

#### 2011 Annual Report

TRANSITION

DELIVERY

RELIABILITY

GROWTH

#### **Board of Directors**

#### Pat Gamble, Chair

President, University of Alaska Statewide System General, USAF (Ret)

**Drue Pearce, Vice Chair** President, Spill Shield Incorporated Senior Policy Advisor, Crowell & Mooring LLP Former Alaska State Senator and Representative

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**David Weldon, MD** Partner, MIMA Physician Group US Congressman, Florida (retired)

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Vice President for Energy, Environment, and Applied Research at Colorado State University Former Under-Secretary of the Air Force Two time astronaut on Space Shuttle Discovery

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Adjutant General, Alaska Army National Guard Commissioner, Department of Military and Veterans Affairs

#### Jim Underwood

Vice President, Business Development and Federal Services URS Federal Services, Inc. Rear Admiral, USCG (Ret)

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**Tom Walters** Maritime Helicopters, Owner (Kodiak)

**Senator Joe Thomas** (non-voting) Alaska State Senate

**Representative Alan Austerman** (non-voting) Alaska State Legislature

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#### Chairman of the Board's Letter

To Governor Sean Parnell, the State Legislature, and the People of Alaska,

The Alaska Aerospace Corporation (AAC) delivered another year of industry-leading performance in 2011, finishing the year with the successful launch of a tactical communications satellite for the Naval Research Laboratory – TacSat-4. This has also been a tremendous year of change. Transition started early in the year, with our former Lieutenant Governor and former Alaska National Guard Adjutant General, Craig E. Campbell, joining the AAC team as President and Chief Operating Officer, replacing Tom Case, who became the Chancellor of the University of Alaska – Anchorage. On behalf of the entire AAC Board, I want to thank Tom for his outstanding service and welcome Craig to the team.

Recognizing our unique customer base, Governor Parnell issued an Executive Order in March 2011, administratively moving AAC from the Department of Community, Commerce, and Economic Development (DCCED) to the Department of Military and Veterans Affairs (DMVA). This move became effective July 1, and has been widely appreciated by our defense customers as recognition of the importance the state places in expanding relations with the Department of Defense in space launch operations. As our nation faces a challenging economic future, we are pleased that AAC will play an essential role in preserving our nation's lead in space operations, while providing a cost-effective facility for launch operations.

Transition continued with a number of new faces joining the AAC Board of Directors. With the change in departments Major General Tom Katkus, Adjutant General for the Alaska National Guard and DMVA Commissioner replaced DCCED Commissioner Susan Bell on the AAC Board. I want to welcome Tom to the Board and thank Susan for her solid support of AAC. I am also pleased to welcome Governor Parnell's appointment's of former State Senate President Drue Pearce, Rear Admiral (retired) Jim Underwood, and Dr. Robert McCoy to the AAC Board. These new members provide AAC the opportunity to expand our network within the aerospace industry and bring new business development to Alaska. I also wish to thank outgoing AAC Board members Mike Nizich and Roger Smith for their dedicated service to AAC these past years.

A significant reason AAC has been able to retain the excellent position in space launch operations is due directly to the tremendous support of Governor Parnell and his administration. I want to express my sincere appreciation to Governor Parnell for his unwavering support of the aerospace industry in Alaska. In 2011 he included funding in the state capital budget for continued operations and infrastructure improvements at the Kodiak Launch Complex which enabled AAC to continue offering the finest state-of-the-industry launch facilities to potential launch customers. I also want to acknowledge Governor Parnell's Alaska Military Force Advocacy and Structure Team (AMFAST), which this year reaffirmed support for one of their top priorities; promoting the expansion of the Kodiak Launch Complex, a vision we will be pursuing in 2012.

Looking back over the past twenty years, the Alaska Aerospace Corporation has grown from an idea into a national asset which is today providing the state with employment opportunities in the aerospace industry, bringing diversified businesses into the state, and offering a future for the next generation of science, math, engineering, and technology educated Alaskans. It is with great anticipation that I look forward to 2012 at Alaska Aerospace. On behalf of the full Board of Directors, I am pleased to present this 2011 Annual Report.

Patrick K. Gamble Chairman of the Board Alaska Aerospace Corporation



#### **Chief Executive Officer's Letter**

To Governor Sean Parnell, the State Legislature, and the People of Alaska,



This year has been an exciting period for the Alaska Aerospace Corporation (AAC). When I first became the AAC Chief Executive Officer (CEO) in February 2008, AAC's future appeared tied almost exclusively to the Missile Defense Agency, with a number of launches scheduled, but few other strong business development options on the horizon. Over the past few years, we have worked to change that direction, to diversify AAC into a premier aerospace company, based in Alaska, serving Alaskans, and providing for a bright future for our state.

In 2011, AAC delivered another year of industry-leading performance, finishing the year with the successful launch of a tactical communications satellite for Operationally Responsive Space Office and the Naval Research Laboratory – TacSat-4. That launch culminated a year where the professional staff of the AAC excelled in performance and earned the recognition from our customer as "Exceptional." With the successful Space Test Program S-26 launch in November 2010 and the subsequent TacSat-4 launch, both US Air Force sponsored launches, I am pleased to report that AAC is moving forward with a diversified business approach that will strengthen the aerospace industry in Alaska.

I would like to join our Chairman in thanking Tom Case for his dedicated service to AAC as our former President and Chief Operating Officer. Tom was an integral part of the team. However, with Tom's departure, AAC was very fortunate that Craig E. Campbell was available to join the team. Craig's previous military relationships, having served over 35 years in both the Air Force and National Guard, coupled with his most recent Alaska political experience as Lieutenant Governor, brings a wealth of experience and Alaskan relationships to our team, at the exact time that these skill-sets are most needed. I am very pleased that Craig is Tom's replacement.

With space operations facing economic and political challenges nationally, AAC reevaluated our market position in 2011 and identified potential opportunities to expand our corporation's portfolio. This year we published a new Strategic Plan, which has provided us a diversified approach to aerospace development in Alaska. We are not just a rocket launch facility for the Missile Defense Agency anymore, but rather, we are a significant small-lift launch complex for the US with a geographical advantage for many polar orbits. Due in part to this geographic advantage, our cost-effective and streamlined operations, and established national reputation of professionalism; we are now pursuing expansion into medium-lift capability, unmanned aircraft systems (UAS), aerospace support businesses, as well as educational and technology driven programs in association with the University of Alaska.

As we look to the future and the fact that a majority of both orbital and sub-orbital launches will be conducted with small and medium-lift rockets, it is imperative that AAC develop the medium-lift capability. This year we were actively engaged in discussions with a number of launch providers to consider the Kodiak Launch Complex (KLC) for west coast, medium-lift operations. These discussions have been very positive and as we enter 2012, I am confident that we will secure a launch customer which will allow us to construct a new medium-lift facility, called KLC Launch Pad 3.

One of our major highlights in 2011 was securing a \$48.0 million contract with the US Air Force, called SpacePorts 3, which allows AAC to receive contractual work from the Air Force to develop program elements which should ultimately lead to more launches from KLC. This contract award is affirmation that the Air Force understands the specific advantages offered by KLC to our nation's space program and is a positive indicator that the Air Force is continuing to include KLC as a valid launch location for future missions.

I want to thank Governor Sean Parnell for his strong support of Alaska Aerospace and his personal involvement in helping recruit aerospace prime contractors to expand their business base at KLC and across the state. This is a great enabler as Alaska Aerospace is viewed much like "Alaska, Inc." as we deal with aerospace customers including the Air Force, NASA, other space states and aerospace companies in the US and internationally. 2011 has been the year where we expanded our business prospects and set the ground-work for diversification and expansion. The spectacular TacSat-4 launch, coupled with a renewed energy for new business opportunities made 2011 one of the best in our history. I am honored at being the Chief Executive Officer for such a dynamic and important industry in our state and I am very pleased to present this 2011 Annual Report.

Dale K. Nash Chief Executive Officer

#### **President & Chief Operating Officer's Letter**

To Governor Sean Parnell, the State Legislature, and the People of Alaska,

What a tremendous year 2011 was for Alaska Aerospace Corporation (AAC). It was especially a great year for me, with the opportunity to replace Tom Case as the President and Chief Operating Officer at AAC. Tom did a tremendous job here and provided a solid foundation for the organization. I wish him all the best in his new venture as Chancellor of the University of Alaska - Anchorage.

Many people have asked me why I decided to join AAC. The answer is simple; Alaska is a truly inspirational place to live, work, and raise a family. Having lived here over thirty years and been actively involved in many aspects of our states growth, I was excited about the prospect of continuing to serve our state with a state-owned corporation, combining both my public and private sector experiences in pursuing the highly technical business of space and aerospace operations for Alaska.

This past summer we were very proud to host the Office of Space Launch (OSL) 2011 Small Payload Rideshare Conference in Anchorage in June. With over 120 attendees, this event provided us the opportunity to offer an industry day tour of our facilities at Kodiak. Attendees came from both the government and commercial sectors. An exciting result from that conference was the number of participants that are now looking at AAC for potential aerospace business efforts in the future, to include new launches from the Kodiak Launch Complex (KLC).

During the conference, Lockheed Martin/ATK announced their intention to conduct annual launches of the Athena II rocket from KLC, starting as early as 2013. This is a major milestone in our plans to diversify operations beyond missile defense. While we were disappointed at the Missile Defense Agency (MDA) not selecting the Lockheed Martin team for the operations and sustainment contract for the Ground-based Midcourse Defense (GMD) system, of which we were one of the Lockheed Martin partners, our relationship with Lockheed Martin has resulted in the potential expansion into other space operations here in Alaska.

In November 2011, AAC attended the first US States and Federal Government Space Forum, hosted by Space Florida, to develop a stronger voice for state aerospace organizations in the national policy and funding discussions. AAC has a strong relationship with Space Florida and one that will be expanding in future years as we seek stronger support from the federal government in supporting a diversified approach to space operations.

The next decade will be a challenging time for our nation, as budgets continue to be tight and the demand for space based systems continues to grow. We have been actively working to develop a requirements-based concept which validates KLC as a national space launch asset and provides the means for greater use of the facilities by the federal government. I want to thank our Congressional delegation Senators Lisa Murkowski, Mark Begich, Congressman Don Young, and their staffers for the consistent support provided in working with the federal agencies to support KLC operations.

This year also marked the retirement of John Katz, our governor's Washington DC representative. John was always extremely helpful in working through federal issues and helping AAC focus on the most efficient means to achieve our goals. We want to wish him well on his retirement and we look forward to working with our Governor's new DC representative, Kip Knudson, in the coming year.

I trust you will find our 2011 Annual Report very informative and that it will inspire in you the vision that Alaska is truly an aerospace state with a diversified economy and prepared to compete in the twenty-first century.

Craig E. Campbell President and Chief Operating Officer



"As I retired from the Office of Naval Research (ONR) and moved to Alaska to assume the duties of the Director of Geophysical Institute at the University of Alaska Fairbanks, I had the unique experience of transitioning from being a customer of the Alaska Aerospace Corporation (AAC) to a member of its Board of Directors. In the last few years of my Navy career, I managed the Navy's Tactical Space Innovative Naval Prototype (INP) program. With that program I sponsored the development and spaceflight of several low-cost, rapidly built maritime satellite payloads. The centerpiece of that program were the UHF Comms-on-the-Move and data exfiltration payloads which constituted the mission of the TacSat-4 satellite launched by the AAC from the Kodiak Launch Complex (KLC) on 27 September. Since October 2007 I was detailed to the Operationally Responsive Space (ORS) Office in Albuquerque, NM, to serve as the Technical Director. The ORS Office was responsible for funding the launch and operations of the TacSat-4 satellite, so I also had the unique opportunity to be involved on both the development side and launch side of that mission.

My experiences at KLC working with AAC were extremely positive and I was very impressed with the state of the art facilities at the Launch Complex, and more importantly, with the efficiency and competence of the AAC team who placed TacSat-4 into orbit flawlessly on that clear sunny morning in September. My opinions of AAC/KLC were echoed enthusiastically by the Naval Research Laboratory team funded by ONR and ORS who were responsible for developing TacSat-4 and getting it to the launch pad. The NRL team spent several months on and off at KLC waiting for the DoD to finalize the Minotaur IV launch manifest to authorize the launch. I've funded and worked with that team often and they have extensive experience with launches at the Eastern and Western Test Ranges. For them it was a unique joy to work with such modern equipment, and more importantly, work with a highly competent AAC team who, if they couldn't provide answers on the spot to NRL requests for information or hardware, went immediately to the expert who could provide what was needed.

The KLC is our nation's newest and most modern launch complex. It was obviously built with efficiency in mind. KLC will undoubtedly play a major role in efforts by the US to provide more responsive space capabilities – more rapidly and at lower cost.

In my new role at the University of Alaska Fairbanks, I look forward to continue to work with AAC to help make KLC the premier launch complex for responsive access to space."



Dr. Bob McCoy Former TacSat-4 Program Manager AAC Board Member Director, Geophysical Institute, UAF

### TRANSITION

#### New President and Chief Operating Officer

Craig E. Campbell joined Alaska Aerospace Corporation as President and Chief Operating Officer in February 2011. His background includes 35 years aerospace experience in the United States Air Force and Alaska Air National Guard, culminating as The Adjutant General, Alaska National Guard. Professionally trained as an Air Traffic Controller, his military experience included logistics and supply, long range planning, executive staff support at the headquarters level, and finally serving as Vice Commander, 168th Air Refueling Wing, Alaska Air National Guard.

Craig was appointed by Governor Frank Murkowski in 2002 as the Commissioner, Department of Military and Veterans Affairs and was promoted to General Officer with subsequent assignment as The Alaska National Guard Adjutant General. He was retained by Governor Sarah Palin as both Commissioner and Adjutant General, and in July 2009 was appointed by her as the Lieutenant Governor, State of Alaska, a position he held until December 2010. He also has an extensive private sector background, with over 15 year's aviation consulting experience. He has conducted airport master planning, environmental planning, economic feasibility studies, and facilities location planning both in the US and internationally. He served in public office starting in 1985 with his election to the Anchorage Assembly, where his leadership capabilities were demonstrated as he twice served as Chair of the body.

#### AAC Oversight Authority Moved from DCCED to DMVA

In a move to build a stronger and more dependable aerospace industry in Alaska, Governor Sean Parnell signed Executive Order 115 on January 18, 2011, moving the oversight authority for the Alaska Aerospace Corporation from the Department of Commerce, Community, and Economic Development to the Department of Military and Veterans Affairs.

"The focus of the corporation has expanded and is no longer primarily commercial business development, but rather development of a unique niche market driven by government and military customers," Governor Parnell said. "By changing the oversight authority, the Alaska Aerospace Corporation will have better access to the federal military command structure and greater opportunity to attract military contracts."

The move was effective July 1, 2011, and will ultimately help grow related private-sector opportunities.

## DELIVERY

"On behalf of the Orbital team, I want to congratulate and thank Alaska Aerospace for their performance on the highly successful Minotaur IV missions launched from the Kodiak Launch Complex in late 2010 and again in September 2011. The integration and launch operations at Kodiak went smoothly, and we found the Alaska personnel to be flexible and responsive to our needs. Overall our team and our end customers were very pleased with the results. We look forward to launching from Kodiak again in the future."

#### Lou Amorosi

Senior Vice-President, Small Space Launch Orbital Sciences Corporation

#### TacSat-4

The liftoff of TacSat-4 on the morning of 27 September, 2011, marked the second successful launch of a Minotaur IV rocket, and the 16th successful launch from the Kodiak Launch Complex. Liftoff occurred at 7:49 am on a clear September morning after a smooth countdown that began in the middle of the night. Three and a half minutes after liftoff, the rocket had expended stages one, two, and three. Five minutes after liftoff, TacSat-4 was 574 miles away at an altitude of 231 miles, which is further from Kodiak than Fairbanks. Then the satellite, with the stage four Star 48 motor still attached, coasted for 20 minutes past California and Mexico before igniting the last stage for movement into the elliptical transfer orbit. The successful spacecraft separation took place off the coast of Chile and was reported through a relay station in Santiago, Chile. After completing the first orbit around the earth, TacSat-4 used it's on board hydrazine thrusters to move itself into final orbit.

TacSat-4 is proceeding with the planned year of testing and checkout operations through the Naval Research Laboratory's Blossom Point Tracking Station in Maryland. The satellite has already demonstrated the capability to relay communications from a man-portable tactical radio using the common whip-antenna that soldiers carry on the battlefield in Afghanistan. Once the check-out period is complete in 2012, TacSat-4 will become an operational communication system that will relay soldiers' signals from harsh terrain in combat zones that cannot be serviced using conventional satellite communications. This capability will allow soldiers and special operation teams to enter remote areas with the confidence of having reliable communications overhead; protecting American lives and taking the fight to the enemy.

The TacSat-4 launch was dedicated to the 30 brave American servicemen who perished on 6 August 2011 in Wardak Province, Afghanistan, in one of America's deadliest events in the decade long Afghan campaign.

WILL NEVER FOR

WARDAY

GUST 2011

ELIVERY

#### STP-S26 Launch Status Report

Our last annual report highlighted the success of the November 2010 STP-S26 launch. We are pleased to report that all seven satellites have completed their missions; some are continuing to provide useful data and services long past their expected lives. Below is a summary of the seven satellites on STP-S26 and what they accomplished:

	Satellite	Owner Purpose		Status	
1	STP-Sat2	USAF, Ball Aerospace	Research space phenomenology and provide Ocean Data Telemetry	Success. Current status is not available.	
H	Fastrac 1&2	University of Texas, Austin	Demonstrate on-orbit relative navigation using GPS and crosslinked communications between two spacecraft.	<b>Success.</b> Fastrac 1 & 2 has a successful separation and data sharing in March 2011. They now serve as a digital repeater for the amateur radio community.	
	FalconSat-5	US Air Force Academy	Research thrust plume in a plasma environment	Success.	
	FASTSat-HSV	NASA, AFRL, Dynetics	Rapidly integrate different sensors and P-POD nano-sat deployment systems on a common spacecraft bus	<b>Success.</b> Two AFRL experiments completed and three NASA sensors operational well past their design lifetime. Successfully de- ployed NanoSail-D2 after initial difficulties.	
×-	NanoSail-D2	NASA	Demonstrate the ability of small sails to rapidly de-orbit space debris	<b>Success.</b> 240 days in orbit followed by a de- orbit on 17 Sep 2011.	
all	0/OREOS	NASA	Study microorganisms reaction in a space environment	<b>Success.</b> Science missions complete with good data.	
	RAX	University of Michigan and SRI International	Research the formation of magnetic field- aligned plasma irregularities (auroras), which are known to disrupt satellite communications.	<b>Success.</b> RAX performed bistatic radar measurements until it lost power in May 2011. RAX-2 built on this success and launched in October 2011 and is currently performing plasma experiments with a radar transmitter at Poker Flat, AK.	

#### Contractor Performance Assessment Reporting System (CPARS) Ratings

The Contractor Performance Assessment Reporting System (CPARS) is a Department of Defense rating system designed to ensure current and accurate data on contractor performance is available for inclusion in source selection for future contracting decisions. AAC personnel work hard to show continual improvement in our CPARS ratings. As a result of the performance by the teams supporting the STP-S26 and the TacSat-4 launches, AAC received an Exceptional rating in seven categories and a Very Good rating in two categories. Below are excerpts of the report:

TECHNICAL (Quality of Product): *Exceptional:* AAC operates exceptionally well-maintained range facilities. Their buildings, launch pad, and launch range infrastructure are in outstanding operational condition ...

SCHEDULE: **Exceptional:** AAC routinely met schedule expectations. Personnel are fully capable of adapting to short-notice schedule changes while maintaining high quality launch services ...

MANAGEMENT: *Exceptional:* AAC implements a streamlined management hierarchy which allows fast, decisive actions. The highly effective management team has well-defined roles and responsibilities ...

PROGRAM & OTHER MANAGEMENT: *Exceptional:* AAC program management focuses on achieving successful team outcomes and demonstrates excellent rational and sound reasoning during team decision making ...



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# RELIABILITY

TacSat-4 launch team mating first and second stage of Minotaur IV launch vehicle.

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#### Refined Launch Environmental Monitoring

The Kodiak Launch Complex exists in an area of great natural beauty, surrounded on three sides by the pristine waters of the Gulf of Alaska and their abundant wildlife. Alaska Aerospace Corporation recognizes its obligation to be a good steward of this special part of the State, as evidenced by a nearly 20-year track record of continuous engagement with regulatory and conservation agencies. During every launch that has ever flown from the KLC, AAC has performed pre- and post-launch environmental monitoring focused on the lands and waters within approximately a sixmile radius of the launch pads. Area streams are tested every launch for any potential impact from rocket exhaust products, an effort which continually indicates launches have no measurable effect on local surface water quality.

Area marine mammals, primarily seals and sea lions, are monitored as well. The latter effort has historically included pre- and post-launch aerial fixed-wing surveys of marine mammal abundance and distribution, noise monitoring in two key areas on Narrow Cape and offshore Ugak Island, and opportunistic video recording of sea lion and seal haulouts along the shores of Ugak Island using unattended portable equipment. Based on past indications of low impact, and following a re-application process with the National Marine Fisheries Service, coupled with public feedback, AAC was authorized early in 2011 to alter their environmental monitoring program. Based on historical data AAC will now monitor noise only when a new class of rocket is flown, and transition to a once quarterly aerial wildlife survey using Unmanned Aircraft Systems provided and operated by individuals from the Geophysical Institute at the University of Alaska, Fairbanks. AAC will also conduct video monitoring of seals off Ugak Island with a remotely operated and viewed, self-supported permanent camera installation. This new monitoring program was successfully debuted during the recent TacSat-4 launch, and will continue to be refined during future launches. The new regimen will generate sound scientific information on the KLC environment during launch campaigns, and results in a substantial cost savings to AAC and our customers on a per-launch basis.

#### DCMA Property Accountability Audit

The Defense Contract Management Agency (DCMA) conducted a Property Management System Audit from July 14 through August 8, 2011. A thorough review of Property, Contract and Financial Records was performed and interviews were conducted with property management and accounting personnel. A DCMA Property Management Specialist evaluated Alaska Aerospace's property procedures and plans as well as property management, storage, control, acquisition, receiving, identification, movement, physical inventory and records systems. The Alaska Aerospace Corporation earned the highest possible rating of <u>ADEQUATE/LOW RISK</u> and a two year interval before the next audit. The next audit is scheduled for the summer of 2013.

#### Implementation of Earned Value Management System

Alaska Aerospace Corporation is implementing an American National Standards Institute (ANSI) recognized Earned Value Management System (EVMS) for project management of the Kodiak Launch Complex Operations and Sustainment (O&S) maintenance effort. This form of project management requires in-depth scheduling and budget assignment of all phases of O&S maintenance and provides monthly status reports to asses actual versus planned maintenance progress and budget expenditures. This undertaking required the integration of our Enterprise Resource Planning System with scheduling and cost management software to meet the ANSI requirements. Once fully integrated, this EVMS will help us cost effectively manage the KLC O&S effort; provide a required capability for the award of Federal Government contracts in excess of \$20 million, and provide an invaluable experience for management of future projects.

#### FAA Safety Approval of the Range Safety and Telemetry System

AAC has continued working with the Federal Aviation Administration (FAA) to obtain safety approval for use of the Range Safety Telemetry System (RSTS) during commercial launch operations. During 2011, Honeywell International, Inc. was contracted to provide an updated reliability analysis that reflects recent changes in the RSTS server configuration. FAA requested this to ensure full compliance with Code of Federal Regulations (CFR) 417. The FAA safety approval will complement the range safety certification received from the Missile Defense Agency's Pacific Range Support Team in May 2010. The FAA has accepted AAC's draft application, but AAC has delayed submitting the final application until new SEMCO<sup>®</sup> telemetry receivers are installed in the first quarter of 2012, which will eliminate the need for AAC to submit an additional application based on the SEMCO<sup>®</sup> installation. AAC tested the SEMCO<sup>®</sup> receivers during the STP-S26 and TacSat-4 missions and confirmed the receivers perform as expected.

#### **Rocket Motor Storage Facility**

The newly completed Rocket Motor Storage Facility (RMSF) is the latest infrastructure addition to the KLC. AAC will now be able to provide customers the ability to transport and store multiple rocket motors when weather conditions are favorable so as to ensure that motor stages are available to meet established launch dates. The second Earth Covered Magazine (ECM) of the RMSF was placed in service in November 2011. The first ECM, completed in August 2010, was used by the Air Force to store the TacSat-4 rocket motors prior to the September 2011 launch.

The RMSF is designed to include a total of five ECMs. This will allow one customer to achieve multiple launches, or multiple customers to achieve consecutive launches in a short period of time resulting in rapid access to space. The RMSF will also allow for contingency planning if motors on the launch pad need to be de-stacked due to launch delay. It also enables AAC to remain competitive with other ranges that do not have transportation challenges. Additional ECMs will be constructed as funding allows.

#### Federal Aviation Administration Space Transportation Infrastructure Matching Grant

AAC applied for and was awarded a Space Transportation Infrastructure Matching (STIM) Grant from the Office of Commercial Space Transportation of the FAA. The funds were used to pave the loading area in front of the ECMs at the RMSF. This was the first grant awarded under this program, and our management and timely use of the funds was recognized favorably by the FAA.

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#### Upgrade of Aerial Surveillance Radar

KLC's surveillance radar has been in operation since 2009. Prior to the TacSat-4 mission the manufacturer updated the MERLIN Air-Search software package and installed it in the KLC system. They configured the software for KLC and the surrounding terrain and then supported the installation on-site at KLC during the TacSat-4 mission. The software update provides an enhanced aerial display by eliminating a significant portion of the ground clutter. Throughout the mission the radar and software performed as designed. Future plans include the installation of a heater inside the radar pedestal housing to eliminate any potential condensation and associated corrosion problems. This work is scheduled to take place in the second quarter of 2012.



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MERLIN Aerial Surveillance Radar.

MERLIN aerial tracking display.

# GROWTH

#### **Small Payload Rideshare Conference**

AAC hosted a Small Payload Rideshare Conference that was sponsored by the Office of Space Launch (OSL) at the Hotel Captain Cook on June 7th and 8th. Over 125 individuals attended the meetings and social events in Anchorage. Attendees signed up for the Kodiak Launch Complex tour on June 9th and were greeted by fair weather and the always enthusiastic KLC team. Feedback from the conference sponsors and attendees was extremely positive and everyone was very appreciative of the conference planning and the chance to tour the KLC facilities. The most common comment after the tour was "I was not aware of the quality of the launch facilities available in Alaska".



Participants in the KLC tour on 9 June 2011.

#### SpaceX Contract

In September 2011, AAC and Space Exploration Technologies (SpaceX) signed a contract to provide telemetry support for the Dragon capsule missions. Beginning in 2012, SpaceX plans on making regularly scheduled supply deliveries to the International Space Station (ISS). The orbit of the ISS brings it nearly over Kodiak, making KLC an ideal location to receive telemetry data from the Dragon spacecraft, which AAC will transmit real-time via the fiber optic network to the SpaceX Mission Control Center in Hawthorne, California. This support will provide their mission managers with the current health and status of the Dragon capsule before it reenters the atmosphere over the North Pacific. This contract also marks the first time that AAC will use the new dedicated fiber optic connection from KLC to Seattle to connect with a customer outside of Alaska.



Artist's rendition of Dragon capsule docking with the ISS.



Aeryon Scout UAS used for Ugak Island overflights.

#### **UAS Studies**

AAC continues to monitor the state of the Unmanned Aircraft System (UAS) market in the United States, and is working with the University of Alaska Fairbanks (UAF) to monitor marine mammals using UAS. The seal monitoring stipulated by the US Fish and Wildlife Service will be accomplished by UAS operated by the UAF Unmanned Aircraft Program. These quarterly overflights of Ugak Island will be performed by a variety of UAS, which allows AAC to gain familiarity with the operations and allow UAF to push the regulatory envelope in a safe environment. AAC continues to look for opportunities to bring large UAS to Alaska to provide services for State, Federal, and commercial entities.

#### **USAF Spaceports 3 Contract**

This Indefinite Delivery/Indefinite Quantity (IDIQ) contract with the Space Development and Test Wing Launch Test Squadron (SDTW/LTS) headquartered at Kirtland Air Force Base, NM, was awarded to AAC in the not-to-exceed amount of \$48 million on August 19, 2011, with a five year period of performance. The objective of the contract is to provide SDTW/LTS with commercial spaceport services for west coast orbital and sub-orbital launches.

This is a follow-on contract to Spaceports 2, which included the STP-S26 and TacSat-4 launches. Task Orders for specific launches will be issued under this contract for specific tasks and launches. AAC has been tasked to perform a study and provide a cost proposal for the modifications required to launch the Minuteman Spacelift Vehicle from Launch Pad 1. Four contracts were awarded by the Air Force under this initiative: Space Florida at Kennedy Space Center, FL; Mid-Atlantic Regional Spaceport at Wallops Island, VA; Spaceport Systems International at Vandenberg Air Force Base, CA; and this contract to Alaska Aerospace Corporation.

This contract firmly establishes the Kodiak Launch Complex as an officially recognized west coast launch facility that is competing with Vandenberg AFB for future business.



Wyatt Ryder

Vincent Mayer

#### University of Alaska Space Grant Program and Internships

AAC hosted two interns this summer, one self-funded and the other funded through the Alaska Space Grant Program, a partnership between UAF and NASA. Wyatt Rehder is an Electrical Engineering major at UAF, and Vincent Mayer is a Mechanical Engineering major at the University of Idaho. Both are Alaskan residents. During their internship they studied orbital mechanics, modeled the Pashagsak switchback in SolidWorks, and developed concepts for transporting the Antares components to KLC. Both interns were very motivated and assisted the company greatly.

#### Medium Lift Initiative

AAC is working hard to secure commitments from new medium lift providers to use KLC as their West Coast launch facility. Medium lift represents a significant increase in the range of payloads that KLC can launch into orbit (from the current 2,500 pounds to about 12,000 pounds). Medium lift will also provide a more robust launch schedule. In the last fifteen years, there was an average of 2.9 medium lift launches per year from West Coast facilities. With the retirement of the Delta II, the primary US medium lift rocket, now is an opportune time to secure launch contracts from new entrants to the medium lift market.

One of the new medium lift rockets that AAC is interested in is the Orbital Sciences Corporation (Orbital) Antares Launch Vehicle (formally known as the Taurus II). This summer AAC performed a limited pathfinder to demonstrate that the 102 foot long Antares first stage can negotiate the road from the dock in Kodiak to KLC, and several AAC employees were invited by Orbital to participate in the transportation of a live Antares first stage on the East Coast. The Antares is expected to make its first flight in 2012 from Wallops Flight Facility. Orbital is currently studying AAC's proposed Launch Pad 3 and other West Coast options for medium lift.

AAC is also working with other aerospace prime contractors on engineering and business studies to bring their medium lift launch vehicles to Kodiak. In addition to liquid fueled systems, solid fueled designs based on the Space Shuttle's segmented Solid Rocket Motors are being considered. Both designs can use the existing infrastructure at KLC, such as the Payload Processing Facility, Range Safety and Telemetry System, Launch Control Center, and the fiber optic communications system. AAC will be able to support a combination of new launch vehicles and customers by leveraging existing facilities, equipment, and our talented workforce at KLC.

The chart at the right depicts the size of the Antares and a Solid Rocket Motor derived launch vehicle compared to KLC's existing launch capability. Note that the Minotaur 4 was used on both the STP-S26 and TacSat-4 launches.



# GROWTH

#### Leverage of Initial Alaska Investment (Cumulative)



#### Statement of Net Assets

June 30, 2011 (With Comparative Amounts for 2010)

		2011	2010
Assets			
Current assets:			
Cash and cash equivalents	\$	9,083,786	9,779,420
Accounts receivable		2,201,909	1,861,639
Unbilled receivables		397,536	1,328,681
Inventory		510,664	381,072
Total current assets		12,193,895	13,350,812
Capital assets net of accumulated depreciation and amortizat	ion:		
Office furniture and equipment		3,004,445	533,948
Vehicles and other equipment		21,380,869	23,683,329
Buildings and structures		29,241,208	28,144,507
Infrastructure		8,524,863	4,688,064
Construction in progress		3,343,884	12,041,291
Intangible - Software		789,650	1,001,896
Intangible - Right of Use		17,305,809	18,129,895
Total capital assets, net		83,590,728	88,222,930
Total assets	\$	95,784,623	101,573,742
Liabilities and Net Assets			
Liabilities:			
Current liabilities:			
Accounts payable		598,184	2,185,197
Accrued leave and compensation		834,996	540,179
Total current liabilities		1,433,180	2,725,376
Noncurrent liabilities - deferred revenue		3,676,588	5,731,271
Total liabilities		5,109,768	8,456,647
Net assets:			
Invested in capital assets		83,590,728	88,222,930
Unrestricted		7,084,127	4,894,165
Total net assets		90,674,855	93,117,095
Total liabilities and net assets	\$	95,784,623	101,573,742

#### Statement of Revenues, Expenses, and Changes in Net Assets Year Ended June 30, 2011(With Comparative Amounts for 2010)

		2011	2010
Operating revenues	\$	14,172,047	11,336,598
Operating expenses:			
Personnel services		6,216,905	5,518,223
Travel		377,584	281,822
Contractual services		4,693,657	4,594,975
Supplies		714,715	723,056
Equipment		149,640	198,926
Depreciation and amortization		6,757,410	6,003,661
Total operating expenses		18,909,911	17,320,663
Net operating loss		(4,737,864)	(5,984,065)
Nonoperating revenues:			
Interest income unrestricted		4,533	8,349
PERS relief from State of Alaska		213,174	138,140
Cooperative agreement		23,234	3,112
Total nonoperating revenues		240,941	149,601
Loss before capital contributions		(4,496,923)	(5,834,464)
State of Alaska capital appropriation		_	3,500,000
Capital contributions		2,054,683	3,951,608
Change in net assets		(2,442,240)	1,617,144
Net assets - beginning of the year		93,117,095	91,499,951
Net assets - end of the year	\$	90,674,855	93,117,095

#### Statement of Cash Flows

June 30, 2011 (With Comparative Amounts for 2010)

		2011	2010
Cash flows from operating activities:			
Receipts from contracts	\$	14,762,922	11,980,690
Payments to suppliers		(7,652,201)	(5,151,408)
Payments to employees		(5,708,914)	(5,380,948)
Net cash provided by operating activities		1,401,807	1,448,334
Cash flows from noncapital financing activities -			
cooperative agreement received	_	23,234	3,112
Cash flows from capital and related financing activities:			
Capital appropriation received		2,054,683	3,951,608
Capital contribution from the State of Alaska		-	3,500,000
Purchase of capital assets		(2,125,208)	(10,631,671)
Decrease in deferred revenue		(2,054,683)	(3,843,748)
Net cash provided (used) by capital and related			
financing activities	_	(2,125,208)	(7,023,811)
Cash flows from investing activities - interest received		4,533	8,349
Net increase (decrease) in cash and cash equivalents		(695,634)	(5,564,016)
Cash and cash equivalents at beginning of year	_	9,779,420	15,343,436
Cash and cash equivalents at end of year	\$	9,083,786	9,779,420
Reconciliation of operating loss to net cash			
provided (used) by operating activities:			
Operating loss		(4,737,864)	(5,984,065)
Adjustments to reconcile operating loss to net			
cash provided (used) by operating act <mark>ivitie</mark> s:			
Depreciation and amortization		6,757,410	6,003,661
Noncash expense - PERS relief		213,174	138,140
Increase in accounts receivables		(340,270)	79,330
Increase in unbilled receivables		931,145	564,762
Decrease (increase) in inventory		(129,592)	(440)
Increase in accounts payable		(1,587,013)	647,811
Decrease in accrued expenses		294,817	(865)
Net cash provided by operating activities	\$	1,401,807	1,448,334

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