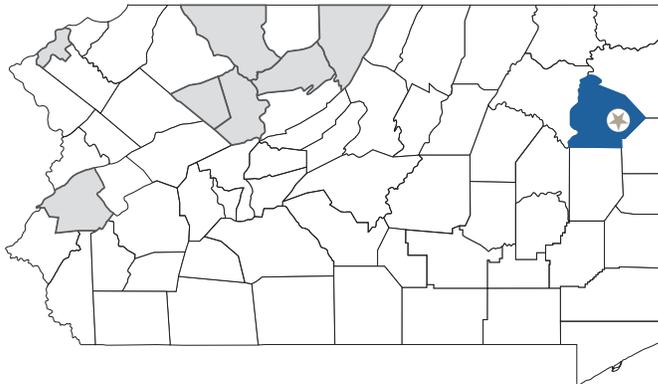


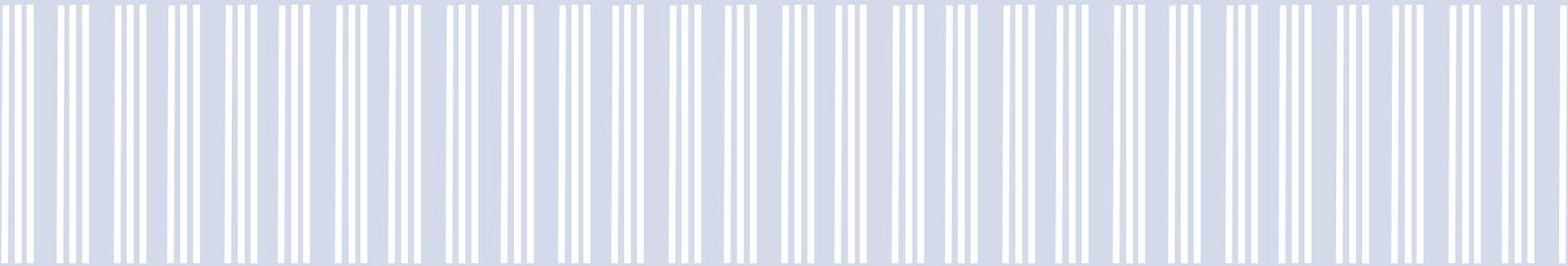


PITTSBURGH INTERNATIONAL AIRPORT / PA AIR NATIONAL GUARD

171ST AIR REFUELING WING



PENNSYLVANIA MILITARY INSTALLATIONS // IMPACTS



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171ST AIR REFUELING WING

This report is part of the Pennsylvania Military Community Enhancement Commission-sponsored study of the economic impacts of Pennsylvania's military and defense installations. The aim of the project is to aid the Commission and the Commonwealth of Pennsylvania in understanding the economic and strategic value of its major military installations regionally and nationally, as well as their ties to surrounding communities and Pennsylvania industry.

INTRODUCTION

The 171st Air Refueling Wing (ARW), a Pennsylvania Air National Guard unit located at the Pittsburgh International Airport, provides in-flight air refueling for domestic and international combat and non-combat military missions. Additionally, the 171st ARW provides services such as air traffic control, global airlift, and weather support. The 171st is the largest Air National Guard tanker unit in the U.S. with 16 KC-135 Stratotankers; it has executed more Title 10 (Federal Active Duty) lines of alert than any other Wing in the country.¹ The installation saw its highest number of flying hours in 2016 and its operations tempo continues to rise.

The 171st ARW is made up of nearly 1,300 Guard members, 400 of whom are full-time base employees. The base operates 24 hours a day, every day of the year, and often receives military planes diverted due to weather, as it is the only East Coast Air National

MISSION: To provide in-flight refueling to the Department of Defense and NATO aircraft.

Guard base open at all times. The Wing is part of the Pennsylvania Task Force West, a joint Pennsylvania National Guard task force that responds to national disasters, civil disturbances, and national security events, and provides humanitarian relief. In 2016, for example, the 171st ARW Medical Group participated in an Innovative Readiness Training on the island of Kauai, Hawaii to provide medical, dental, and optometry care at no cost to patients in local communities.² Additionally, the Wing's Fatality Search and Rescue Team is regularly called upon within the state and beyond for chemical, biological, and similar exercises, or for recovery missions in contaminated locations. ★



A KC-135 aircraft with the 171st Air Refueling Wing refuels an F-15 aircraft.

Photo courtesy of 171st Air Refueling Wing Public Affairs

BACKGROUND & HISTORY

An Air National Guard unit has existed at the Pittsburgh Airport since 1947. Over the years, the unit has seen numerous changes in aircraft and missions. The unit began as the 146th and 147th Fighter Squadrons flying P-47 aircraft. In 1968, the unit was redesignated as the 171st Aeromedical Airlift Group, the first of its kind in the Air National Guard, responsible for transporting patients from locations in Vietnam to destination treatment hospitals.³ It was not until 1972 that the unit became the 171st Air Refueling Wing and transitioned to refueling aircraft.

The 171st was among the first units to respond after the 9/11 terrorist attacks in New York City, Washington D.C., and southwestern Pennsylvania,

providing aerial refueling to aircraft engaged in Combat Air Patrols over the eastern U.S. The Wing has actively participated in supporting several strategic and defensive missions (international and domestic) including Operations Desert Shield and Desert Storm, Allied Force, Enduring Freedom, Operation Noble Eagle, and Operation Iraqi Freedom, as well as relief efforts for Hurricanes Katrina, Sandy, and Maria.⁴

In 2014, the unit was one of five Air National Guard bases to compete for a dozen new KC-46A tankers from the Air Force. Although the Air Force awarded the planes to a different base, the 171st will be in the running for the next possible round of competition, in the mid-to-late 2020s.⁵ ★

ECONOMIC IMPACT

This economic impact analysis quantifies the potential impact on employment and economic output of the Air National Guard activities located at Coraopolis. This could be interpreted as the result if the 171st were to be disestablished or transferred to another state and relocated outside of Pennsylvania. The IMPLAN model was used to estimate the total economic impact of the 171st within Pennsylvania. The IMPLAN model estimates the direct, indirect, and induced impacts that accrue within Pennsylvania because of activity generated by the 171st in Coraopolis.

Direct impacts are the employment and spending associated with the 171st itself, while indirect impacts, sometimes called intermediate impacts, are generated by the supply chain requirements and linkages of the activity being analyzed. Induced economic impacts derive from the spending patterns of employees and service members. Adjustments were made to account for employment and commuting patterns of both full-time staff in Coraopolis, and the part-time participation of assigned drilling (traditional) National Guard service members. Staff of the 171st provided economic data for the 2015–16 federal fiscal year; results reflect economic impact over that period.

The 171st is served by a mix of federal civilian employees, active duty service members, and traditional Guard members who serve part-time throughout the year and full-time during periods

of mobilization or other extended orders to active duty (see Table 1). Civilians include Air Guard Technicians who serve as federal civilian employees, but have dual status as National Guard service members. Traditional reservists serve a minimum of 24 days spread throughout the year in monthly drills, and an additional period of annual training ranging from 12 to 29 days. As of September 2017, full-time employment at the 171st includes a total 407 personnel, including a mix of active duty service members and federal civilian employees. An additional 877 traditional guardsmen are assigned to the 171st and support the unit throughout the year.

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TABLE 1
PERSONNEL SUMMARY – 171ST AIR REFUELING WING

PERSONNEL TYPE	#
Active Duty	112
Technicians	282
Guard Personnel Total	1,159
Drilling Guardsmen (other than technicians)	877
Civilian	13
TOTAL	1,284

Source: University of Pittsburgh Center for Social and Urban Research, 2018



A C-17 Globemaster III from the 167th Airlift Wing being refueled near Lake Erie by a KC-135 Stratotanker from the 171st Air Refueling Wing.

Photo courtesy of 171st Air Refueling Wing Public Affairs

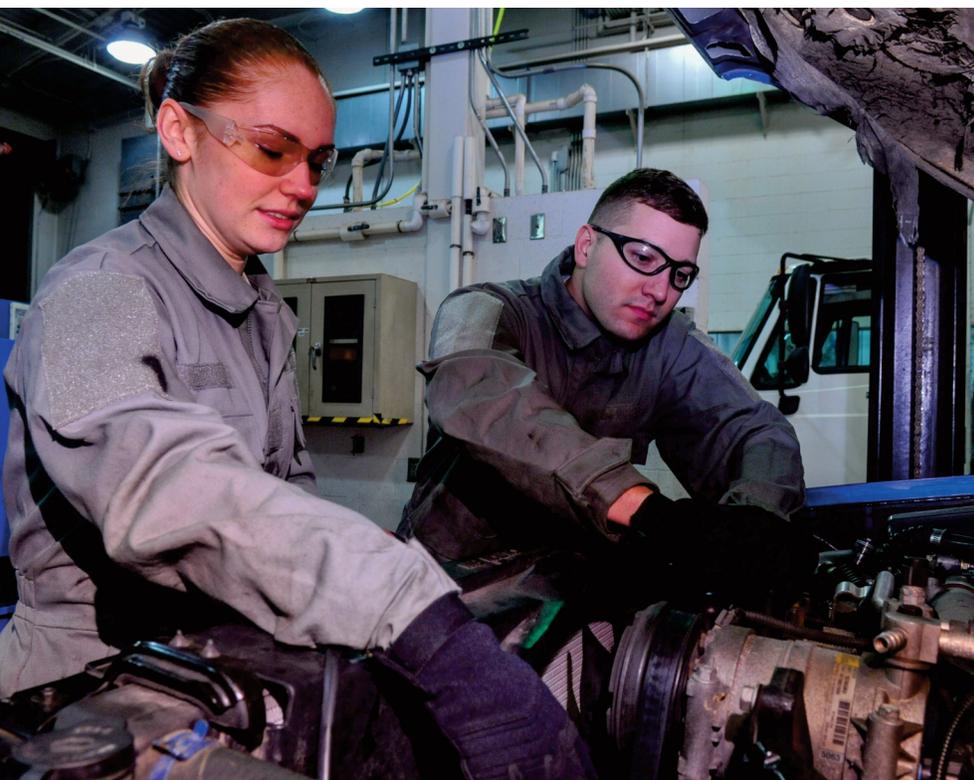
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Table 2 is a summary of annual economic impacts for the 171st Air Refueling Wing broken down by direct, indirect, and induced sources.

- Overall, the 171st generated 1,178 jobs and a total of just under \$316 million in overall economic output. These jobs account for over \$106 million in labor income within Pennsylvania.

- The 171st generated over \$237 million in Gross Regional Product (GRP), or value-added production, to the economy of Pennsylvania.

The direct, indirect, and induced economic impacts are spread across industries. Table 3 highlights the top 10 industries impacted as estimated by the IMPLAN model. Federal government (military and non-military) sectors, as well as the air transportation industry, are most affected. ★



Airman 1st Class Breetaralyn Sloan, left, and Airman 1st Class Logan Noll, right, with the Pennsylvania Air National Guard 171st Air Refueling Wing's Vehicle Maintenance Shop perform regular scheduled maintenance on a truck March 5, 2016.

Photo by Staff Sgt. Ryan A. Conley

TABLE 2

ECONOMIC IMPACT SUMMARY – 171ST AIR REFUELING WING

	IMPACT TYPE	EMPLOYMENT	LABOR INCOME	VALUE ADDED	OUTPUT
ALLEGHENY-COUNTY	Direct Effect	583*	\$ 72,006,879	\$ 181,853,882	\$ 222,140,806
	Indirect Effect	150	\$ 10,487,828	\$ 15,965,317	\$ 26,588,715
	Induced Effect	417	\$ 21,718,972	\$ 36,495,037	\$ 60,099,664
	Total Effect	1,150	\$ 104,213,679	\$ 234,314,235	\$ 308,829,185
	IMPACT TYPE	EMPLOYMENT	LABOR INCOME	VALUE ADDED	OUTPUT
PENNSYLVANIA TOTAL	Direct Effect	583*	\$ 72,006,879	\$ 181,853,882	\$ 222,140,806
	Indirect Effect	162	\$ 11,412,597	\$ 17,756,320	\$ 30,452,684
	Induced Effect	433	\$ 22,697,285	\$ 38,165,234	\$ 63,366,214
	Total Effect	1,178	\$ 106,116,761	\$ 237,775,435	\$ 315,959,702

*Represents full-time equivalent employment including civilian employees and active duty service members, and an adjustment for the part-time service of traditional reservists/Guard members; Source: University of Pittsburgh Center for Social and Urban Research, 2018

TABLE 3

TOP 10 INDUSTRIES AFFECTED – 171ST AIR REFUELING WING

SECTOR	DESCRIPTION	EMPLOYMENT	LABOR INCOME	VALUE ADDED	OUTPUT
536	Federal government, military	287	\$ 45,764,218	\$ 134,941,459	\$ 134,941,466
408	Air transportation	149	\$ 16,107,397	\$ 28,994,854	\$ 64,625,538
535	Federal government, non-military	148	\$ 10,799,449	\$ 18,377,465	\$ 23,021,229
503	All other food and drinking places	34	\$ 955,214	\$ 803,246	\$ 1,361,994
414	Scenic and sightseeing transportation and support activities for transportation	31	\$ 1,994,741	\$ 2,420,291	\$ 4,966,877
482	Hospitals	30	\$ 2,380,259	\$ 2,634,141	\$ 4,593,192
501	Full-service restaurants	27	\$ 578,221	\$ 649,708	\$ 1,255,276
502	Limited-service restaurants	23	\$ 436,347	\$ 1,076,384	\$ 1,870,027
440	Real estate	23	\$ 620,274	\$ 4,315,303	\$ 5,505,926
395	Wholesale trade	20	\$ 1,810,583	\$ 3,285,182	\$ 5,096,906

Sector reflects IMPLAN industry category; Source: University of Pittsburgh Center for Social and Urban Research, 2018

COMPETITIVE ASSESSMENT

The sections that follow originate from an analysis of strengths, weaknesses, opportunities, and threats (SWOT) at the 171st. Strengths and weaknesses include attributes, assets, or factors that are internal to the installation. Threats are external factors that are harmful to, or create vulnerabilities for, the installation. Opportunities offer ways to mitigate threats and weaknesses and/or reinforce and expand on the installation's strengths. The SWOT analysis is summarized in Table 4 and aspects of the analysis are described throughout the following sections.

The 171st Air Refueling Wing's competitive strengths lie in two main areas: 1) specialized and in-demand equipment and 2) location, especially proximity to Pittsburgh International Airport. The installation also has many strong regional partnerships, which are described in the next section.

Specialized and in-demand equipment housed at the 171st is one of the Wing's strongest advantages. The 171st is home to 16 KC-135 Stratotanker aircraft, the military's workhorse plane for aerial refueling. The base has one of the U.S.'s largest concentrations of these aircraft, providing the 171st with an exceptional refueling capability. The 171st has a boom simulator and recently installed an aircraft simulator in which pilots can train. The latter is one of only 13 flight simulators for the KC-135, which is creating training opportunities on the installation; as many as six to ten crew members from other bases come to the 171st for three to five days each week to use the simulator. Its presence on the base also means that 171st pilots no longer need to travel twice a year to Milwaukee for training, saving time and money.⁶

The 171st is co-located with the Pittsburgh International Airport, and the two share a partnership and

TABLE 4

SWOT THEMES – 171ST AIR REFUELING WING

STRENGTHS

- **Specialized and In-Demand Equipment**
- **Location**
- **Partnerships**

OPPORTUNITIES

- **Connector Road**
- **New planes at Neighboring 911th**
- **Improved Visibility**

WEAKNESSES

- **Entry Control**
- **Limited Visibility**
- **Limited Space for Expansion**

THREATS

- **Airline Recruitment of Pilots**
- **Air Force Restructuring**



A KC-135 Stratotanker with the 171st Air Refueling Wing in Pittsburgh approaches for landing August 25, 2009.

Photo by Senior Master Sgt. Shawn Monk

mutually beneficial relationship. The partnership between the 171st and the airport is a financial strength for the installation, as their long-standing relationship and cost sharing efforts mean that the Wing does not have to own land and some equipment integral to its mission. The unit leases its land from the Allegheny County Airport Authority and uses airport runways and taxiways. The airport in turn benefits from increased runway usage, as the pay scale for tower controllers is based on the number of takeoffs and landings. This higher work rate and increased demand for controllers helps bring additional federal investments and resources to the airport. These funds have helped to counteract recent declines in airport demand, such as reduced travel after 9/11 and the effects of USAir closing its Pittsburgh hub operations. It is worth noting here a threat related to the airport, which is that commercial airlines are facing a shortage of pilots nationwide and hiring at a rapid pace (and at a high pay rate), making it harder for the National Guard to retain full-time pilots.

The location of the 171st, along with the fact that it operates 24/7, makes it a critical resource. Because Coraopolis is not located on the East Coast, the 171st is less constrained by congestion on busy East Coast air routes, and weather patterns also differ. If, for example, there is a large snow event in New England,

New England-based alert jets will divert to Coraopolis or the 171st will assume an additional alert line to cover the tasking. The alert mission is ideal for the 171st because planes can be anywhere from “Boston to Atlanta to Chicago to St. Louis in just over an hour,” according to installation leadership. Moreover, the Wing’s location is the “closest thing to the capital region that’s not the capital region.” So if Maryland’s Joint Base Andrews, home to another large tanker unit, could not operate due to weather or other constraints, the 171st is ideally situated to step in.

Some of the challenges facing the 171st have to do with its physical space. At 184 acres, the installation is relatively small with little room for expansion. Moreover, despite the fact that the 171st and the 911th Airlift Wing are neighboring installations, no road connects the two and each has only one way on and off its respective base, which is a force protection concern. Fortunately, a potential connector road would address some of these issues, improving access and opening new avenues for shared resources, including space. The road is currently being designed and funds are being sought to make this improvement. With a direct link, the 171st’s prospect of securing the KC-46A tankers in the next competitive round improves. More information on the connector road appears in the next section. ⚙

THE 171ST & THE PITTSBURGH REGION

The 171st excels in maintaining partnerships with service providers and law enforcement in surrounding communities. The installation has 39 buildings, 38 of which are located in Moon Township. The main gate is located in Findlay Township. The 171st has standing agreements with Heritage Valley Hospital in Sewickley, Pennsylvania, as well as with two local volunteer fire departments, which share grounds, equipment, and vehicles needed for training.⁷ The 171st partners with the City of Pittsburgh on an annual basis for a structural live burn event.

Fifty-five percent of personnel in the security forces squadron are active law enforcement officers, which has led to partnerships with the Federal Bureau of Investigation, the Drug Enforcement Agency, and the police departments of Findlay and Moon townships for training purposes.⁸ Some 171st ARW members are using a state-sponsored benefit (Act 165) to

complete an abbreviated municipal police officers' education course at Indiana University of Pennsylvania; the school even enacted a stand-alone program that works around Guard members' full-time employment and allows them to finish in less than four months (as opposed to a year in other programs).⁹

The Military Affairs Council of Western Pennsylvania (MACWPA) supports the 171st Air Refueling Wing, as well as the nearby 911th Airlift Wing and the 316th Sustainment Command. MACWPA is the Local Defense Group partner of the Pennsylvania Military Community Enhancement Commission. MACWPA's mission is to "Be the voice and an advocate for the military when it comes to forging local connections and overcoming regional challenges."¹⁰ MACWPA has successfully carried out its mission since 1995. In 2012, MACWPA was instrumental in preventing the removal of as many as four KC-135 aircrafts from the 171st as part of a proposed Air Force restructuring plan.¹¹ The



KC-135 aircraft parked on the ramp of the Pennsylvania Air National Guard's 171st Air Refueling Wing near Pittsburgh January 11, 2018.

Photo by Senior Master Sgt. Shawn Monk

Pennsylvania Air National Guardsmen with the 171st Air Refueling Wing's Fire Protection Flight participate in an annual training exercise at the Pittsburgh International Airport's Air Rescue and Firefighting facility, June 7, 2016.

Photo by Staff Sgt. Allyson L. Manners



organization remains vigilant in supporting its installations in anticipation of future rounds of Base Realignment and Closure (BRAC) and other threats.

The 171st recently became involved in the Air Force Community Partnership Program, a means through which Air Force installations can partner with community leaders to leverage their capabilities and resources toward reduced costs.¹² The Air Force created the Community Partnership Program in 2013, a concerted effort to invest in cultivating partnerships between installations and their local communities. While the 171st's entry into the Community Partnership Program is relatively new, it opens up the possibility for essential cost-saving benefits for the installation in the future.

One goal for the Air Force Community Partnership, along with MACWPA, is the aforementioned connector road between the 171st and the 911th Airlift Wing. The road would not only improve force protection and resource sharing, but would be critical for a potential new Regional Joint Readiness Center, a concept that arose from the 2005 BRAC process.¹³ The concept relies on connections — physical and otherwise — between the 171st and 911th. The center would provide military-civilian operations, homeland security, and community-based medical support to the

Department of Defense (DoD) and the Department of Homeland Security National Incident Management Plan and the National Response Plan.¹⁴ During the 2005–06 period, MACWPA sponsored the Joint Readiness Center Task Force, a public-private partnership that included a number of Western Pennsylvania organizations, universities, and government agencies. The task force began to develop the concept and identify the activities and functions of the Joint Readiness Center for the DoD and Department of Homeland Security. Despite strength in organizing and community support for the task force, the Joint Readiness Center was not funded. The Pittsburgh International Airport continues to maintain land for the center.

As part of its relationship with Pittsburgh International Airport, the 171st sits on the Pittsburgh Airport Area Chamber of Commerce's Military Relations Committee, which houses the Honorary Commander's Association. Recent restructuring has led to a greater emphasis on partnerships with local corporations and industries, including FedEx and universities. Participation on the Military Relations Committee connects the 171st to influential stakeholders that can be helpful during threats of BRAC or as the installation works with neighboring localities to address common issues related to zoning, planning, traffic, and the like. ★

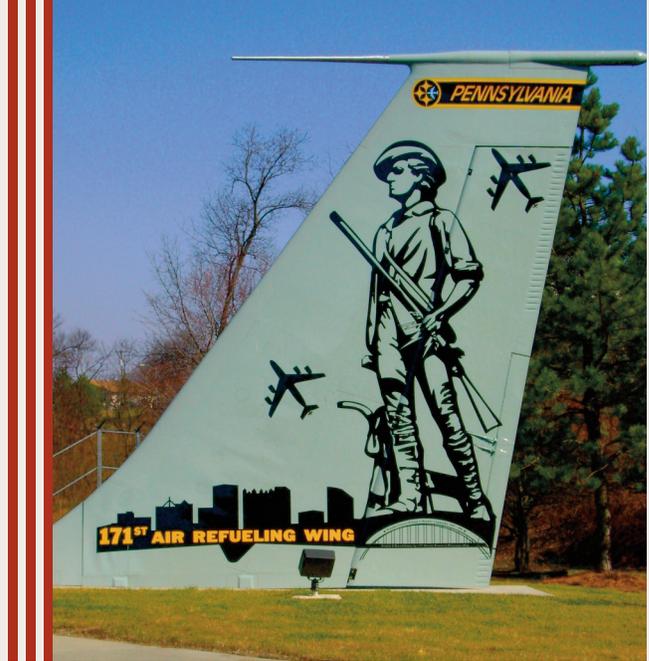
A decorated KC-135 vertical stabilizer sits on display at the main entrance gate of the 171st Air Refueling Wing.

Photo courtesy of 171st Air Refueling Wing Public Affairs

LOOKING FORWARD

Even as the 171st Air Refueling Wing's operations tempo continues to rise, several opportunities lie ahead, in the areas of connectivity, collaboration, and visibility.

- *The 171st, the 911th Airlift Wing, and MACWPA are working toward the creation of a connector road that would assist the installations in sharing storage space (specifically hangars), supplies, and equipment. Additional implications of the connector road include: availability of extra storage room for the 171st at the 911th; increased security for both installations; and improved coordination for a Joint Readiness Center.*
- *Boosting connectivity between the 171st and the 911th is all the more important in the face of upcoming changes at the 911th, which is preparing to transition to a fleet of C-17 planes in the coming months. Due to their existing collaboration, close proximity, and compatible missions, the 911th Airlift Wing's transition to C-17s will create new opportunities for the 171st as well. The 171st will be able to virtually link with the 911th in distributed mobility operations using its new flight simulator, thus expanding training capabilities. The 171st will be able to accomplish refueling training with the C-17s (not possible with the existing planes) and to use 911th's hangars as well.*
- *MACWPA can continue working to integrate common issues across Western Pennsylvania installations and leveraging partnerships that can advance installations' missions. One possible opportunity is a joint military cargo hub at the 171st and 911th. Particularly relevant to the hub concept is that the airport recently entered into an agreement with Qatar airlines for scheduled air cargo service to Doha,¹⁵ which could position*



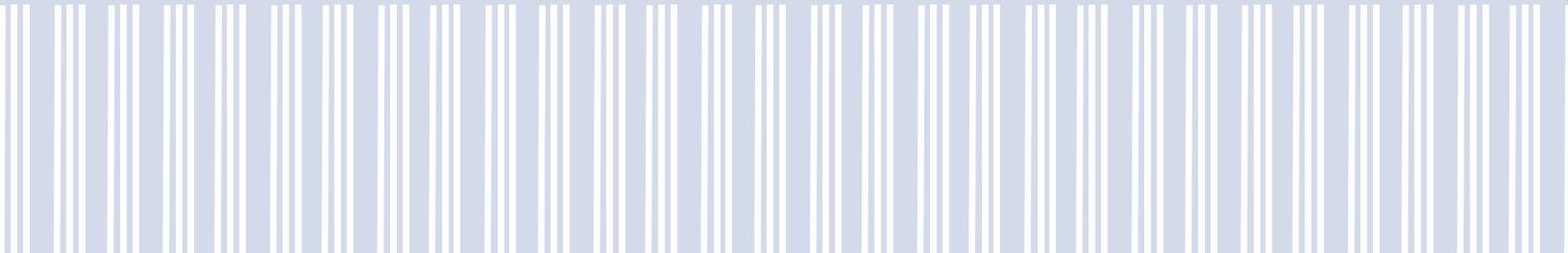
the airport as a backup for primary military air hubs on the East Coast, including Dover and McGuire Air Force Bases. The joint cargo hub could alleviate congestion at East Coast hubs and potentially reduce costs with deployment overseas from Pittsburgh. MACWPA and PMCEC could sponsor a study of the potential importance and cost savings of the joint cargo hub operations.

- *Leaders at the 171st are aware of the great potential of cyber security work at the installation and the necessity of knowing how to protect Air Force systems. In 2016, members of the 171st, along with the 911th, attended a three-day training exercise at Carnegie Mellon University on cyber defense techniques.¹⁶ The 171st should continue to explore and expand partnerships with federal agencies and with local universities that have strong programs in cyber security.*
- *While the 171st has many robust partnerships with local municipalities and universities, its overall community visibility, especially in regard to Pittsburgh, its largest neighbor, could be improved. For example, the nearby 911th Airlift Wing hosts an airshow event called "Wings over Pittsburgh," strengthening its community presence and involvement. Perhaps the 171st could participate in the airshow, host its own events, or broaden its media outreach in the future to increase awareness about the installation and its role in the Pittsburgh region. MACWPA can be helpful here as well, by continuing to engage stakeholders, elected officials, and regional organizations to speak in one voice for the installations in Western Pennsylvania, as well as reaching out to Pennsylvania's Congressional delegation and others about the value and strength of these installations. ☆*

Notes

- ¹ Col Gregg Perez and Col Mark Goodwill, "171st Air Refueling Wing," (PowerPoint Presentation, April 28, 2017)
- ² Kyle Brooks, "171st Medical Group Members Support Tropic Care," 171st Air Refueling Wing News, October 30, 2016
- ³ "History," 171st Air Refueling Wing, accessed January 12, 2018, 171arw.ang.af.mil/About-Us/History
- ⁴ "History"
- ⁵ Tom Fontaine, "Pennsylvania Air National Guard's 171st Air Refueling Wing to Seek New Tanker Planes," *Trib Live*, February 25, 2014
- ⁶ "Flight Simulator Ribbon Cutting at 171 ARW," 171st Air Refueling Wing News, May 11, 2017
- ⁷ Jodi Snyder, "171st Fire Emergency Services Flight Honors Local Fire Departments," 171st Air Refueling Wing News, March 6, 2016
- ⁸ According to the 171st, Active Law Enforcement Officers represent 55%, Detention, Corrections, or Parole Officers represent 13%, Current Students (University Level) represent 26%, and "Other" represents 6%
- ⁹ Michael Farriss, "171st ARW Security Force Members Earn Civilian Police Accreditation from IUP," 171st Air Refueling Wing News, March 1, 2017
- ¹⁰ "Mission and Vision," Military Affairs Council of Western Pennsylvania, accessed December 8, 2017, militaryaffairscouncilwesternpa.org/about/mission-and-vision
- ¹¹ Jenna Staul, "Military Coalition Calls for Moon Residents to Rally Behind 911th, 171st," *Robinson Patch*, March 5, 2012
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- ¹³ Defense Base Closure and Realignment Commission, *2005 Defense Base Closure and Realignment Commission Report*, vol. 1, 2005
- ¹⁴ The Dupuy Institute, "Regional Joint Readiness Center: A Value-Added Regional Resource," May 2005. See also "About the JRC," Joint Readiness Center Task Force, accessed January 17, 2018, sciencengines.com/jrc/About.htm
- ¹⁵ Theresa Clift, "Pittsburgh Airport Paying Qatar Airways up to \$1.48M for Cargo Services," *Trib Live*, November 17, 2017
- ¹⁶ "Cyber Lightning Exercise Helps Air National Guard and Air Force Reserve Units Learn and Test New Skills," Carnegie Mellon University, Software Engineering Institute, June 17, 2016

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This report is part of a larger study of the economic and community impacts of Pennsylvania's military and defense installations. Visit the Pennsylvania Military Community Enhancement Commission's website at www.dced.pa.gov/pmcec to see other installation-specific reports and a statewide report.



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