bailey
- Mr. Bailey shared the Industry Support Progress:
 - Continue to work to advance the bill drafted for Aviation Tax Exemption Initiatives
 - Aircraft sales taxed “Fly-away tax” – 32 other states do not tax sale or mechanics of aircraft. This is costing Ohio millions of dollars in revenue yet, does not cost the state anything to implement.
 - Fully developed tax issue – tax all sales not just those who fly-in.
 - Continue to discuss with Aviation product manufacturers to see how we can help foster growth in the state.
- Mr. Bailey shared the Industry Support concerns:
 - The FAA Reauthorization bill – H.R. 4441 – Aviation Innovation, Reform and Reauthorization Act of 2016 was passed by Congress. Mr. Bailey mentioned that the committee is trying to understand the impact to our industry and this focus group specifically.
- Chairman Perales thanked Mr. Bailey for the update.
- Chairman Perales introduced Mr. Mike Heil, Installations Support workgroup.
- Mr. Heil addressed the Installations Support workgroup objectives:
 - Identify recommendations on how to coordinate local and regional efforts focused on supporting Active/Guard/Reserve/Research installations in upcoming or potential force structure actions.
 - Identify economic or regulatory recommendations for the committee that would enhance Ohio businesses and suppliers to state and federal installations to better posture those installations during force structure evaluations.
 - Identify specific workforce related initiatives that federal installations could benefit from and recommend to the committee how to implement them.
- Mr. Heil mentioned the recommendation that OAATC offer expertise to the new Executive Director called for by the OFMJC report to work objective #1 above.
- Chairman Perales mentioned that \$5m is in budget for BRAC installation, bases and federal installations.
- Ms. Ryan mentioned the job description for an OFMJC Executive Director was given to the Governor earlier in 2016. OFMJC has money set aside to cover this position for 2 years.
- Chairman Perales mentioned the last meeting minutes cannot be approved due to not having a quorum present.

- Chairman Perales called on Intern Kareem Amr, to provide pertinent legislative updates.
- Mr. Amr stated that House Bill 386, a bill to add the Wright Flyer to the State Seal was unanimously passed through the state government committee, awaiting to reach House of Representatives floor.
- Chairman Perales will work with the House Speaker to present HB 386 to the House of Representatives before recess for Memorial Day.
- Mr. Amr mentioned House Bill 32 – Aircraft Excise Fuel Tax is being introduced to the House Ways and Means Committee.
- Mr. Amr mentioned Senate Bill 251 – Police-use of drones to gather evidence-regulate – referred to the Government Oversight and Reform Committee
- Mr. Amr stated the OAATC website is in the process of being updated
- Mr. Amr reminded the OAATC that this is the last meeting before the Annual Report is due. Chairman Perales’ office will reach out to committee leads for their assistance and reports.
- Mr. Amr mentioned the OAATC is still working on the Aviation Hall of Fame and Tax-exemption status
- Chairman Perales mentioned again the importance to have Brian Wynne in Columbus to discuss UAVs.
- Chairman Perales asked for comments, questions, further discussion
- Ms. Sue Louscher, OAATC member, thanked Mr. Russo for keeping the OAATC Workforce Development workgroup on task with PLTW, pipeline for engineering and high tech jobs.
- Ms. Louscher introduced Mr. Dave Deskins, Superintendent of Greene County Career Center to discuss a career-center based technician-level program, an FAA pilot program as a model for the nation.
- Ms. Louscher suggests a meeting to discuss this initiative.
- Mr. Dave Deskins mentioned there is continued movement and support from local governments, Greene County school districts, and institutions of higher education for this partnership. They are maintaining contact with the Dayton Development Coalition and Dayton Regional Manufacturing Association and arranging a legislative local leadership education leadership tour for June 2016. They have applied with 4 other career center for grant funding through the Department of Education for robotics engineering and manufacturing equipment. They also partners with Beavercreek City schools for grant toward aerospace project for jet STEM project.
- Mr. Deskins mentioned this is more than a regional program and fits well with Mr. White’s Project Lead The Way program.
- Chairman Perales asked if there were further comments for the good of the order. There were none.
- Chairman Perales thanked the members and the audience for their time and efforts.
- Chairman Perales adjourned the meeting at 11:53 pm.



Ohio Aerospace and Aviation Technology Committee (OAATC)

June 23rd, 2016 – For Approval

NASA Glenn Research Center

Chairman Perales called the meeting of the Ohio Aerospace and Aviation Technology Committee (OAATC) to order at 10:02 AM.

Those in attendance as OAATC Committee members:

Representative Rick Perales, Ohio House of Representatives, 73rd District

Representative Nan Baker, Ohio House of Representatives, 16th District

Senator Joe Uecker, State Senator, 14th District

Dr. Michael Heil, Pres & CEO, Ohio Aerospace Institute (OAI)

Mr. Jeff Rolf, VP of Business Development, Parker Aerospace

Dr. Carlos Grodsinsky, COO/VP for Technology, ZIN Technologies, Inc.

Mr. John Leland, VP of Research, University of Dayton

Ms. Susan Louscher, Executive Director, National Center for Education and Research on Corrosion and Materials (NCERCM)

Panel Members:

Panel Moderator: Dr. Carlos Grodsinsky, COO/VP for Technology, ZIN Technologies, Inc.

Dr. Janet Kavandi, Director, NASA Glenn Research Center

Mr. Tom Beller, Chief Pilot in Command, Dronewerx

Mr. John Blair, CEO, Event 38

Mr. Bob Dirgo, Director of Strategic Innovation, Meggitt Aircraft Braking Systems

Dr. Michael Heil, Pres & CEO, Ohio Aerospace Institute (OAI)

Mr. Jeff Rolf, VP of Business Development, Parker Aerospace

Mr. Brian Stofiel, CEO & Chief Engineer, Stofiel Aerospace

Chairman Perales expressed his appreciation to everyone for taking time to attend this meeting. Then Chairman Perales introduced our host, Dr. Janet Kavandi, Director of NASA Glenn Research Center (GRC).

Dr. Kavandi expressed a welcomed to all in attendance and expressed her appreciation to Chairman Perales for arranging the OAATC meeting at GRC. Dr. Kavandi mentioned the support NASA Glenn Research Center gives to the aerospace industry. Dr. Kavandi mentioned that, as Chairman Perales stated, GRC is a “hidden gem”.

Chairman Perales mentioned in his 3 years as State Legislature the emphasis of industries in Ohio. Aviation and Aerospace are not one of those industries emphasized. Chairman Perales stated the aviation and aerospace industry in Ohio is huge through resources, universities and research institutes which needs to pull everything together. Thus the purpose of OAATC.

Chairman Perales mentioned there is no voting at today’s meeting due to no quorum being present.

Chairman Perales mentioned it should be considered for OAATC to annually meet at NASA GRC.

Chairman Perales asked committee members and presenters to introduce themselves and their affiliation to aviation and aerospace.

Dr. Mike Heil mentioned he will step down as President and CEO of OAI. Jeff Rolf will be Mr. Heil’s replacement.

Chairman Perales introduced Mr. Brent Rossman, Chairman Perales’ legislative aide.

Senator Mike Skindell, State Senator for the Ohio 23rd District, introduced himself and Representative Kent Smith, Ohio House of Representatives, Ohio 8th District. Chairman Perales thanked both for attending this meeting.

Dr. Mike Heil discussed the slide presentation (attached) put forth concerning OAI, an \$11M organization with more than 60 employees in 2 locations (Cleveland and Dayton). OAI’s mission is help aid partners with success in aerospace in research and technology development, help workforce preparedness and engagement with network for network and advocacy. OAI creates innovative partnerships with government industry and academia with extensive research teams. OAI had a report prepared by Cleveland State University on the economic impact of OAI in Ohio from 1998 – 2015. The report stated a net impact of over 1700 jobs and over \$230M on economy on the state of Ohio. OAI assisted with the creation of the Ohio Engineering Dean’s Committee. OAI works with many large and small aerospace and aviation companies nationally and internationally. OAI is part of the “America Made” organization which supports national network in additive manufacturing located in Youngstown, Ohio.

Dr. Heil mentioned that OAI is involved with scholarship and fellowship support through the Ohio Space Grant Consortium – and STEM, which has provided over 500 undergrad scholarships and reaches every county in Ohio. OAI manages the Air Force Research Laboratory (AFRL) Capstone Program which unleashes university student opportunities and produces direct hires to AFRL. Please refer to: www.afrlstudentschallenge.org

Dr. Heil mentioned Mr. Howard Thompson's support to the US Department of Commerce to increase exports by Ohio-based aerospace companies, be intensely engaged with international trade shows and administrations with efforts exceeding \$166M in aerospace exporting transactions from Ohio companies. OAI received the Presidents "E" Award from the Department of Commerce. The President's "E" Award is the highest recognition any U.S. entity can receive for making a significant contribution to U.S. export expansion.

Dr. Heil mentioned that OAI looks forward to continue working with OAATC and Ohio Aerospace and Aviation Council (OAAC). He mentioned a few policies to aide in growing aerospace in Ohio: business-friendly state, right-to-work status as used in southern states and low-tax environment. OAI needs to aid in establishing an internship program to make Ohio the undistributed leader in aerospace and aviation.

Chairman Perales introduced Representative Nan Baker, a close friend and strong ally for aerospace. Chairman Baker stated that she is pleased with OAI's work with students, Ohio should do more to encourage innovation. Representative Baker thanked Chairman Perales for including her as a part of OAATC.

Chairman Perales mentioned that due to a full schedule, questions will be entertained at end of session, if time allows.

Dr. Carlos Grodsinsky introduced Dr. Janet Kavandi, Director of NASA GRC and former astronaut.

Dr. Kavandi presented a prepared statement and video outlining GRC. GRC employees are ½ civilian service and ½ government contractors. GRC is conducting environmental testing of aircraft to take persons to Mars. This year, GRC is celebrating its 75th anniversary. GRC is involved in many research and development programs and projects: aviation and space; testing fuselage; freezing of aircraft in space; future aircraft being more efficient, fuel efficient, faster; how flames propagate in space; growing food in space and on Mars; communication, satellites; study of insulators; protecting crew on reinstating back from space; Orion testing; and vacuum testing. GRC is heavily involved with possible journeys to Mars and has been a part of the Hubble telescope.

Dr. Kavandi mentioned that this is a brief visual of NASA Glenn Research Center. Dr. Kavandi again thanked Representative Perales and OAATC for coming to NASA GRC for this meeting.

Chairman Perales thanked Dr. Kavandi for her presentation.

Dr. Carlos Grodsinsky, COO/VP for Technology of ZIN Technologies, Inc. discussed a slide presentation (attached). Zin Technologies founded in 1957, has over 200 employees, is a longtime partner with NASA. Dr. Grodsinsky mentioned that NASA is truly a catalyst for larger entities pertaining to aviation. Since 2001, ZIN has provided 75% of physical science research on

the international space station for NASA GRC. Zin Technologies has large company capabilities with small company flexibility.

Please refer to the attached presentation for in-depth discuss pertaining to capabilities, projects & programs – products and services; extensive ground and flight hardware and software experience; multi-discipline engineering services supporting diverse NASA programs; power, propulsion, navigation & communication capabilities; unique small business additive manufacturing capabilities; astronaut countermeasure, simulation & device support exploration; and commercial spinout success with Cleveland Clinic.

Dr. Grodsinsky mentioned that Zin Technologies has formally made connections to always align and move forward in propulsion and is competitive in the industry.

Dr. Grodsinsky introduced Mr. Bob Dirgo, Director of Strategic Innovation of Meggitt Aircraft Braking Systems. Mr. Dirgo discussed the attached slide presentation highlighting Meggitt's international engineering group; total braking systems capability; carbon brake applications for commercial transports; steel brake applications for commercial transports; carbon brake applications for business jets; steel brake applications for business jets; leading in helicopter braking applications; and military aircraft capabilities. Mr. Dirgo mentioned that Meggitt Aircraft Braking Systems was first known as Goodyear Aircraft and is now owned by a UK company, Meggitt.

Mr. Dirgo mentioned that Meggitt Aircraft Braking Systems is a \$600M year company with 1300+ employees of which ½ are based in Akron, Ohio where most of the engineering, R&D, and some manufacturing occur. There are some manufacturing facilities in Kentucky and California and Mexico.

Mr. Dirgo mentioned Meggitt Aircraft Braking Systems' collaborations with University of Akron, OSU, Case Western and discussed collaboration with University of Dayton. They have in the past collaborated with AFRL which they would like to increase. Meggitt Aircraft Braking Systems would like to be more deeply involved with in NASA Glenn. Meggitt Aircraft Braking Systems has been in discussion with Innovation Engineering Eureka! Ranch with Doug Hall. Meggitt Aircraft Braking Systems has been involved with Third Frontier of Ohio.

Mr. Dirgo discussed the sister companies in UK are more involved with R&D due to economic benefits and that the industry gets more freedom of ownership than the companies in the US. Ohio has tremendous assets to anchor entities with NASA Glenn and Wright-Patterson There is strength in resources in academia and industry which need to draw together to solve big problems and to establish funding needs to continue.

Chairman Perales thanked Mr. Dirgo for his presentation. Brett Rossman passed around a sign-up sheet and asks those to indicate if interested in access to the OAATC website. All of today's presentations will be put on OAATC website.

Chairman Perales asked attendees to write questions on index cards. Any questions not addressed today will be answered on the OAATC website.

Dr. Carlos Grodsinsky introduced Mr. Jeff Rolf, VP, Commercial Airframes, Business Development and Global Support for Parker Aerospace discussed the slide presentation. The Parker Hannifin Corporation - Parker Aerospace has \$13 B in annual sales with almost 5800 employees. It is a worldwide, diversified manufacturing of motion and control technologies and systems company. Parker Aerospace is a global leader in flight control, hydraulic, fuel and inerting, fluid conveyance, thermal management, pneumatic, and lubrication systems and components.

Mr. Rolf mentioned the divisions in Ohio: Gas Turbine Fuel Systems Division in Mentor, OH (advanced turbine fuel nozzle development with NASA GRC, Case Western University, OAI and WPAFB), Aircraft Wheel & Brake Division in Avon, OH (ceramic and composite friction material development with WPAFB), Fluid Systems Division in Elyria, OH (pump development with OAI, NASA GRC), Fluid Systems Division in Elyria, OH (more electric aircraft development and fuel cell system development with WPAFB, NASA, OAI), institutes with which interface – state continuing to strengthen collaboration with industries.

Mr. Rolf mentioned the need to get additional aerospace and aviation companies to locate in Ohio.

Chairman Perales thanked Mr. Rolf for his presentation. Chairman Perales said that Mr. Rolf gives legislators more credit than what is due in aerospace than industry leaders. The need for help from industry to let legislatures know how to assist them.

Dr. Grodsinsky introduced Mr. Brian Stofiel, CEO & Chief Engineer of Stofiel Aerospace. Mr. Stofiel introduced himself and Miss Bella Stofiel (Head Intern of Stofiel Aerospace). Mr. Stofiel discussed the attached slide presentation. Stofiel Aerospace is developing a micro satellite orbital launch system based on balloon-rocket type launcher. Stofiel Aerospace is developing microization of the aero industry with HUGE reduction in R&D cycle and reduction of price for prototyping.

Mr. Stofiel mentioned some problem areas associated with launch industry. There is more money spent through process of testing, permissions for testing and paperwork than testing. Mr. Stofiel mentioned Ohio has always led innovation.

Mr. Stofiel went on to discuss launch industry problems: long wait time for flight certification, government agencies involved, large R&D/testing costs, limited investment because of long return times on investments, investment for prototype development, ITAR (International Traffic in Arms Regulations), and universities and international issues. Mr. Stofiel mentioned that Ohio has huge opportunities due to past experiences.

Dr. Grodsinsky thanked Mr. Stofiel and Ms. Bella Stofiel for their presentation.

Dr. Grodsinsky introduced Mr. John Blair, CEO of Event 38 – Unmanned Systems. Mr. Blair discussed the attached slide presentation. Mr. Blair mentioned Event 38 was founded in 2011, has customers on 6 continents, 35 resellers in 13 countries with 1,000+ Drone Data Management Systems (DDMS) users and has \$50-\$100 M growth strategy identified. Event 38 manufactures drones, sensors for small-medium size businesses; hardware and software; custom infrared sensors with data capturing solutions.

Mr. Blair mentioned some issues facing Event 38: FAA regulations, business and economic development challenges with growth and job development.

Dr. Grodsinsky thanked Mr. Blair for his presentation.

Dr. Grodsinsky stated the need to move on and introduced Mr. Tom Beller, Chief Pilot in Command, Dronewerx. Mr. Beller is a co-founder, with Matt Mishak, of NOUASA – Northern Ohio Unmanned Aircraft Systems Association to support safe integration of UAS in national airspace. NOUASA meets every other month at OAI. Under FAA regulations, currently, a private pilot is needed to conduct any operation in national airspace. Dronewerx has obtained a Part 333 exemption with FAA, has a certificate of authorization through the FAA which allows flight through Cleveland airspace regulated by Berk Lakefront Tower. Mr. Beller mentioned using these exemptions for aerial photography for motion picture industry and local news stations; pursuing work in power generation for inspection of powerlines and buildings.

Mr. Beller discussed concerns in UAS community. There are approximately 325,000 licensed aircraft in US and over 340,000 registered drone users with most drone users owning more than one drone. Safety is the foremost issue. Dronewerx must have liability insurance and a minimum of 3-man crew to fly drones. Unlicensed drone users are a real concern. Mr. Beller suggests to make it illegal for companies to hire unlicensed drone companies not licensed by the FAA. Part 107 Small UAS Rules will be effective August 2016.

Chairman Perales thanked Mr. Beller for his presentation. Chairman Perales asked Mr. Beller to clarify his position on enforcing current FAA regulations/rules. Mr. Beller mentioned a knowledge-skills test for Part 107 users, in his opinion, is not enough.

Dr. Carlos Grodsinsky thanked everyone for participation in this meeting.

Chairman Perales thanked all presenters and invited attendees to talk one-on-one.

Chairman Perales adjourned the OAATC meeting at 12:07 PM.