ALASKA AEROSPACE

# 2016 Annual Report

*"For the wise man looks into space and he knows there are no limited dimensions."*

*~ Lao Tzu*

# Introduction

The theme of last year's annual report was *"The Phoenix is Reborn – And Ready to Fly."* This year, 2016, Alaska Aerospace Corporation (AAC) has *"Taken Flight"* and launched a new dawn for aerospace in Alaska and in providing innovative services across the Pacific Region.

The financial position of AAC experienced significant pressure this year. Following two years with no launches, due to the 2014 launch failure and subsequent reconstruction work being completed at the Pacific Spaceport Complex – Alaska (PSCA), the Board of Directors invested in infrastructure improvements and an aggressive marketing program focused on diversifying the company with a distinct advantage in capturing the emerging small and ultra-small commercial launch market. While we ended 2016 with lower cash reserves than in 2015, our end of year net positon increased by seven percent ($4.9 Million).

With the change to serving a diversified launch services market, AAC had a hallmark year in securing new customers from both the commercial and government sectors. This success will provide long term financial stability and return the company to self-sufficiency. The highlight of the year was the contract with Missile Defense Agency (MDA) for a multi-year Indefinite Delivery/Indefinite Quantity (IDIQ) contract valued at $80.4 Million. In addition, AAC signed a contract to support Rocket Lab USA's New Zealand operations in 2017, valued at $2.2 Million. Other smaller contracts with commercial companies for a variety of support work in conjunction with the emerging small launch vehicle market rounded out a very successful year. By years end, it was clear that AAC had reached the point of being financially self-sufficient with no further requirement for state operating funds.

While aggressively pursuing new markets, the company remains steadfastly committed to providing stellar service to our traditional customers, as we merge the future of commercial and government launch services into an affordable, competitive market. As you read this report, and reflect back over the past four years, it will become obvious just how significantly AAC has changed to meet this new aerospace environment.

Both here at home and at other locations where our customers need our services, AAC is growing to meet their requirements. As the emerging small satellite and ultra-small launch vehicle market expands, AAC is positioned to exploit the demand for low-cost launch services and capture a significant percentage of this new business.

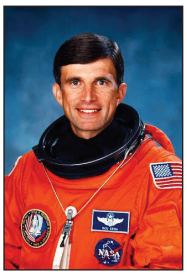
# Board of Directors

**DR. ROBERT P. MCCOY, CHAIR**
Director, Geophysical Institute
University of Alaska Fairbanks
*Fulfills requirement for the membership of the Geophysical Institute of the University of Alaska*

**THOMAS D. WALTERS**
Maritime Helicopters, Owner (Kodiak)
*Fulfills requirement for a state resident, and a borough resident with significant experience in the business sector*

**BRUCE ABEL**
President, Don Abel Building Supplies
Past President, Juneau Chamber of Commerce
*Fulfills requirement for a public member*

**DR. JIM JOHNSEN**
President, University of Alaska Statewide System
*Fulfills requirement for membership of the president of the University of Alaska*



**DR. RONALD M. SEGA**
Vice President for Energy, Environment, and Applied Research at the Colorado State University / Former Under Secretary of the U.S. Air Force / Two time astronaut on Space Shuttle Discovery / Major General USAF (Ret)
*Fulfills requirement for experience in the commercial space industry and operational space experience*

**LEE RYAN**
Vice President, Ryan Air
*Fulfills requirement for a public member with significant experience in growth and marketing*

**LAUREL HUMMEL**
The Adjutant General, Alaska National Guard Commissioner, Department of Military and Veterans Affairs – State of Alaska.
*Fulfills requirement for the membership of the Commissioner or Designee of the Department of Military and Veterans Affairs*

**GARY L. STEVENS – SENATOR**
Ex-Officio
Alaska State Senate
*Fulfills requirement for the membership of the state senate*

**LINDSAY C. KNIGHT**
Kodiak Athletic Club, Owner
Past President- Kodiak Chamber of Commerce.
*Fulfills requirement for a state resident, and a borough resident with significant experience in the business sector*

**LOUISE STUTES – REPRESENTATIVE**
Ex-Officio
Alaska House of Representatives
*Fulfills Requirement for the membership of the state house of representatives*

# Chairman of the Board of Directors Letter

To Governor Bill Walker, the state Legislature, and the People of Alaska

On behalf of the Alaska Aerospace Corporation (AAC) Board of Directors, it is my pleasure to present our 2016 Annual Report. This past year has been an exciting period for the company, as we completed reconstruction of the damaged facilities from the August 2014 launch failure, secured one of the largest multi-year, multi-launch government contracts in our eighteen years of operations, expanded our operations overseas, and signed our company's first, truly commercial launch service contract.

This was a year of transition for the board. Dr. Dave Weldon completed his term on the board in early 2016 and Governor Walker appointed Mr. Lee Ryan to fill the vacancy. Lee brings a wealth of aviation experience to the board. He currently serves as Vice President for Ryan Air, Incorporated, an Alaska air cargo firm, where he is also an active pilot for the company. He is a graduate of Northern Arizona University, where he earned his Bachelor of Business Administration. He subsequently earned a Business Administration Degree in Management from the University of Alaska, Anchorage. Lee fulfils the requirement for a public member with significant experience in growth and marketing.

Governor Walker also reappointed Mr. Lindsay Knight to a second three year term, where he fulfills one of the two local representatives from Kodiak on the board. As we ended the year, the Board elected Lindsay as our new Vice Chair.

Looking back over the past two years, AAC has faced significant challenges in developing a strong commercial aerospace market for Alaska. The extensive damage done to the launch facilities by the 2014 launch failure, coupled with the elimination of state operations and sustainment funding that same year, provided AAC the opportunity to refocus our business plan. While we recognize that the Pacific Spaceport Complex – Alaska (PSCA) is an ideal location for US government operations, we found that the emerging commercial small and ultra-small launch vehicle market has a demand for polar launch capability that cannot be affordably met at other US locations. This has provided us with a timely opportunity to capture that new niche market. Throughout the year staff has aggressively pursued efforts to secure the first commercial, non-government contracts for AAC.

Completing reconstruction of the damaged facilities was also a major milestone for the year. The general contractor for this unique and complicated multi-million dollar reconstruction project was Davis Constructors, who did an exceptional job at completing all tasks with minimal change orders and within budget. We are also very proud that over ninety-five percent for the contract work for this project was completed by Alaskan companies. That is a tribute to the talent and professionalism available in the Alaskan market.

Our future is bright. As we begin 2017 AAC has booked both government and commercial launches. We anticipate this coming year to be the busiest PSCA has ever experienced, which is a tribute to the professionalism of the AAC staff and the aerospace industries recognition of the value of launching from Alaska. I hope you enjoy reading this report and sharing in our excitement about the future!

Robert P McCoy

Dr. Robert McCoy, PhD
Board Chair

# President and Chief Executive Officer Letter

To Governor Bill Walker, the state Legislature, and the People of Alaska

This past year has been one of the most challenging periods in our history. I am extremely proud of the AAC employees and contractors who made this year a banner year by creating an environment which now makes affordable launch services available from Alaska for both government and commercial customers. From facility reconstruction to infrastructure improvements and overseas expansion; 2016 will go down as the year that AAC transformed away from state government dependency to a self-sufficient commercial operation.

I would like to thank our Board of Directors for providing AAC with the vision to stretch our abilities and seek new frontiers for commercial development. While the Missile Defense Agency (MDA) $80.4 Million multi-year launch contract is a milestone for the company, it was not the only business development effort that saw positive results this year. I would like to specifically thank our congressional delegation for their steadfast support in working with us and MDA to bring this contract to Alaska.

The US small satellite industry is rapidly changing to smaller, lower cost operations, with a high demand for polar orbits. As the nation's only FAA licensed, full-service spaceport capable of launching satellites into polar orbit, this emerging small satellite market has ignited a demand by small and ultra-small launch vehicle operators to access our facilities for commercial launches. The hallmark of this year was our ability to sign launch service contracts and commitment letters from no less than three commercial operators for launches from PSCA starting as early as next year. Long the dream of many to have AAC offering commercial services to commercial customers, this was the year that we were able to sign the commitments to make it happen.

To further streamline costs and provide flexible, competitive launch services to our customers, the Board of Directors authorized AAC to establish a wholly owned subsidiary for launch services. This company, named Aurora Launch Services (ALS), will be the first such company in the country to offer tailored contract launch services to the commercial market. ALS will be headquartered in Anchorage and be the exclusive provider for all launches conducted from PSCA.

In an effort to further capture the commercial market, the Board of Directors also authorized AAC to pursue development of a new, small-lift launch facility capable of launching satellites into equatorial orbit. AAC has conducted site surveys at a number of locations and plans to select a preferred site in 2017. Once developed, this new site will provide AAC with the competitive advantage of offering customers the only common pricing, procedures, and operational capabilities for both polar and equatorial launch services within the US from a single company.

As you read through this report, you will find that 2016 provided financial challenges caused by the lack of launch capability as we rebuilt the damaged facilities, coupled with management decisions to invest in facility improvements to enhance our competitive advantage in the emerging small and ultra-small launch market. These decisions were validated with the signing of multiple commercial launch commitments that provide AAC with the foundation for sustainable long term growth. But I trust you will also be as pleased at our success in bringing this new commercial business to Alaska, at a time when our state is aggressively seeking to diversify our economy.

Our performance this year has positioned AAC to be a world leader in the commercial launch industry. Thank you for taking the interest to read our 2016 Annual Report and in supporting Alaska as a global aerospace state.

Craig E. Campbell
President and Chief Executive Officer

# Our Year in Review

## RECONSTRUCTION

Following the August 25, 2014 launch failure, AAC immediately started to rebuild the damaged facilities. Most significantly damaged were the Launch Service Structure (LSS), Integration and Processing Facility (IPF), and the Spacecraft Assembly and Transfer (SCAT) facility. Throughout 2015, the damaged facilities were demolished and damaged components removed. Environmental remediation was accomplished across the area where the rocket failure occurred. AAC issued a reconstruction contract to Davis Constructors and Engineers (DCE) to be the General Contractor (GC) for the rebuild and by the end of 2015, reconstruction was well underway.

DCE led the reconstruction project throughout the first half of 2016, with the goal to have the facilities substantially complete by July 2016. Despite working under challenging winter weather conditions, DCE successfully met the objective and on August 13, 2016, Alaska Aerospace co-hosted with the Kodiak Chamber of Commerce the *Launch Facility Rededication and Return to Flight* ceremony at the Pacific Spaceport Complex – Alaska (PSCA) commemorating the completion of the reconstruction project.

As a state-owned corporation, AAC's insurance coverage is provided by the State of Alaska under the Department of Administration. AAC pays an annual insurance assessment to the Division of Risk Management for property insurance covering all state owned or leased property, which includes all facilities at PSCA. The reconstruction project was covered by the state insurance policy. As a result, reconstruction costs were paid by the insurers holding the state policy. The AAC Board of Directors would like to specifically thank the Division of Risk Management staff for the comprehensive support provided to AAC during the reconstruction of the damaged facilities. Their professional handling of this claim allowed for reconstruction to be managed within budget and on time.


FULLY RECONSTRUCTED INTEGRATION AND PROCESSING FACILITY (IPF).

## FACILITY IMPROVEMENTS

Taking advantage of the reconstruction project, AAC integrated some specific improvements at the complex designed to allow more flexibility for the use of our facilities by a variety of users while also enhancing capabilities for future customers by undertaking a number of initiatives to advance our launch capabilities competitive advantage.

Some of the facility improvements included installing insulated metal panels on the entire exterior of the Launch Service Structure (LSS) to reduce maintenance and provide better environmental control for our customers and adding a communications room with better environmental controls and increased secure operations capabilities. We upgraded the insulation material surrounding the launch bay within the LSS, which provides improved environmental control and is more durable for post launch facility clean-up. Of significant interest to some customers, we increased the door size and upgraded the type of door used at the Payload Processing Facility (PPF) which now provides better capabilities to handle a variety of different types and sizes of payloads.

RIBBON CUTTING AT THE LAUNCH PAD RE-DEDICATION (L TO R, CRAIG CAMPBELL (AAC); LINDSAY KNIGHT (BOD); JENITH FLYNN, DAVIS CONSTRUCTORS & ENGINEERS; DR. ROBERT MCCOY, (BOD); SENATOR GARY STEVENS (KODIAK); REPRESENTATIVE LOUISE STUTES (KODIAK).

As part of the development program to support future launches from PSCA, we completed a facility expansion which included construction of a new road on the southwest side of the complex aligned to eventually access the Launch Pad -3 medium lift operations area. We also expanded power, communications, and fiber optic infrastructure from the Range Control Center (RCC) to the lower end of the range; constructed three gravel pads allowing customer flexibility and growth for launch options; increased our security capabilities; and constructed a gravel pad support area for use by customers that require non-launch related services at PSCA.

## MISSILE DEFENSE AGENCY (MDA)

MDA has long been a valued customer for AAC. Having launched nine targets for the development of MDA's Ground-based Midcourse Defense (GMD) program in the early 2000's AAC welcomed the opportunity to once again support MDA test and development programs from PSCA. The landmark sale for 2016 was an $80.4 Million Indefinite Delivery/Indefinite Quantity (IDIQ) multi-year contract signed during the summer. It is the single most lucrative launch services contract ever secured by AAC and demonstrates the value of PSCA to our nation's defense.

The Missile Defense Agency (MDA) is a research, development, and acquisition agency within the Department of Defense. Under the contract with MDA, AAC will support testing of the Terminal High Altitude Area Defense System (THAAD). THAAD is a U.S. Army weapon system intended to defend U.S. service members, allies and partners, cities and populations centers, and critical infrastructure against short- and medium-range ballistic missiles. THAAD is a land-based element of the Ballistic Missile Defense System and has been proven to be highly effective against ballistic missile threats. As we worked with MDA on how best we can support MDA programs, the Agency awarded AAC additional task orders for launch services support under the IDIQ for testing of other missile defense systems from PSCA for 2017 and 2018.

To support MDA requirements, during the last half of 2016 we extended a road and constructed gravel pads in areas that will be used for mission operations, a Life Support Area (LSA) for MDA personnel, and a pad to accommodate support equipment required for testing the THAAD system. And since we were already working in the lower area of the complex in the reconstruction of our damaged facilities and the MDA improvements, we regraded and improved the access road to Fossil Beach. Fossil Beach is a public area used by both surfers and beachcombers. It is important to AAC that we continue to ensure public access to Fossil Beach whenever there is no active launch mission or launch rehearsals being conducted at PSCA. By maintaining and improving road access to the beach, we strive to demonstrate a good stewardship of the area and provide the residents of Kodiak with a sustained ability to enjoy a special part of Narrow Cape.

## ROCKET LAB

In 2015 AAC signed a support contract with Rocket Lab USA to provide range safety and telemetry services for the first four launches of the new Electron rocket for Rocket Lab's New Zealand launch complex, located on the Mahia Peninsula. As development of the program expanded for Rocket Lab, AAC was asked to also provide support in flight safety analysis and launch director operations.

Under the 2015 agreement, AAC shipped one Range Safety and Telemetry System (RSTS) to New Zealand in August 2016, in preparation for the first launches scheduled for early 2017. This event marked a highlight of the year, as it demonstrated the capability to use the RSTS in a truly mobile configuration, at an overseas location. AAC staff also supported Rocket Lab in working with the Federal Aviation Administration, Office of Commercial Space Transportation (FAA/AST) to secure the required Launch Operators License and work through a number of regulatory issues relating to commercial launch operations.

As Rocket Lab USA continues to grow and develop, the relationship with AAC has expanded. Solidifying our work in support of their New Zealand operations, Rocket Lab USA and AAC signed a contract for AAC to continue providing RSTS operations support at the Rocket Lab Mahia Launch Facility through 2017.

Demand for the emerging ultra-small launch vehicle is increasing, with a wide range of entrants into this very competitive market. In late 2016 Rocket Lab USA and AAC entered into discussions to use PSCA for Electron launches and as the year came to an end, Rocket Lab USA and AAC were in final negotiations for launching the Electron from PSCA as early as 2018.

"AAC brings a critical component to our launch program by providing essential range safety capabilities during our initial development phase. This will allow Rocket Lab to control launch costs and for us to invest in development of an Autonomous Flight Termination System designed to provide a lower cost launch alternative for future commercial operations."

~ Peter Beck, Rocket Lab

AAC projects that the ultra-small launch vehicle market, designed to support the low-cost commercial small satellite industry, will continue growing over the next few years. By securing a solid relationship with Rocket Lab USA, AAC has fundamentally changed past traditional marketing efforts from being primarily government customer driven, to capitalizing on the unique aspects PSCA offers to the growing commercial launch vehicle and satellite industry.


THE RANGE SAFETY AND TELEMETRY SYSTEM SUPPORTING THE ROCKET LAB LAUNCH SITE IN NEW ZEALAND.

## VECTOR SPACE

Demonstrating commitment to the commercial ultra-small launch market, AAC has worked closely with Vector Space to provide a cost competitive environment from which to test and develop a new liquid fueled rocket for satellite launches into Low Earth Orbit (LEO). In 2015, Vector (then called Garvey Spacecraft Corporation) conducted a pathfinder evaluation of PSCA by shipping a prototype first stage segment to PSCA and conducting fuel loading procedures at the site. Based on their experience at PSCA and the competitive advantage PSCA has over Vandenberg Air Force Base for small commercial operations, Vector Space has announced their intention to use PSCA for operational launches and AAC is actively working with Vector Space to meet their launch requirements to conduct launches from PSCA in 2017.

Vector Space
Innovate, Build, Fly

AAC secured a commercial contract with Vector Space Systems (VSS) in early 2016 to support the planning and program requirements for launch of their ultra-small launch vehicle from PSCA. In December AAC signed a commitment letter to support VSS commercial launches from PSCA between 2017 and 2019. The initial project will be to conduct a launch vehicle pathfinder in early 2017, followed by the first launch later in 2017. This bodes well for the commercial marketing efforts AAC initiated to diversify the customer base at PSCA to include both commercial and government launch services.

"While Vector may do some launches from Cape Canaveral Air Force Station in Florida, it will primarily operate from Alaska, which has a much less crowded range. That works out well, Cantrell said, because many of the polar orbits desired by customers are easier to reach from northern latitude launch sites."

~ ARS Technica, August 2, 2016

## FY 2015 FEDERAL APPROPRIATIONS

Concurrent with the facility reconstruction project and general site improvements, AAC successfully completed a number of projects funded by the Federal government to enhance the capabilities of PSCA. Under the FY 2015 Department of Defense Appropriations budget, AAC received $2,558,833 for upgrades to PSCA capabilities designed to enhance our ability to cost effectively support future US government and commercial launches.

The primary upgrades focused on launch system support equipment and facilities. Major improvements were undertaken to the Range Safety and Telemetry System (RSTS) which has resulted in the ability of AAC to accommodate advanced technology capabilities of the emerging commercial small and ultra-small launch vehicle market. These improvements were specifically selected because they also provide enhanced capabilities for our traditional government customers, resulting in more affordable costs.

Major 2016 accomplishments under the appropriation for the RSTS included:

- New Bit Synchronizers
- New Decommutators
- New Control Software
- New Telemetry Test Set
- Telemetry Computers
- Upgrade Antenna Control Units
- Upgrade Displays

To enhance PSCA capabilities for future government and commercial services in a rapidly evolving aerospace environment, numerous other facility upgrades were accomplished which also incorporated enhanced security capabilities. These included:

- New Capability – High Speed Launch Video Cameras
- Upgrade Launch Operations Control Center projectors
- Procuring Commercially Secure Network Conferencing
- Video Surveillance System Upgrades
- Fencing Upgrades
- Security Signage Upgrades
- New Computer-based Site Access Control System
- Enhanced secure customer offices and conference areas

The extensive improvements allowed by the FY 2015 Federal Appropriation provided PSCA with a tremendous opportunity to customize improvements with state-of-the-industry items that ensured AAC continues to provide the most efficient, low-cost launch capabilities to both the government and commercial launch customers. More importantly, by making the necessary upgrades and improvements to our systems, processes, and facilities, AAC will remain competitive with other US ranges and be able to provide customers the most up-to-date capabilities, using advanced technology, at the most affordable rates. As we transition into the emerging small and ultra-small launch vehicle market, these improvements will provide AAC with a distinct advantage for using PSCA by both government agencies and the commercial industry.



## EQUATORIAL LAUNCH SITE EVALUATION – HAWAII AND SAIPAN

Continuing to pursue competitive advantages in the commercial launch industry, AAC made significant advances towards potentially providing equatorial launch capability. Following a 2015 board approval to conduct an evaluation of potential equatorial launch sites, AAC completed an extensive review of locations in the Pacific Region that met the board's requirements that any new equatorial launch site must:

- Be within the United States Pacific Region (States or Territories)
- Not co-located with a Federal government range
- Allow for easterly launches without overflying populated areas

Throughout the year site visits were conducted to East Hawaii; Guam; and Saipan and Tinian, Commonwealth of the Northern Mariana Islands (CNMI). Extensive analysis of launch trajectory opportunities, cost of construction/operations, time to become operational, and the political/bureaucratic environment were evaluated. It was concluded that the East Hawaii location best met the requirements for an equatorial launch site, based on potential launch azimuths, cost of construction/operations, and surrounding community infrastructure and aerospace manufacturing potential. However, there remain significant political, bureaucratic, and environmental issues that must be resolved before a launch site could be built there. These issues most probably would impact the cost of construction and the time when the facility would be operationally available.

Therefore, after further evaluation, the Saipan site at Marpi, on the northeast end of the island, proved to be the location that had the greatest potential for development and operation by 2018. At year's end, AAC recommended to the Board of Directors to continue with developing a business plan and producing the preliminary design and engineering drawings for a potential site in Saipan. AAC secured a Temporary Authorization Land Use Permit from the CNMI Department of Public Lands to proceed with site evaluations and has registered as a Foreign Company for doing future business in the CNMI.

AAC has actively engaged with a number of commercial launch customers to ascertain the potential market for use of a Saipan launch facility. Should the emerging small and ultra-small launch vehicle market prove sufficient to develop the Marpi site, AAC will secure funding for this project from private investments and venture capital funding to complete this project in 2017. As an Alaska state-owned corporation, AAC will not use any State of Alaska funds for development or operation of this site. AAC intends to also seek Federal funding for this project.

Meanwhile, we continue to work with the local East Hawaii community; the Hawaii Office of Aerospace Development; University of Hawaii, Space Flight Laboratory; and government officials to refine the development plan, public outreach, and financial model for that site. The distinct advantages this site provides to a number of small and ultra-small commercial rocket operators makes an East Hawaii site ideal for long term equatorial orbit access. In 2016, the Hawaiian community accelerated activities towards development of the East Hawaii launch site and AAC committed to work with the community towards the development of the site. As proposed, AAC would be the developer, owner, and operator of the East Hawaii site, leasing land from the private sector for the site and maximizing local employment for sustainment of the site. As owner/operator of the site, AAC would offer to commercial and government customers access both equatorial and polar orbits through a single contract with AAC. While this site may take longer to develop, if successful, the site provides an ideal location for many ultra-small launch vehicle operators to reach equatorial orbit.

Based on the probability that we can develop a viable equatorial launch site, the Board of Directors authorized AAC to proceed with the initial development design and costs evaluations with the prospect of potentially having an operational facility by 2018. Should we be able to establish an equatorial launch site within the United States, we will establish a niche in the launch services business by being the only U.S. commercial company able to offer standardized procedures and single pricing to the commercial satellite industry with guaranteed launch date assurance, operating exclusively from the US for both polar and equatorial orbits. This unique capability will create a distinctive marketing advantage for AAC and is expected to generate a positive financial benefit to the company within the first year of operation.

## A THIRD COMMERCIAL LAUNCH SERVICES CUSTOMER

As the year came to a close, AAC signed an exciting multi-year commercial launch commitment with another commercial company to support launches from PSCA starting in late 2017. Based on the terms of the commitment, we are not at liberty to disclose the name of the company, although it has been in the aerospace industry for years and recently decided to expand into the new ultra-small launch vehicle market. The launch vehicle is a fully commercial, ultra-small rocket capable of placing small payloads into sun-synchronous orbit. As AAC continues to develop commercial launch service capabilities at PSCA, having this aggressive new entrant launching from PSCA solidifies a significant shift from exclusively serving government customers, to meeting the emerging market demand for affordable polar orbit launch capabilities.

## AURORA LAUNCH SERVICES

Continuing our transformation towards a public private corporation, in February 2016, the Board of Directors passed Resolution #16-01 authorizing AAC to create a new wholly owned subsidiary for the purpose of implementing a new low-cost launch services capability for space-related economic growth and to improve the entrepreneurial atmosphere in the state. At the December 2016 board meeting, a resolution passed authorizing AAC to proceed with the establishment of Aurora Launch Services, Limited Liability Company (ALS). ALS will be a manpower services company, with no launch facility ownership. Initial plans are to transfer all PSCA launch service requirements to ALS by late 2017, as well as to market ALS to other commercial launch complexes worldwide.

The purpose of ALS is to provide low cost, highly reliable launch services on a contract basis to both government and commercial space launch customers worldwide. ALS will be a pioneer contract services company providing low costs services, headquartered in Anchorage, Alaska and co-located with AAC.

## MEDIUM-LIFT ENVIRONMENTAL ASSESSMENT

Following a three year process that included extensive public outreach and inter-governmental agency reviews, the FAA/AST released the final approved Finding of No Significant Impact (FONSI) determination for the Environmental Assessment process in April 2016. The release of the FONSI provides us with significant opportunities to meet market demands in the medium-lift market and allows for the development of the necessary facilities to be constructed at PSCA once a medium-lift customer has committed to using PSCA for commercial and/or government launches.

Having this approved EA provided AAC with the ability to expedite our contract negotiations with MDA for the THAAD program at PSCA. Since the MDA program will be located in the area previously intended for medium-lift operations, the road and support infrastructure was adequately covered in the EA to preclude the need to complete another EA for use of the site by MDA.

## PLANET RELATIONSHIP

In 2016, BlackBridge was acquired by Planet Lab, a San Francisco based imaging satellite manufacturer. During the summer of 2016, Planet Lab shortened its name to simply Planet. The objective of Planet is to design, build and launch satellites faster than any company or government in history, using commodity consumer electronics to build highly capable satellites at drastically lower costs.

Under the BlackBridge agreement, AAC held distribution and resale rights for all imaging data from the RapidEye satellite constellation covering Alaska. With Planet exclusively manufacturing and deploying the "Dove" satellite, the RapidEye constellation did not meet the long term business direction for Planet; therefore, the RapidEye constellation planned Next Generation system was cancelled. Concurrently, Planet announced it would commit $60.0 Million in geospatial imagery to the global community. With the change in ownership of the RapidEye constellation, the emphasis by Planet on maximizing the benefits of the Dove constellation, cancellation of the RapidEye Next Generation project, as well as the commitment to donate imagery, AAC and Planet mutually agreed to terminate the contractual agreement originally established with BlackBridge. This action is projected to save AAC nearly $1.5 Million over the next three years.

# Our Future Direction

The 2012 AAC Annual Report included a Business Environment Assessment designed to explain the state of the national space industry, external factors beyond AAC control, and the AAC approach to meeting market challenges. Four years later, it is appropriate to reflect back on the industry environment that AAC faced at that time and determine whether the strategy for recovery outlined in 2012 has been successful.

It is noteworthy to mention that in 2012 AAC had no idea the 2014 Advanced Hypersonic Weapon (AHW) test launch would end in a launch vehicle failure that would damage facilities to the extent that AAC was unable to conduct launch operations from PSCA for nearly two years. This caused a significant set-back in securing new business throughout the reconstruction process. However, in spite of this event, the rapid recovery of AAC in 2016 with new launch contracts from both the government and commercial sectors is an acknowledgment of the exceptional leadership and professional accomplishments of the entire AAC Team.

In 2012, the United States was struggling to recover from a severe national economic downturn that created a negative impact on a constrained space market. Yet, at the same time, the space launch business was becoming fiercely competitive with SpaceX directly challenging United Launch Alliance's (ULA) virtual United States launch monopoly. AAC faced tremendous pressure following the successful launch of the TAC-SAT 4 satellite in 2011, since most potential customers were heavily dependent on government contracts and the ultra-small launch vehicle market had not yet materialized. Foreign pressures further created a negative economic benefit for commercial companies to seek US launch vehicle solutions, with the US dropping to third, behind Russia and China, in the number of launches annually. Coupled with this, high operational costs for AAC restricted the ability of the company to offer a competitive advantage in affordable launch services resulting in AAC becoming dependent on State of Alaska funding for Operations and Sustainment.

At that time, we established a growth plan that was primarily based on maintaining our previous, primarily government; small launch services from LP-1 and expanding into medium-lift capability, to include construction of a new medium-lift launch facility (Launch Pad 3). With a stagnant national economy and significant multi-year reductions in the defense budget, the need for launch services from non-Federal launch facilities experienced a noticeable decline. Between 2011 and 2016, AAC conducted only one launch. That launch was the AHW mission for the Federal government.

In 2014, we changed direction, focusing on diversifying our business into satellite imaging data processing, distribution, and sales; establishing earth station data downlink facilities along the North Slope; and pursuing small unmanned aircraft systems, while retaining our traditional launch capabilities. By the end of 2014, we also placed our effort at developing medium-lift capability on hold until such time as there developed a financially sustainable medium-lift commercial market demand.

By 2015, the emerging small and ultra-small launch vehicle rapidly expanded, with a number of new entrants into the market, such as: Rocket Lab, FireFly, Vector Space Systems, and XBow, to name a few. In addition, companies like Space Flight Services projected a significant increase in the number of small and ultra-small satellites companies that would require low cost launch options to place imaging, communications, data, and navigation satellites into Low Earth Orbit (LEO). With this market opportunity developing, AAC concluded that PSCA was strategically located to successfully compete for both government and commercial launches.

This year provided AAC the opportunity to conduct a strategic shift in business development. Having secured initial contracts with Rocket Lab, Vector Space Systems, and a third new entrant for small launch vehicle support, we recognized that industry demand for low cost launch services had reached a point that new entrants were eager to secure long term, low cost commercial launch services from non-Federal ranges. We have capitalized on this opportunity by developing a competitive pricing and service package and taking the first step in establishing a wholly owned subsidiary to specifically provide lower cost launch services to all users of PSCA.

Our future is bright. By the end of 2016 AAC's financial projection shows 2017 will have a positive cash flow and the company will be self-sustaining with a diversified base of both government and commercial customers. Our team is actively marketing our services to a broad customer base. Whether providing range safety services to Rocket Lab USA at their Mahia, New Zealand launch site, or supporting the Highlands and Islands Enterprise in potential development of a new launch facility in northern United Kingdom, to expanding our service capabilities by establishing an equatorial launch site in the Pacific region to support both government and commercial customers, AAC has taken the lead in providing the highest level of professional launch services, at the lowest cost level. The word is out that AAC is at the leading edge of offering low cost, reliable launch services on a competitive commercial basis, making us attractive to a plethora of new entrants, as well as retaining our base of traditional customers.

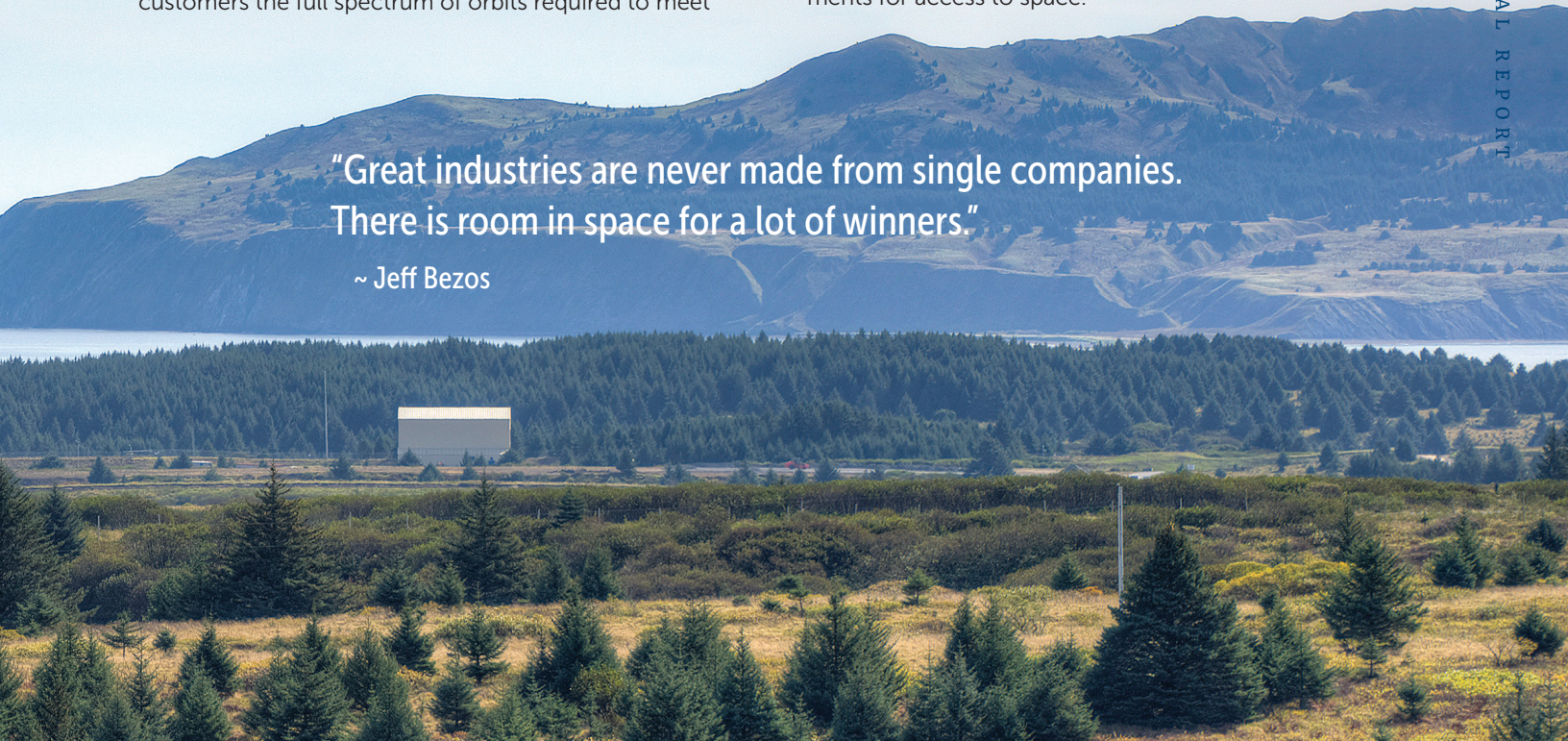
As we enter 2017, AAC will remain focused on our core competencies of launch services. We will expand our operation to include a wider range of launch vehicles and strive to establish equatorial launch capability to allow customers the full spectrum of orbits required to meet the satellite industries market. We will protect our market share by making small capital investments in specific infrastructure necessary to support business expansion by existing customers, as well as to retain the potential for further expansion into medium-lift capability, should the market develop.

AAC recognizes our core competency is providing launch services to both government and private sector customers. We also understand the need to evolve as the market evolves. With that, we anticipate that Autonomous Flight Termination Systems (AFTS) may become operational in 2017/2018 and therefore, we will continue to upgrade our RSTS to support customer requirements, but will also invest in the necessary support infrastructure to offer AFTS services from PSCA at the earliest opportunity, based on customer demand.

We will continue to pursue international business, whether it be providing commercial launch services at other ranges, or offering aerospace technical services to development of other spaceports that could complement our activities at AAC. With the objective of gaining a greater market share of the small and ultra-small launch vehicle market, we will expand our efforts at marketing the capabilities of AAC, both from PSCA and our potential equatorial launch site, to international customers that are also developing small and ultra-small launch vehicles.

As we move forward, it is clear that we have created the facilities and capabilities that are in demand for the new low cost launch environment. We have what the industry needs and have positioned ourselves ahead of the competition in having these services available as the market begins to mature. We also have the talent and motivation to meet both the government and commercial requirements for access to space.





# Our People

A successful company can only be as successful as the people that support the vision and mission of the company as it pursues excellence. Over the past year, AAC further streamlined the company and positioned itself to be more competitive in the commercial marketplace by eliminating four state employee positions and combining additional services within the remaining state workforce. We ended 2016 with fourteen state employees, down fifty-four percent over 2015, when we started that year with thirty state employees.

As we position AAC for the future, we continue to foster an environment that supports our growth strategy. This entails retaining the core business services that are required to meet both state and federal requirements for conducting business in Alaska, but also making launch services more affordable by using contract and supplemental professional services specifically tailored to support the launch service requirements unique to each customer. We are continuously working to improve our work culture and make the adjustments from a company that was primarily focused on government contracts to one more flexible at handling the diverse requirements of commercial launch companies. We are focused on our customers and providing the level of service they expect at the price they can afford by being agile and adaptive to changing requirements.

A key to this success is the establishment of Aurora Launch Services (ALS) in 2017. As a wholly-owned subsidiary of AAC, ALS will provide flexible capabilities to provide launch services at competitive rates. Furthermore, ALS brings the potential of securing additional launch services at locations other than those operated by AAC. ALS will be minimally staffed, with just three full-time employees. The remaining staff will be comprised of specialized technicians required to conduct launch services on a mission by mission basis. This change will be a first in the industry and it is our intention to maximize the employment of Alaskans who have the skills gained by past operations at PSCA.

We recognize that the strength of any company is the quality of the people. As AAC changes to meet both government and commercial demands across a wide spectrum of launch services, we understand that the people who do the work must be inspired, motivated, and committed to the mission. By providing greater opportunities for a variety of work we will be leveraging the talents of a diverse workforce to meet customer requirements and further shape our future.

In 2015, we established a satellite office in Huntsville, Alabama to focus our marketing efforts on Space and Missile Defense Command (SMDC) and the Missile Defense Agency (MDA). We started the office with a single contract employee. With the $80.4 Million multi-year contract with MDA, we expanded the Huntsville staff to three contract employees this year. This expansion has been focused in the project management and project financial areas to facilitate easier and timelier responses to MDA inquiries and requirements. The Huntsville market remains a major focus for AAC, as many evolving DoD programs being pursued by both the Space and Missile Defense Command (SMDC) and MDA are complementary to our current contracts and business development initiatives with the emerging commercial space launch companies. This is a key element in maintaining a productive relationship that has the potential of expanding, resulting in additional future SMDC and MDA missions at PSCA.

The people at AAC, both state employees and contractors, compromise some of the highest skilled and dedicated people in the aerospace industry. It is their commitment to success that allowed us to meet the challenges of 2016 and provide the platform for a strong 2017.

RANGE SAFETY AND TELEMETRY SYSTEM CONSOLE OPERATIONS.

# Financial Performance

This year presented a financial challenge to the company, as we had no launch customers to generate revenues due to reconstruction of the damaged facilities and the need to make capital investments required to modify facilities to support customer requirements in 2017. We were successful at some limited imaging data sales and conducted a series of studies on future opportunities, including site visits and initial evaluations towards developing an equatorial launch site in the future.

One of the revenue highlights of the year was a $2.6 Million Federal appropriation for facility upgrades. Simultaneous with our rebuilding the damaged facilities, we were able to complete many upgrades and betterments using Federal funds, as described earlier in this report.

AAC also completed the final work on deferred maintenance from the FY2015 budget. These improvements ensure that our facilities will remain operational without the need for replacement for many years to come.

Contributing to our financial performance in 2016 was the delay in insurance payments for the work completed on the reconstruction. While the facility rededication ceremony was held in August, and Davis Constructors were essentially complete by September, over $4.0 million of insurance reimbursement funds were not paid to AAC in 2016. It is projected all final insurance payments will be received in 2017, but not having the funds deposited by the end of 2016 was a major factor in the end of year financial positon of the company.

Another factor was our efforts to reduce the cost of reconstruction by assigning some AAC employees to the reconstruction project, which at the closing of the project became a mostly non-reimbursable claim by the insurers. Therefore, most funds expended using AAC employees for reconstruction were not reimbursed to AAC by the insurers and had to be paid through cash reserves. This accounted for nearly $1.0 million in 2016.

The investment in facility and structural betterments further depleted funds by using cash reserves to make capital investments in systems that enhance our capabilities. The decision to make the betterments at the time that other construction was being completed, and when there were no launch customers, proved to be a good decision because these betterments were completed without creating any launch schedule conflicts, thereby allowing them to be quickly completed at low cost to the company. We are now able to provide enhanced services to customers starting in 2017.

An additional factor in our 2016 financial performance was the requirement to complete a number of other infrastructure improvement projects to facilitate a quick and smooth transition for MDA operations in 2017. By the terms of the MDA contract, AAC agreed to finance the improvements and modifications during the initial phase of the contract, with MDA reimbursing AAC through progress payments. This resulted in AAC making expenditures in late 2016 where the revenues will not be received until 2017.

Our 2016 BDO Financial Statement, for the state fiscal year ending June 30, 2016, found that the value of AAC increased from 2015 to 2016. The following excerpt from the BDO report shows that total operating expenses decreased $1.12 Million while operating revenues decreased by $6.95 Million. The decrease in operating revenues is directly related to the lack of launch customers in 2016 caused by the inability to support launch operations during reconstruction. However, based on the investments generated by reconstruction, the total change in net positon, before capital contributions, was a positive $4.18 Million, resulting in an end of year increase in Net Positon of $4.9 Million year over year. In the last six months of 2016, AAC further expended $6.73 Million on reconstruction and infrastructure improvements, which further reduced our cash reserves, ending 2016 with $3.12 Million cash-on-hand.

Despite the fact that 2016 was a financially challenging year; AAC remains in a strong financial position for the future based on projected customers sales, outstanding receivables, and projected Federal grants. As the year came to an end, the US Congress had passed the FY2018 National Defense Authorization Act (NDAA) which included specific wording for the use of PSCA by the Federal government and provided the basis for inclusion of a $5.0 Million FY 2017 appropriation currently contained in the US Senate FY 2017 Defense Authorization Act. It is anticipated these funds will become available by mid-2017 to support additional infrastructure and equipment purchases to further enhance our capabilities to meet future Federal government launch requirements. We also anticipate over $4.0 Million in reconstruction payments in 2017, reimbursement of improvements completed in 2016 for MDA, coupled with additional task orders under the MDA IDIQ contract and other contracts for commercial launches from PSCA.

AAC has operated since the end of 2014 without state funds, based on the fiscal uncertainty of the state's economic future and the desires of both state government and the AAC Board of Directors to have AAC operate as a commercial company, generating sufficient revenues to cover expenses and to create expanded aerospace opportunities for Alaska. A review of state investments against federal grants and launch revenues continues to show that AAC has provided a positive economic impact to the state. The following chart depicts the division of total revenues ($382,887,449) generated by AAC since becoming operational in 1998. Of the total revenues generated, the state has contributed $58,688,966, accounting for 16% of total revenues. Of this amount $21,433,466 was used for capital

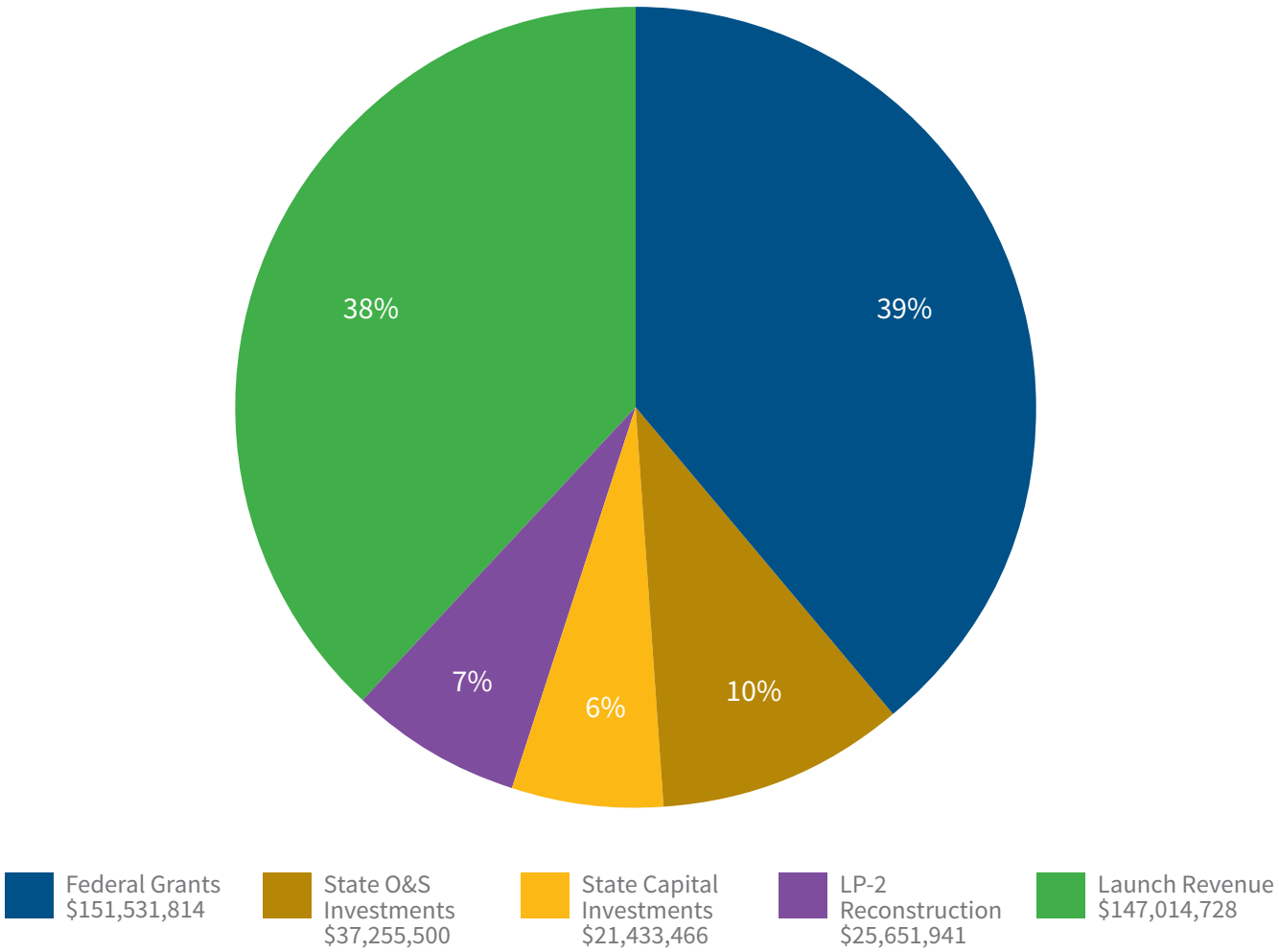
investments that improved the PSCA infrastructure and enhanced our capabilities to attract customers to Alaska. Since this capital investment was made by the state at PSCA, the capital improvements remain state property and are included in the total capital investment owned by the state at PSCA.

As a state owned corporation, AAC is included in the state insurance pool and pays insurance premiums each year to the state to cover the insurance coverage of the company. The 2014 launch failure caused significant damage to three primary facilities at PSCA. In the chart below, the $25,651,941 paid for reconstruction of LP-2 was covered by insurance, not using state general funds.

Finally, 2016 has provided a solid base for economic growth in 2017. With reconstruction completed and contracts with new commercial customers in hand, we look forward to 2017 being our most active year since being established. We expect that 2017 will result in less capital investments and higher receivables from both government and commercial customers, allowing AAC to recover some of the expenses incurred in 2016. As we look towards 2017, AAC anticipates growth in both the government and commercial sectors, further strengthening the company's ability to realize an improved financial positon. As stated at the beginning of this report, 2016 was the year that AAC has *Taken Flight*. Financially, we no longer predict the need for state operating and sustainment funds and look forward to achieving the original intent of the formation of this corporation – providing a positive economic benefit to the state.

"If I can get some student interested in science, if I can show members of the general public what's going on up there in the space program, then my job's been done."

~ Christa McAuliffe



FINANCIAL PERFORMANCE

# Statement of Net Position

## June 30, 2016 (With Comparative Amounts for 2015)

| *June 30,* | **2016** | **2015** |
|---|---|---|
| **Assets and Deferred Outflows** | | |
| **Current Assets** | | |
| Cash and investments | $10,059,818 | $23,388,422 |
| Accounts receivable | 435,982 | 467,775 |
| Unbilled receivables | 129,803 | 217,772 |
| **Total Current Assets** | 10,625,603 | 24,073,969 |
| **Noncurrent Assets** | | |
| Capital assets not being depreciated | 32,399,864 | 5,996,928 |
| Capital assets being depreciated/amortized, net | 50,068,461 | 53,787,818 |
| **Total Noncurrent Assets** | 82,468,325 | 59,784,746 |
| **Total Assets** | 93,093,928 | 83,858,715 |
| **Deferred Outflows** related to pensions | 600,855 | 394,854 |
| **Total Assets and Deferred Outflows** | $93,694,783 | $84,253,569 |
| | | |
| **Liabilities, Deferred Inflows and Net Position** | | |
| **Liabilities** | | |
| **Current Liabilities** | | |
| Accounts payable | $5,950,492 | $380,417 |
| Accrued leave and compensation | 259,044 | 289,778 |
| **Total Current Liabilities** | 6,209,536 | 670,195 |
| **Noncurrent Liabilities** | | |
| Unearned revenue | 6,552,900 | 8,361,176 |
| Net pension liability | 4,388,416 | 3,433,655 |
| **Total Noncurrent Liabilities** | 10,941,316 | 11,794,831 |
| **Total Liabilities** | 17,150,852 | 12,465,026 |
| **Deferred Inflows** related to pensions | 220,728 | 396,704 |
| **Net Position** | | |
| Net investment in capital assets | 82,468,325 | 59,784,746 |
| Unrestricted | (6,145,122) | 11,607,093 |
| **Total Net Position** | 76,323,203 | 71,391,839 |
| **Total Liabilities, Deferred Inflows and Net Position** | $93,694,783 | $84,253,569 |

# Statements of Revenues, Expenses, and Changes in Net Position

## June 30, 2016 (With Comparative Amounts for 2015)

| *Years Ended June 30,* | **2016** | **2015** |
|---|---|---|
| **Operating Revenues** | $2,124,105 | $9,082,770 |
| **Operating Expenses** | | |
| Personnel services | 3,342,926 | 4,135,514 |
| Travel | 148,309 | 336,284 |
| Contractual services | 3,351,277 | 3,603,764 |
| Supplies | 315,719 | 581,033 |
| Equipment | 801,296 | 118,796 |
| Depreciation and amortization | 3,719,357 | 4,073,310 |
| **Total Operating Expenses** | 11,678,884 | 12,848,701 |
| **Net operating loss** | (9,554,779) | (3,765,931) |
| **Nonoperating Revenues (Expenses)** | | |
| Interest income unrestricted | (439,056) | 47,988 |
| PERS relief from State of Alaska | 70,808 | 238,464 |
| Insurance proceeds, net of loss on impairment | 14,105,621 | 707,138 |
| **Total Nonoperating Revenues (Expenses)** | 13,737,373 | 993,590 |
| Loss before capital contributions | 4,182,594 | (2,772,341) |
| Capital contributions - State of Alaska | 748,770 | 73,874 |
| Capital contributions - Federal | - | - |
| **Change in Net Position** | 4,931,364 | (2,698,467) |
| **Net Position,** beginning of the year, as restated (Note 14) | 71,391,839 | 74,090,306 |
| **Net Position,** end of the year | $76,323,203 | $71,391,839 |

“Space exploration is a force of nature unto itself that no other force in society can rival.”

~ Neil deGrasse Tyson


4300 B Street, Suite 101
Anchorage, Alaska 99503
907.561.3338
akaerospace.com