



September 29, 2009

The Honorable Charles J. Colgan, Chair  
Senate Finance Committee  
General Assembly Building  
Richmond, VA 23218

The Honorable Lacey E. Putney, Chair  
House of Delegates Appropriations Committee  
General Assembly Building  
Richmond, Virginia 23218

Dear Senator Colgan and Delegate Putney:

The accompanying report responds to the following provision of the 2009 Appropriation Act:

*The Virginia Aviation Museum in Richmond, Virginia and the Virginia Air and Space Center in Hampton, Virginia shall jointly report to the Chairmen of the House Appropriations and Senate Finance Committees by October 1, 2009 on the possibility of the merger of the two entities in order to provide greater educational and cultural opportunities for the citizens of Virginia. The report shall include, but not be limited to, (1) the effectiveness and costs of maintaining a satellite facility, (2) the funding requirements of a merged facility, and (3) the disposition of the current assets of the facility to be merged including land, buildings, and exhibits under various merger scenarios.*

The enclosed report shows that the Science Museum of Virginia needs funding and time to obtain all needed information on financial, legal, and stakeholder ramifications related to the future of the Virginia Aviation Museum. We estimate that approximately \$250,000 would be needed to engage qualified professional contractors, perform a curatorial assessment, appraise the collection, quantify deferred maintenance on the collection and other assets, and project costs of the potential closing of the current Virginia Aviation Museum facility.

The Board of Trustees of the Science Museum of Virginia is engaged in a strategic planning process of unprecedented scope to chart the future course of the agency and its component museums, which include the Virginia Aviation Museum. We will continue to work to maximize the value of our museum assets to fulfill our statewide mission and will do our utmost to ensure the future of the Virginia Aviation Museum will benefit all Virginians.

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RICHARD C. CONTI, DIRECTOR/CEO

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We thank you for your consideration of this matter and look forward to providing additional information as needed.

Respectfully,

James H. Starkey, III  
Chairman  
Board of Trustees

Enclosures

cc: Dr. Thomas R. Morris, Virginia Secretary of Education  
Mr. Richard C. Conti, Director / CEO, Science Museum of Virginia  
Mr. Todd C. Bridgford, Executive Director/CEO, Virginia Air & Space Center

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## I. Executive Summary

This report has been prepared in response to the following 2009 Appropriation Act provision:

*The Virginia Aviation Museum in Richmond, Virginia and the Virginia Air and Space Center in Hampton, Virginia shall jointly report to the Chairmen of the House Appropriations and Senate Finance Committees by October 1, 2009 on the possibility of the merger of the two entities in order to provide greater educational and cultural opportunities for the citizens of Virginia. The report shall include, but not be limited to, (1) the effectiveness and costs of maintaining a satellite facility, (2) the funding requirements of a merged facility, and (3) the disposition of the current assets of the facility to be merged including land, buildings, and exhibits under various merger scenarios.<sup>1</sup>*

The Virginia Aviation Museum (VAM) operates as a division of the Science Museum of Virginia. The Science Museum is a state-agency museum reporting to the Secretary of Education and governed by a Board of Trustees, appointed by the Governor. VAM is located at the Richmond International Airport on a five-acre parcel of property leased to it by the Capital Region Airport Commission. VAM houses 38 historic aircraft, more than 9,000 other items in its collection, the Virginia Aeronautical Historical Society, and the Virginia Aviation Hall of Fame.

Information concerning the actual costs of maintaining the Virginia Aviation Museum is presented herein. Preliminary estimates concerning the disposition of some collection assets are also provided, but resources have not been available to obtain professional appraisals and estimates needed for strategic decision making.

### *Effectiveness and costs of maintaining a satellite facility*

Personnel expenses comprise the largest portion of the VAM budget. VAM has been very successful in securing volunteer support of its operations over the years. Over 5,000 volunteer hours helped support operations during FY09, which equates to 2.5 full-time-equivalent employees and over \$100,000 in saved personnel costs. Due to budget cuts in FY08 and FY09, the Science Museum of Virginia (SMV) plans to utilize a greater portion of its available endowment funding to add a part-time educator and curator. Despite the

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<sup>1</sup> 2009 Virginia Acts of Assembly, Chapter 781, § 1-69

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weakened economy, 2009 attendance stood relatively steady at 22,589, which included 4,485 participants in Virginia SOL-based educational programs.

*Funding requirements of a merged facility*

As stated above, additional time and resources are needed to assess the funding requirements of a merged facility. Merger considerations include (but are not limited to):

- In any relocation scenario, the current lease stipulates that the building that houses VAM would revert to the Capital Region Airport Commission.
- The current VAM collection consists of approximately 9,000 items, which includes 38 aircraft (listed in Appendix C). A professional curatorial assessment is needed to sufficiently catalog all items, as well as determine the value and prepare the collection for any move. Some of the collection's more notable aircraft are on loan to VAM; therefore, in many instances a merger scenario may necessitate return to the original owner. Also, there are legal questions concerning the covenants on the Shannon Collection (the original core collection of twelve aircraft that was conveyed by the Virginia Aeronautical Historical Society to SMV in 1990), which require research and consultation with the Office of the Attorney General.
- The "Agreement" dated 23 June 1990 by and between the Virginia Aeronautical Historical Society (VAHS) and SMV spells out the terms of the transfer of the building, furnishings, and collection of artifacts between these two organizations, as well as future obligations. Under the terms of the Agreement:
  - VAHS assigned its lease with the Capital Region Airport Commission to SMV.
  - VAHS granted title and possession of certain tangible personal property, artifacts, memorabilia, and other museum articles to SMV.
  - VAHS transferred title and possession of its aircraft collection to SMV.
  - VAHS created and donated a \$100,000 endowment to support VAM.
  - VAHS retained a proprietary right in the name "Virginia Aviation Museum" and granted SMV a license to use that name.
  - VAHS reserved a non-assignable lease to use either its current offices and storage space in the current building, or to have SMV provide office and storage

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space of “equivalent size and amenities” as well as reimbursement to VAHS for any direct or indirect costs attributable to any VAM relocation.

- VAHS reserved the right to hold its annual meeting and its annual Virginia Aviation Hall of Fame event at VAM, at cost.
- SMV granted VAHS members free admission to VAM.
- SMV agreed to seek VAHS counsel regarding the maintenance, disposal, and replacement of any VAHS-donated aircraft.
- The Agreement specified, “To provide a tangible link with the donor [VAHS],” the SMV Board of Trustees agreed to reserve two seats on the Board of Directors of the Science Museum of Virginia Foundation, Inc.

*Disposition of current assets*

- The current building reverts to Capital Region Airport Commission if VAM relocates.
- The Science Museum of Virginia is accredited by the American Association of Museums. Disposition of any collection assets must follow American Association of Museum policy, SMV collections policies, and state property disposition rules. The total VAM cost to disassemble, crate, transport, and reassemble aircraft is unknown. Verbal, non-binding estimates for moving some of the aircraft range from \$30,000 for the Douglas A-4C to \$100,000 for the Lockheed SR-71A. SMV would have to solicit formal bids from qualified contractors to reasonably determine costs, depending on the ultimate disposition of each aircraft.
- To dispose of about 9,000 non-aircraft items in its collection, VAM would need additional financial resources to inventory and catalog these items, in order to have adequate information for the appraisal and proper disposition of the collection.

The Science Museum of Virginia is completing a comprehensive strategic planning process involving more than eighty organizations and key stakeholders. One of the institutional outcomes of the new plan is for SMV to align, leverage, and use its satellite facilities to accomplish its statewide mission. A strategic goal of integrating satellite facilities into the new conceptual framework, or spinning them off, is expected to be adopted by the SMV Board of Trustees. However, there are important questions that remain unanswered and that will require additional research and study before they can be resolved.

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The Trustees of the Science Museum believe that additional time and funding are needed to complete a detailed examination of whether the Virginia Aviation Museum fits into the new conceptual framework and can play an enhanced role in furthering the science education mission of the SMV, or should be realigned with the Virginia Air & Space Center, another entity, or a combination of partner organizations.

## **II. The Virginia Aviation Museum Today**

The Virginia Aviation Museum is the sole aeronautical educational institution located in the Richmond Metropolitan Statistical Area (estimated population 1,225,626 in 2008<sup>2</sup>), which consists of four independent cities (Richmond, Petersburg, Hopewell, and Colonial Heights) and sixteen counties (Amelia, Caroline, Charles City, Chesterfield, Cumberland, Dinwiddie, Goochland, Hanover, Henrico, King and Queen, King William, Louisa, New Kent, Powhatan, Prince George, and Sussex). VAM's role in technology education complements a growing regional engineering and technology sector, anchored by the rapidly expanding VCU School of Engineering. The Department of Aviation has identified a need for a significant number of new employees to fill jobs in the aviation sector in Virginia.

The VAM facility consists of a building of approximately 30,000 square feet, situated on a five-acre tract of land at the Richmond International Airport in Henrico County, leased for one dollar (\$1.00) per year from the Capital Region Airport Commission.

The Virginia Aviation Museum features 38 historic and vintage aircraft, including the spectacular SR-71 Blackbird; reproductions of the Wright brothers' kite, gliders, and famous 1903 Flyer; early flight memorabilia; a World War II diorama that includes the Tuskegee Airmen and Women's Airforce Service Pilots; and the Virginia Aviation Hall of Fame. In all, its collection includes some 9,000 artifacts.

Knowledgeable and friendly volunteers share the history of the planes including the luxurious 1936 Vultee V1-A Special once owned by William Randolph Hearst. Visitors can learn about Virginia's legendary Admiral Richard E. Byrd as they examine **Stars and Stripes**, the first American research plane to fly over Antarctica. Visitors also can examine a rare World War I SPAD VII in mint condition, as well as the plane Charles Lindbergh really wanted to fly across the Atlantic, a Navy A-4C Skyhawk, and a Virginia Army National Guard UH-1V Huey helicopter.

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<sup>2</sup> Ownership of the Shannon collection was decreed by the Circuit Court of Spotsylvania County.

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Museum staff members and volunteer docents teach Virginians how jet and piston engines generate power and the forces of flight. Students and visitors can operate two wind tunnels, “pilot” six flight simulators (including a full-motion F-35 flight simulator), and take the controls of a real Piper J-3 Cub. They also enjoy aviation films and lectures in the Benn Theater and view aviation art from the USAF Art Association. The Kids’ Ready Room provides an area for our “younger pilots” to explore the exciting world of aviation.

### **III. Effectiveness and Costs of Maintaining VAM as a Satellite Facility**

VAM has been successful in running a very popular program on a limited budget. Due to state budget cuts in FY08 and FY09, SMV and VAM plan to use a greater portion of their endowment funding to bridge the gap between earned revenues and expenses. During this fiscal year, VAM plans to add a part-time curator with endowment funds.

VAM also has been quite successful in securing volunteer support of its operations over the years. Over 5,000 volunteer hours helped support operations during Fiscal Year 2009, saving as much as \$100,000 in wages. Despite the economy’s unprecedented downturn, VAM’s 2009 total attendance stayed relatively stable at 22,599, but in-depth educational portion of its Virginia SOL-based programming rose to 4,485.



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<b>VIRGINIA AVIATION MUSEUM</b>			
<b>Attendance, Volunteer Hours Contributed, and Financial Activity for Fiscal Years 2008-2010</b>			
<b>VAM ATTENDANCE</b>	<b>FY 2010<sup>3</sup></b>	<b>FY 2009<sup>4</sup></b>	<b>FY 2008</b>
Museum Visitors	15,500	15,326	19,169
Educational Program Students	4,000	4,485	3,540
Special Event Participants	2,500	2,788	1,244
<b>Total Attendance</b>	<b>22,000</b>	<b>22,599</b>	<b>23,953</b>
<b>VOLUNTEER HOURS CONTRIBUTED</b>	<b>FY 2010</b>	<b>FY 2009</b>	<b>FY 2008</b>
Total Volunteer Hours	5,500	5,647	6,127
<b>FINANCIAL ACTIVITY<sup>5</sup></b>	<b>FY 2010</b>	<b>FY 2009</b>	<b>FY 2008</b>
<b>Revenues</b>			
Visitor Admission Fees	\$63,500	\$62,888	\$93,793
Educational Program Fees	8,000	18,653	12,011
Special Event Fees	8,000	9,209	12,747
Membership Fees	3,000	3,069	2,116
Foundation Support	60,000	17,079	37
Gift Shop Equity Transfer <sup>6</sup>	15,000	15,000	
<b>Total Revenues</b>	<b>\$157,500</b>	<b>\$125,897</b>	<b>\$120,705</b>
<b>Expenditures</b>			
Employee Compensation	\$183,852	\$232,503	\$239,195
Contractual Services	6,113	6,922	14,452
Supplies and Materials	16,399	8,713	8,635
Equipment Rentals and Utilities	24,746	17,702	12,878
Equipment Purchases	0	5,310	4,989
<b>Total Expenditures</b>	<b>231,110</b>	<b>\$271,151</b>	<b>\$280,153</b>
<b>Agency Contribution</b>	<b>-\$73,610</b>	<b>-\$ 145,253</b>	<b>-\$ 159,448</b>

<sup>3</sup> Estimated attendance and volunteer hours, budgeted financial activity.

<sup>4</sup> Effective January 2009, VAM no longer opens on Mondays, reducing attendance and volunteer hours.

<sup>5</sup> Financial totals reflect small variances due to rounding.

<sup>6</sup> VAM gift shop revenues, expenditures, net income, and retained earnings are recorded in separate books of account and do not appear in VAM income statements. The \$15,000 "equity transfer" was a cash payment to VAM from VAM gift shop retained earnings.

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<b>VIRGINIA AVIATION MUSEUM</b>			
<b>Attendance, Volunteer Hours Contributed, and Financial Activity for Fiscal Years 2008-2010</b>			
<b>VIRGINIA AVIATION MUSEUM</b>			
<b>Donated Operating Funds Available for Support</b>			
	<u><b>FY 2010</b></u>	<u><b>FY 2009</b></u>	<u><b>FY 2008</b></u>
November Endowment Operating	\$15,944	\$12,252	\$6,745
Virginia Aeronautical Historical Society Endowment Operating	21,557	17,038	8,519
VAM General	27,492	22,940	14,254
VAM General Education	10,323	10,431	10,380
Funding Available to Support Current Fiscal Year Operations	<u>\$75,316</u>	<u>\$62,661</u>	<u>\$39,898</u>

*Analysis of Attendance for the Three Year Period from FY07 through FY09*

Attendance has been stable at VAM for several years. The educational program component of enrollment has increased significantly (46% in FY 2008 and 27% in FY 2009).

## Appendix A. Educational Programs

Educational programs presented at VAM or in students' own classrooms include the following.

### The Wright Path

Students discover how the Wright brothers built the world's first successful airplane — the 1903 Wright Flyer. First, they explore the scientific processes the Wrights used to create and improve their 1900, 1901 and 1902 gliders. Exact, full-scale reproductions of these gliders and the 1903 Wright Flyer appear on overhead display. Students next tour the fascinating collection of vintage aircraft, flight memorabilia, exhibits and artifacts that showcase Virginia aviators. Finally, they interact with **Forces of Flight** exhibits and operate a real wind tunnel, learning the physics behind powered flight. **Virginia**

**Standards of Learning:** Science – 4.1, 4.2, PH.3; History – WHII.8.

### The Wright Math

Students discover how the Wright brothers used mathematics to design and built the world's first successful airplane — the 1903 Wright Flyer. First, they investigate the math and engineering processes the Wrights used to create and improve their 1900, 1901 and 1902 gliders and that culminated in building the first successful heavier-than-air aircraft. Exact, full-scale reproductions of these gliders and the 1903 Wright Flyer “fly” on display at the museum. Next, they tour VAM’s fascinating collection of vintage aircraft, flight memorabilia, exhibits and artifacts showcasing Virginia aviators. Finally, they interact with Forces of Flight exhibits and operate a real wind tunnel. The Wright Math is recommended for advanced middle and high school students and adults.

**Virginia Standards of Learning:** Science – 4.1, 4.2, 6.6, PS.1, PS.10, PH.3, PH.5, PH.7; History – USII.5; WHII.8; VUS.8; Math – 5.3, 5.11, 5.13, 5.14, 6.8, 6.11, 6.13, 6.14, 7.22, 8.4, 8.6, 8.10, 8.15, 8.17, A.1, A.3, G.7, T.1.

### How Fast is Mach 1?

Students explore the development of high-speed flight. A 45-minute PowerPoint® program analyzes the four crucial aspects of flight at the speed of sound and beyond, including aerodynamics and power concepts. Next, students design a Mach 1 airplane and learn about the Bell X-1, the first airplane to break the sound barrier. Their high-speed experience concludes with a tour of VAM’s Mach 3+ SR-71 Blackbird, the fastest jet ever built. **Virginia Standards of Learning:** Science – 5.4, PS.2, PS.6; History and Social Science – USII.5, USII.7.

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### **Paper Airplane Workshop**

There's more than one way to design a paper airplane! Youngsters learn fundamental aviation history and aerodynamic concepts. Students first fold and fly a basic paper airplane, and then try their hands at a more complicated aerodynamic design. **Virginia Standards of Learning:** 4.2, PS.10.

### **Balloons and the Civil War in Virginia**

Students time-travel to 1862 Virginia to experience an emerging technology: Aerial reconnaissance. During the Civil War, manned balloons were used for the first time to observe enemy positions. They get an aeronaut's-eye view in this 45-minute PowerPoint® presentation featuring drawings and photographs from the nearby Peninsula Campaign and the Seven Days' Battle, the Union Army's attempt to capture Richmond, Virginia. This course is a great addition to the study of Virginia history and the technology of the Civil War. **Virginia Standards of Learning:** VS.7, USI.9, VUS.7.

### **Introduction to the Wonders of Aviation**

VAM features the spectacular SR-71 Blackbird; 38 historic, vintage aircraft; reproductions of the Wright brothers' kite, gliders, and famous 1903 Flyer; early flight memorabilia; a World War II diorama that includes the Tuskegee Airmen and Women's Airforce Service Pilots; and the Virginia Aviation Hall of Fame. Knowledgeable and friendly volunteers explain aircraft history, including that of the luxurious 1936 Vultee V1-A Special once owned by publishing magnate William Randolph Hearst. Students learn about Virginia's legendary Admiral Richard E. Byrd as they examine **Stars and Stripes**, the first American research plane to fly over Antarctica. They'll see a rare World War I SPAD VII in mint condition, as well as the plane Charles Lindbergh *really* wanted to fly across the Atlantic!

## **Appendix B. Background and History**

### **History of the Virginia Aeronautical Historical Society**

On November 30, 1977 a group of Virginia citizens founded the Virginia Aeronautical Historical Society (the Society). According to the Society's articles of incorporation:

*The purposes of the organization shall be to promote public interest in the study, research, interpretation, preservation, and dissemination of Virginia's aviation and aeronautical heritage, and to preserve, acquire, and display those items pertaining to Virginia's aviation and aeronautical heritage.*

Morton W. Lester, a Martinsville aviator, conceived the idea for the Society and found people who shared his enthusiasm this undertaking. The Society's first President was US Air Force Brigadier General (Ret.) Benjamin S. Kalsey, the first pilot to fly the P-51 Mustang, and its original board represented leaders from the National Air and Space Museum, Falwell Aviation, Inc., the State Corporation Commission, the NASA Langley Research Center, the Virginia Office of Emergency Services, Eastern Airlines, the Shannon Air Museum, the Circuit Court of Richmond, and a number of Virginia companies. Until the Society could find its own home, the collection would be displayed at the Shannon Air Museum in Fredericksburg, owned and founded by Sidney L. Shannon, Jr.

### **Sidney L. Shannon, Jr. and His Collection**

World War II veteran Sidney L. Shannon, Jr. was born in Fredericksburg, Virginia, in 1922. He grew up among renowned aviators and quite naturally inherited his father's love for planes and flying.

In October 1950, he opened the Shannon Airport south of Fredericksburg, Virginia. In addition to founding this airport, he had interests in the Sheraton-Fredericksburg Motor Inn, real estate development, the Lee Hill Industrial Park, and other enterprises. In 1976, he opened the Shannon Air Museum and dedicated it to his father, senior vice president and one of the organizers and chief stockholders of Eastern Airlines.

Mr. Shannon's collection of vintage aircraft forms the nucleus of the VAM collection today. At the time of VAM's dedication, all of the Shannon Collection aircraft (listed on the next page) were flight-worthy.

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1917 SPAD VII  
1918 Standard E-1  
1927 Pitcairn PA-5 Mailwing  
1927 Travel Air 2000  
1928 Bellanca CH-400 Skyrocket  
1929 Curtiss Robin J-4D  
1932 Aeronca C-2N  
1932 Taylor E-2 Cub  
1936 Vultee V1-A Special (custom built for publisher William Randolph Hearst)  
1938 Stinson SR-10G Reliant  
1941 Bucker 133-C Jungmeister  
1943 Piper J-3 Cub

### **History of the Virginia Aviation Museum**

Mr. Shannon made no provisions for his aircraft collection in his will. After lengthy negotiations, the trustees of Shannon's estate agreed to donate the collection to the Society if VAHS would agree to construct a new museum in central Virginia, to be ready by November 1987. The Society raised private funds, constructing the facility and moving the collection to Richmond in December 1986, first admitting visitors on May 30, 1987.<sup>7</sup> Virginia Governor Gerald L. Baliles was among the many who participated in the official opening on Labor Day 1987.

The Society founded the Virginia Aviation Museum (VAM) in 1987 and donated its assets to the Commonwealth of Virginia effective July 1990. At that time, VAM became a division of the Science Museum of Virginia. The core of the VAM collection consisted of twelve historically significant aircraft donated to the Society by the estate of Sidney L. Shannon, Jr. of Fredericksburg, as well as two aircraft loaned by the Smithsonian National Air and Space Museum.

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<sup>7</sup> The Virginia Aviator, Volume 1, Number 1 (June 1989), page 15.

## Appendix C. Partial Inventory of the Virginia Aviation Museum Collection

Services of professional appraisers would be required to obtain current values of VAM assets. Funding is not currently available for those appraisal services.

Values for items on loan from the United States service museums and the National Air and Space Museum (of the Smithsonian Institution) were set in the original loan agreements by the owners and may not be current. Owner valuations are the amounts for which VAM would be responsible if the item was destroyed by fire or other calamity, or if the item otherwise could not be returned to the owner.

Based on the following informal and preliminary estimates:

Value of capital assets..... unknown  
 Cost to return non-VAM assets to owners if VAM closed<sup>i</sup> ..... unknown  
 Deferred maintenance on capital assets ..... unknown

Dollar figures in this list should be considered incomplete and conservative minimum amounts.

CATEGORY and Item	Owner	Minimum Estimated Values	Cost to Return to Owner	Deferred Maintenance
<b>FLIGHT SIMULATORS</b>				
XJ-5 Motion Flight Simulator	VAM	\$150,000		unknown
VAM Flight Simulator – Newer SMV-built	VAM	\$5,000		unknown
VAM Flight Simulator – Original SMV-built	VAM	\$5,000		unknown
VAM Flight Simulator – Original SMV-built	VAM	\$5,000		unknown
Three-Screen Flight Simulator	VAM	\$2,300		unknown
Large Screen Flight Simulator	VAM	\$5,000		unknown
<b>PA/TV/PROJECTORS</b>				
Benn Theater – LCD Projector	VAM	\$1,500		unknown
Benn Theater – Combination VHS/DVD Player	VAM	unknown		unknown
Benn Theater – PA	VAM	unknown		unknown
Main PA System	VAM	unknown		unknown
Main CD Player	VAM	unknown		unknown
Wireless Mics	VAM	unknown		unknown
Observation Deck – Television Set	VAM	unknown		unknown
12 X 12 Screen	VAM	unknown		unknown
Big Screen TV	VAM	unknown		unknown

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CATEGORY and Item	Owner	Minimum Estimated Values	Cost to Return to Owner	Deferred Maintenance
<b>FORCES OF FLIGHT<sup>ii</sup></b>				
Thrust	VAM	\$5,000		unknown
Lift	VAM	\$5,000		unknown
Drag	VAM	\$5,000		unknown
Control	VAM	\$5,000		unknown
Bernoulli Effects – Bochi Balls	VAM	\$5,000		unknown
Bernoulli Effects – Ping Pong Ball	VAM	\$5,000		unknown
Bernoulli Effects – Funnel	VAM	\$5,000		unknown
Spin Tunnel	VAM	\$5,000		unknown
Wind Trainer	VAM	\$10,000		unknown
Wind Tunnel	VAM	\$5,000		unknown
<b>KIOSKS</b>				
Wind Tunnel – Kiosk	VAM	unknown		unknown
NASA Kiosk – Mars	NASA	unknown	unknown	unknown
NASA Kiosk – Langley	NASA	unknown	unknown	unknown
NASA Kids Story Book	NASA	unknown	unknown	unknown
Discover Aviation	VAM	\$5,000		unknown
<b>AREAS and DISPLAYS</b>				
WW II Diorama	VAM	\$85,000		unknown
Renovate WWII Exhibit Area	VAM	\$27,216		unknown
NASA Display Panels (5)	NASA	unknown	unknown	unknown
Martha West	VAM	unknown		unknown
US Air Force Art Collection	US Air Force	unknown	unknown	unknown
Wings Collection	VAM	unknown		unknown
J-3 Cub Exhibit – Hands-On (No. 77552)	VAM	\$25,000		unknown
J-3 Cub Exhibit – Kiosk and Motor	VAM	\$10,000		unknown
Kids Ready Room	VAM	\$10,000		unknown
Pedal Plane – Yellow	EAA	\$200		unknown
Pedal Plane – White/Red	EAA	\$200		unknown
Propeller Display	VAM	\$6,000		unknown
Wright Brothers Wind Tunnel	VAM	\$20,000		unknown
Benn Theater Art Collection	Private Individual	unknown	unknown	unknown
<b>PERIOD AUTOMOBILES</b>				
1913 Ford Model T <sup>iii</sup>	VAM	\$30,000		unknown
1932 De Soto 4-Door Sedan	VAM	\$10,000		unknown
<b>ENGINES</b>				
General Electric I-16/J-31	US Marines	unknown	unknown	unknown
German Jumo 004B	VAM	\$5,000		unknown



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CATEGORY and Item	Owner	Minimum Estimated Values	Cost to Return to Owner	Deferred Maintenance
Pratt & Whitney R-4360	US Marines	\$5,000	unknown	unknown
R-670 Trainer	VAM	\$2,500		unknown
Curtiss OX-5	VAM	\$5,000		unknown
Drone 2-Cylinder	VAM	\$500		unknown
Le Rhone Rotary	VAM	\$10,000		unknown
Packard V-12	VAM	\$1,000		unknown
Wright R-540	VAM	\$3,000		unknown
Aeronca Model E-113	VAM	\$1,000		unknown
Wright R-2600	VAM	\$5,000		unknown
Pratt & Whitney J-58 and Trailer	US Air Force	\$100,000	unknown	unknown
O-360 Continental <sup>iv</sup>	US Marines	unknown	unknown	unknown
<b>DISPLAY CASES</b>				
Model Cases (5) – Jack Miller	VAM	unknown		unknown
Model Case – IPMS	VAM	unknown		unknown
Four Captains Memorial	VAM	unknown		unknown
WWI	VAM	unknown		unknown
Blackbird	VAM	unknown		unknown
Sid Shannon	VAM	unknown		unknown
Byrd Field	VAM	unknown		unknown
Dick Merrill	VAM	unknown		unknown
Admiral Richard E. Byrd Antarctic Gear	VAM	unknown		unknown
WACO	VAM	unknown		unknown
C-47 case	VAM	unknown		unknown
George Preddy	VAM	unknown		unknown
VAM	VAM	unknown		unknown
WWII – General	VAM	unknown		unknown
WWII Gliders	VAM	unknown		unknown
Vultee	VAM	unknown		unknown
A-4C/Paul Galanti	VAM	unknown		unknown
<b>MISCELLANEOUS</b>				
Time Capsule	VDOA	unknown		
Astro Intera Navigation System – SR-71	US Air Force	unknown	unknown	unknown
Drouge Chute – SR-71	US Air Force	unknown	unknown	unknown
Crew Steps – SR-71	US Air Force	unknown	unknown	unknown
Start Cart – SR-71	US Air Force	unknown	unknown	unknown
F-16 Cockpit	VAM	unknown		unknown
F-4 Spin Model	NASA	unknown	unknown	unknown
NASA Exhibits – 4	NASA	unknown	unknown	unknown
NASA Kiosks – 2	NASA	unknown	unknown	unknown
Aviation Library – 3,500 books	VAM	unknown		unknown
Miscellaneous Artifacts (hundreds of items)	VAM	unknown		unknown
Kids Ready Room (play area equipment)	VAM	unknown		unknown
Gift Shop Fixtures and Equipment	VAM	unknown		unknown

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CATEGORY and Item	Owner	Minimum Estimated Values	Cost to Return to Owner	Deferred Maintenance
Admissions and Gift Shop Counters	VAM	unknown		unknown
Tower (route lights and beacon)	VAM	unknown		unknown
<b>AIRCRAFT</b>				
1899 Kite	Rick Young	\$1,000	unknown	
1900 Glider	Rick Young	\$35,000	unknown	Unknown
1901 Glider	Rick Young	\$45,000	unknown	Unknown
1902 Glider	Rick Young	\$45,000	unknown	Unknown
1903 Flyer	Rick Young	\$500,000	unknown	Unknown
1917 SPAD VII	VAM (SS) <sup>v</sup>	\$1,500,000	unknown	Unknown
1918 Curtiss JN-4D Jenny	Ken Hyde	\$750,000	unknown	Unknown
1918 Standard E-1	VAM (SS)	\$750,000	unknown	Unknown
1927 Pitcairn PA-5 Mailwing	VAM (SS)	\$250,000	unknown	Unknown
1927 Travel Air 2000	VAM (SS)	\$250,000	unknown	Unknown
1927 Fairchild FC-2W2	Smithsonian	\$500,000	unknown	Unknown
1928 Heath Super Parasol	VAM	\$75,000		Unknown
1928 Bellanca CH-400 Skyrocket	VAM (SS)	\$300,000	unknown	Unknown
1928 Pietenpol Air Camper	VAM	\$25,000		Unknown
1929 Brunner-Winkle Bird, BK	Dolph Overton	\$300,000	unknown	Unknown
1929 Curtiss Robin J-4D	VAM (SS)	\$250,000	unknown	Unknown
1930 Fleet Model 1	VAM	\$250,000		Unknown
1932 Aeronca C-2N	VAM (SS)	\$50,000	unknown	Unknown
1932 Taylor E-2 Cub	VAM (SS)	\$35,000	unknown	Unknown
1935 Aeronca C-3	VAM	\$50,000		Unknown
1935 WACO Model YOC	VAHS	\$225,000	unknown	Unknown
1936 Curtiss Wright A-14D Speedwing	Watkins	\$400,000	unknown	Unknown
1936 Vultee V1-A Special <sup>vi</sup>	VAM (SS)	\$1-\$2 million	unknown	Unknown
1937 Fairchild 24 Model G	VAM	\$225,000		Unknown
1938 Stinson SR-10G Reliant	VAM (SS)	\$275,000	unknown	Unknown
1941 Bucker 133-C Jungmeister	VAM (SS)	\$200,000	unknown	Unknown
1943 Piper J-3 Cub	VAM (SS)	\$30,000	unknown	Unknown
1946 Ercoupe 415-D	VAM	\$18,000		Unknown
1966 Flaggler Scooter	VAM	\$15,000		Unknown
1966 Lockheed SR-71A	US Air Force	\$300,000	unknown	Unknown
1968 Bell UH-1V Huey	US Army	\$100,000	unknown	Unknown
1970 Vought A-7D Corsair II	US Air Force	\$100,000	unknown	Unknown
1988 Quickie 200 Tri-Gear	VAM	\$20,000		Unknown
Eipper Quicksilver MX	VAM	\$10,000		Unknown
Cirrus 2 Glider	VAM	\$5,000		Unknown
American Aerolight Eagle	VAM	\$10,000		Unknown
Douglas A-4C Skyhawk	US Navy	\$100,000	unknown	Unknown
1992 F-14D Tomcat	US Navy	\$100,000	unknown	Unknown

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CATEGORY and Item	Owner	Minimum Estimated Values	Cost to Return to Owner	Deferred Maintenance
<b>VAM FACILITY</b>				
VAM Building and Improvements (historical cost)	VAM	\$845,170		Unknown

**Assets and Collection Artifacts Other Than Aircraft**

VAM’s Director estimates the total VAM collection at about 9,000 items, of which thousands have not yet been cataloged in accordance with acceptable museum standards, due to funding constraints. Assets and collections artifacts include (but are not limited to):

**Major Educational Interactive Exhibits** include six electronic flight simulators (including a state-of-the-art XJ-5 full-motion simulator), two audiovisual systems (one installed in VAM’s J. D. Benn Theater), the ten-module **Forces of Flight** hands-on interactive exhibit, a Piper J-3 Cub “get inside and fly” exhibit, and four instructional kiosks.

**Areas and Displays** include a recently refurbished WW II Diorama Exhibit Area, five NASA Display Panels, the Martha West exhibit (honoring a Richmond aviator after whom the VAM building is named), the U. S. Air Force and Benn Theater art collections, the Wings Collection, a Kids Ready Room, pedal planes, a vintage propeller display, the plastic and balsa-tissue model collections, and a Wright Brothers reproduction wind tunnel.

**Period Automobiles** that help visitors understand the historic contexts of nearby aircraft are a fully restored convertible 1913 Ford Model T touring car and a 1932 De Soto four-door sedan.

**Aircraft Engines** on display are a General Electric I-16/J-31, a German Jumo 004B, a Pratt & Whitney R-4360, a R-670 Trainer, a Curtiss OX-5, a Drone 2-cylinder, a Le Rhone Rotary, a Packard V-12, a Wright R-540, an Aeronca Model E-113, a Wright R-2600, a Pratt & Whitney J-58, and a O-360 Continental.

**Other Items** include the “Four Captains Memorial” (commemorating the September 11, 2001 attacks), Admiral Richard E. Byrd’s Antarctic gear, a 50-year time capsule, six NASA exhibits and kiosks, a 3,500-volume aviation library, and hundreds of miscellaneous artifacts yet to be cataloged.

## **Appendix D. Stakeholders**

### **SMV Board of Trustees**

The Code of Virginia<sup>8</sup> details certain powers of the Trustees, and responsibilities that VAM directly helps the Trustees to fulfill.

- To educate citizens of all ages in the concepts and principles of science and how these concepts and principles form the foundation upon which rests our technological society and its economy.
- To motivate and stimulate young people to seek careers in science.
- To encourage an understanding of the history of scientific endeavor.
- To contain six divisions that encompass six specific major aspects of science, one of which is Industry and Technology.
- To select sites for SMV and to provide for the erection, care, and preservation of all property belonging to SMV.
- To employ planning consultants and architects in relationship to establishment of SMV and any expansions thereof.
- To acquire by purchase, gift, loan, or otherwise the land necessary for establishment an expansion of SMV, its exhibits, and displays.

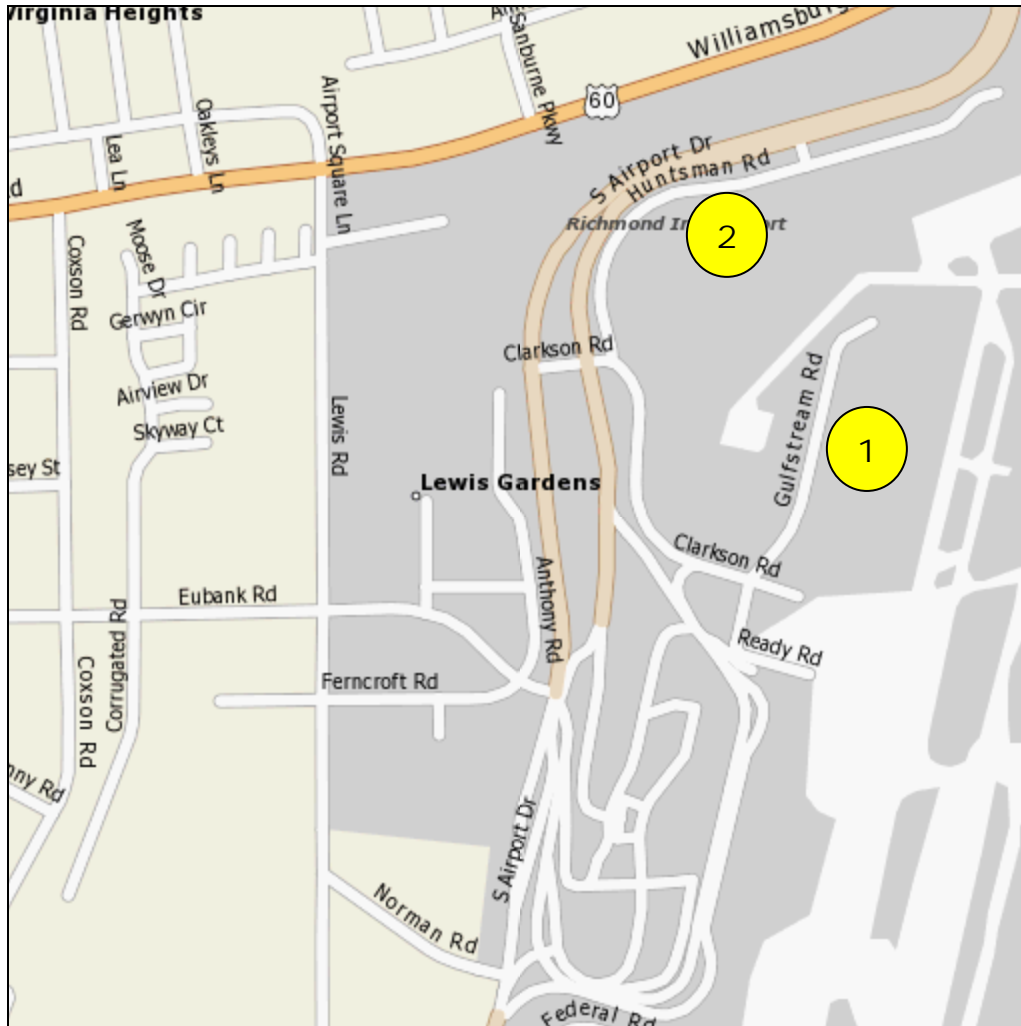
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<sup>8</sup> § Code of Virginia 23-239 *et seq.*

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**The Virginia Department of Aviation**

The Virginia Department of Aviation (location 1 on the following map) is a neighbor to VAM (location 2) on the grounds of Richmond International Airport.



The Virginia Department of Aviation (VDOA) mission<sup>9</sup> is to:

- Cultivate an advanced aviation system that is safe, secure and provides for economic development;
- Promote aviation awareness and education; and
- Provide flight services for the Commonwealth’s leadership and for State agencies.

<sup>9</sup> VDOA Internet site, “Virginia Aviation Department History and Mission”

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The VDOA mission component to “promote aviation awareness and education” clearly complements VAM’s own educational mission. VDOA education programs include:

**The Virginia Aviation Ambassadors Program.** This program is designed to encourage pilots to fly to all of the airports in Virginia as well as visit aviation museums and attend safety seminars. The Virginia Aviation Ambassadors Program provides Bronze, Silver and Gold level recognition for pilots and passengers who visit (fly or drive) our airports and aviation museums, participate in one of our DOAV/FAA Safety programs and attend the Virginia Regional Festival of Flight.

**Aviation Education.** Aviation education and aviation awareness programs go on throughout the Commonwealth of Virginia for the benefit of citizens of all ages. They may be structured, full-time activities, such as high school and post secondary aviation programs, or one-time events such as airport open houses or Young Eagles days. Regardless of their format, these programs inform participants about the importance of aviation to both our state and rest of the country, open young minds to a much wider range of future career possibilities, and ultimately, invite young and old to experience the excitement and fun that aviation has always represented to our nation. To make resources available to those who need them, the Virginia Department of Aviation operates an Aviation Education Resource Center which provides aviation education and career materials and videotapes (on loan) to Virginia educators; as well as clubs, organizations, and other entities.

**Programs, Scholarships, Workshops, and Contests for Teachers and Students.** VDOA sponsors or participates in these programs.

- Aviation Teachers Grant Program for Virginia’s K-12 teachers.
- Annual International Aviation Art Contests
- The Virginia Airport Operators Council / John R. Lillard Aviation Scholarship Program
- The Willard G. Plentl Aviation Scholarship Program
- The Virginia Aviation Foundation, Inc. Scholarship Program
- The EAA Young Eagles Program
- Participation in the Annual Passport to the Future Teacher Workshop, sponsored by Lockheed Martin and hosted by the American Institute of Aeronautics and Astronautics

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- Leadership Conference on Aviation and Space Education
- Team America Rocketry Challenge
- The A. Scott Crossfield Aerospace Education Teacher of the Year Award, hosted by the National Aviation Hall of Fame.

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<sup>i</sup> If VAM is closed and its assets liquidated, the Science Museum of Virginia must pay costs to return loaned aircraft and other loaned assets to their respective owners.

<sup>ii</sup> All components of the ***Forces of Flight*** exhibit are somewhat old and should be refurbished or replaced.

<sup>iii</sup> This automobile originally owned by Henry Gonner, long-time President of the Central Richmond Association, and driven by Mr. Gonner in civic parades in Richmond from 1957 through 2000. Donated to VAM by J. Harwood Cochrane, founder and former CEO of Richmond-based Overnite Transportation (now part of UPS).

<sup>iv</sup> This item is packed in a storage container. About \$1,500 required to create a usable display including this item.

<sup>v</sup> “SS” indicates aircraft from the collection of Sidney Shelton. If VAM is closed and the aircraft do not remain in the Richmond area, SMV may be obliged to transfer these aircraft to the Smithsonian Institution at costs not yet known.

<sup>vi</sup> This is a one-of-a-kind aircraft once owned by William Randolph Hearst and is the only surviving model of this version.