Further Reductions to Aviation Programs Are Possible and an Aviation Management Authority is Needed

Final Report to the Joint Legislative Program Evaluation Oversight Committee

Report Number 2012-03

March 14, 2012

NORTH CAROLINA GENERAL ASSEMBLY
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March 14, 2012

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North Carolina General Assembly
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Honorable Co-Chairs:

Session Law 2011-145 directed the Program Evaluation Division to revisit issues raised in the division's 2010 reports on state aircraft by evaluating the consolidation of air services provided by the Department of Transportation, the State Bureau of Investigation, and the University of North Carolina passenger mission, and further studying the formation of an Aviation Management Authority for all state aircraft.

I am pleased to report that the Departments of Agriculture, Environment and Natural Resources, Justice, Public Safety, and Transportation; the Wildlife Resources Commission; and the University of North Carolina's Area Health Education Centers program cooperated with us fully and were at all times courteous to our evaluators during the evaluation.

Sincerely,

John W. Turcotte
Director

PROGRAM EVALUATION DIVISION
NORTH CAROLINA GENERAL ASSEMBLY

March 2012 Report No. 2012-03

Further Reductions to Aviation Programs Are Possible and an Aviation Management Authority is Needed

Summary

North Carolina Session Law 2011-145 directed the Program Evaluation Division to revisit issues raised in the division's 2010 reports on state aircraft by evaluating the consolidation of air services provided by the Department of Transportation, the State Bureau of Investigation, and the University of North Carolina passenger mission, and further studying the formation of an Aviation Management Authority for all state aircraft. This report addresses four questions.

1. **Are North Carolina's passenger aircraft meeting the minimum annual flight-hour threshold?** All airplanes operated by the Department of Transportation (DOT) and the University of North Carolina's Area Health Education Centers (AHEC) met the 200-hour efficiency threshold for passenger air service in Calendar Year 2011, but the DOT helicopter flew only 66 hours. Because State Bureau of Investigation (SBI) airplanes were primarily used for law enforcement activities, the passenger efficiency threshold did not apply. However, SBI flight logs showed minimal use and alternatives should be explored to reduce the number of aircraft in its fleet.
2. **Can aircraft, personnel, or facilities be eliminated to reduce expenditures?** DOT's helicopter could be eliminated, but it provides important functions and there are few alternatives to secure these services. Eliminating the SBI facility and housing SBI aircraft at the DOT facility would result in $111,230 in annual savings. Current staffing levels for all three programs are appropriate.
3. **Would consolidation of passenger aircraft result in an improved level of service?** Although DOT and AHEC both operate passenger transportation missions, consolidation would present logistical difficulties because the programs have different utilization and scheduling patterns. Further consolidation of passenger air service would therefore not result in improved service.
4. **Should North Carolina establish an Aviation Management Authority?** An Aviation Management Authority is needed to ensure efficient and effective use of state aircraft. Although state aviation programs have made progress on implementing fleet management practices since 2010, additional improvements are needed.

Purpose and Scope

This report is a follow-up to two Program Evaluation Division reports released in 2010: *Selling 25 Underutilized Aircraft May Yield Up to $8.1 Million and Save $1.5 Million Annually* and *Follow-Up Analysis of 25 Underutilized State Aircraft Confirmed Inefficiency and Potential Cost Savings*. In 2011, the North Carolina General Assembly directed the Program Evaluation Division to revisit issues raised in the 2010 reports by evaluating the consolidation of air services provided by the Department of Transportation, the State Bureau of Investigation, and the University of North Carolina passenger mission and to further study the formation of an Aviation Management Authority.[1]

This evaluation addresses four research questions:

- Are North Carolina's passenger aircraft meeting the minimum annual flight-hour threshold?
- Can aircraft, personnel, or facilities be eliminated to reduce expenditures?
- Would consolidation of passenger aircraft result in an improved level of service?
- Should North Carolina establish an Aviation Management Authority?

The Program Evaluation Division analyzed information from numerous sources including

- agency records including fiscal information, flight records, and aircraft specifications;
- interviews with administrators from each agency with aircraft used for passenger transport; and
- query responses from agencies with aircraft.

Background

In 2010, the Program Evaluation Division completed a full review of the State's aircraft and issued the report, *Selling 25 Underutilized Aircraft May Yield Up to $8.1 Million and Save $1.5 Million Annually*. This report found

- state aircraft were underutilized;
- 25 aircraft and five facilities could be eliminated;
- weaknesses in aviation program fleet management practices were creating inefficient operations; and
- decentralized operations of state aircraft resulted in increased costs and fractured management.

Based on these four findings, the Program Evaluation Division recommended

- creating an Aviation Management Authority; and
- eliminating 25 aircraft and five facilities.

In June 2010, the General Assembly passed legislation based on the report findings and recommendations. Session Law 2010-31 required

[1] 2011 NC Sess. Laws, 2011-145

- the Division of Marine Fisheries to use aviation mechanics employed by the Division of Forest Resources;[2]
- the Department of Environment and Natural Resources to purchase computer software to establish and maintain flight and maintenance records for aircraft operated by the department;
- the Department of Environment and Natural Resources to report to the General Assembly on the uses of state aircraft, progress made on the management practices identified in the Program Evaluation Division report, and to provide a summary of the Division of Forest Resources review of its aircraft by aviation consultants Conklin & de Decker; and
- the Department of Commerce to transfer its Division of Aviation to the Department of Transportation.

In addition, the Joint Conference Committee Report on the Continuation, Expansion and Capital Budgets required the sale of at least 10 aircraft in the Division of Forest Resources, 3 helicopters in the Division of Marine Fisheries, and elimination of two facilities. In addition to these required changes, the University of North Carolina's Area Health Education Centers aviation program moved from the Horace Williams Airport in Chapel Hill to a new facility at Raleigh-Durham International Airport that is connected to the Department of Transportation's aviation facility[3] and the State Bureau of Investigation eliminated one aircraft. As shown in Exhibit 1, 19 aircraft and four facilities have been eliminated since July 2010.

Additional changes are currently being discussed by aviation programs. The Forest Service is working to establish three main facilities and to eliminate half of its current facility leases by the Spring of 2013. The Wildlife Resources Commission is planning to reduce its fleet from four to three aircraft.

As directed in statute, this report revisits issues covered in the 2010 reports. Specifically, this follow-up provides details on the usage of passenger transport aircraft in the Department of Transportation, the State Bureau of Investigation, and the University of North Carolina for Calendar Year 2011 and reviews the need for an Aviation Management Authority.

[2] 2011 NC Sess. Laws 2011-145 13.25(a) transferred the Division of Forest Resources from the Department of Environment and Natural Resources to the Department of Agriculture. The division was renamed the NC Forest Service after it moved to the Department of Agriculture.

[3] This move was planned before the evaluation completed in April 2010 and occurred independently of the report and legislative direction.

Exhibit 1: Changes in Number of Aircraft and Facilities Operated by State Agencies, Fiscal Year 2008-09 to January 2012

	Aircraft			Facilities		
State Program	**Fiscal Year 2008–09**	**January 2012**	**Change**	**Fiscal Year 2008–09**	**January 2012**	**Change**
Passenger Transport						
Area Health Education Centers	6	6	0	1	1	0
Department of Transportation	3	4	1	1	1	0
Department of Commerce	3	0	–3	0	0	0
Law Enforcement						
State Bureau of Investigation	3	2	–1	1	1	0
State Highway Patrol	9	9	0	5	5	0
Wildlife Resources Commission	4	4	0	4	4	0
Division of Marine Fisheries	6	3	–3	3	3	0
Resource Protection						
Forest Service	38	25	–13	11	8	–3
Total	**72**	**53**	**–19**	**26**	**23**	**–3**

Notes: In Fiscal Year 2008-09, the Departments of Commerce and Transportation shared a facility. All Department of Commerce aircraft were transferred to the Department of Transportation in July 2010 pursuant to Session Law 2010-31 Section 14.6.(a)

Source: Program Evaluation Division based on information received from state aviation programs.

Questions and Answers

1. Are North Carolina's passenger aircraft meeting the minimum annual flight-hour threshold?

One indicator of efficiency applied by the aviation transportation industry is flight hours per year, where flight hours under a certain threshold indicate inefficiency. Industry sources set this threshold between 200 and 400 flight hours per year for passenger aircraft. If an aircraft is not flown a minimum of 200 hours per year, the operator should consider alternatives to aircraft ownership such as chartering, fractional ownership, or using commercial flights.

To assess whether state passenger aircraft were used efficiently, the Program Evaluation Division applied the transportation industry minimum threshold of 200 flight hours per year to aircraft operated by state programs in Calendar Year 2011. Because this threshold was developed by the aviation transportation industry, it is particularly applicable to state aviation programs that have passenger transport as their primary mission: the Department of Transportation (DOT) and the University of North Carolina's Area Health Education Centers (AHEC).

All airplanes currently operated by DOT and AHEC exceeded the 200 flight-hour threshold for 2011, but the DOT helicopter did not. The

Sikorsky S76C+ helicopter operated by DOT only flew for 66 hours in 2011 (see Exhibit 2). This specialty helicopter is used to provide aerial site surveys for businesses looking to relocate to North Carolina and for government officials to inspect disaster-related damage. Helicopters have the unique capability of hovering and providing passengers an unobstructed view of the area of interest.

Exhibit 2: Passenger Aircraft Specifications, Flight Hours, and Cost, Calendar Year 2011

Aircraft	Make/Model	Description	Total Hours	Cost/Hr	Use by Flight Hour
Area Health Education Centers					
212CH[1]	Beechcraft Baron BE/58G	Twin engine, seats 5	161	$951	93% AHEC 7% Non-AHEC
213CH	Beechcraft Baron BE/58G	Twin engine, seats 5	325	$964	80% AHEC 20% Non-AHEC
214CH	Beechcraft Baron BE/58G	Twin engine, seats 5	288	$926	96% AHEC 4% Non-AHEC
215CH	Beechcraft Baron BE/58G	Twin engine, seats 5	336	$964	97% AHEC 3% Non-AHEC
219CH	Beechcraft Baron BE/58G	Twin engine, seats 5	292	$981	92% AHEC 8% Non-AHEC
220CH	Beechcraft Baron BE/58G	Twin engine, seats 5	315	$954	69% AHEC 31% Non-AHEC
227CH[2]	TBM 700	Single engine, seats 5	394	$1,029	25% AHEC 75% Non-AHEC
Department of Transportation					
N2NC	Beechcraft King Air C90GTi	Twin engine, seats n/a	223	$2,372	Photogrammetry
N3NC	Beechcraft King Air B200	Twin engine, seats 9	253	$2,507	34% Commerce 31% Executive Branch 22% DOT 13% Other State Agencies
N121NC	Sikorsky S76C+	Helicopter, seats 7	66	$8,553	49% Commerce 26% DOT 25% Executive Branch
N122NC	Cessna Citation C550/Bravo	Twin engine jet, seats 9	227	$3,374	47% Commerce 23% Other State Agencies 19% Executive Branch 11% DOT
State Bureau of Investigation					
N90575	Cessna CT210	Single engine, seats 5	57	$2,431	64% Recon/Surveillance/Photo 20% Operations/Search 16% Maintenance/Flight Training
N60JM[3]	Cessna CT210R7	Single engine, seats 5	6	$2,444	62% Reconnaissance 21% Maintenance 17% Search/Rescue
500KR	Beechcraft King Air C90	Twin engine, seats 7	120	$2,444	51% Fugitive Extradition 35% Investigation 14% Meetings

Notes: AHEC provided passenger flight services to other University of North Carolina departments such as Athletics, General Administration, Development, and UNC Healthcare.

[1]212CH was sold in 2011 for $93,700. If it had flown for the entire year, the Program Evaluation Division estimates it would have flown for 295 hours.

[2]AHEC 227CH was purchased in March 2011 for $1,876,933. If it had flown for the entire year, the Program Evaluation Division estimates it would have flown for 525 hours.

[3]SBI N60JM was decommissioned in 2011 and sold in 2012 for $237,200

Source: Program Evaluation Division based on aircraft specifications, cost, and flight hours provided by state aviation programs.

Session Law 2011-145 directed the Program Evaluation Division to evaluate the consolidation of air services provided by the Department of Transportation, State Bureau of Investigation (SBI), and University of North Carolina passenger mission. This consolidation was premised on previous data indicating these three programs were largely or exclusively for passenger transport. However, follow-up data indicated that whereas DOT and AHEC both operate passenger transportation services, SBI now uses airplanes primarily for law-enforcement purposes.

The 200-flight-hour threshold is most appropriate for state agencies that have passenger transportation as their primary mission. When the Program Evaluation Division examined SBI aircraft use in 2010, agency data revealed 43% of the hours flown by the twin-engine Beechcraft King Air over the previous three-year period were to provide transportation to conferences, meetings, and trainings. However, 2011 data indicated passenger use of this airplane declined to 14% of total flight hours. In 2011, the single-engine Cessna was used for a total of 57 hours for law enforcement—reconnaissance, surveillance, photography, operations, and search—and did not serve any passenger transportation purposes. During 2011, SBI decommissioned and sold its other single-engine Cessna, leaving the agency with two airplanes.

Low-utilization aircraft cost the state more per hour to own and operate. Fixed costs are the annual costs of owning, maintaining, and administering aircraft regardless of how much the aircraft flies. Crew salaries and benefits, scheduled maintenance and inspections, operations overhead, depreciation, and insurance are fixed costs. Variable costs are the costs of operating and maintaining aircraft as a result of use, including contracted personnel, unscheduled maintenance, and fuel. The Program Evaluation Division collected cost data on each aircraft operated by AHEC, DOT, and SBI. Of these three programs, only AHEC tracks all costs by aircraft. DOT tracks most costs by aircraft, but not personnel and overhead, and the SBI does not track any costs by aircraft.

The Program Evaluation Division calculated the cost per flight hour for each aircraft that flew in Calendar Year 2011 using cost information and number of hours flown provided by the programs. Cost per hour is highly dependent on use: the fewer hours flown, the more it costs per hour to operate each aircraft because fixed costs accrue regardless of how much an aircraft is used.

SBI airplanes have a high cost per hour because they are not flown very often. The two current SBI airplanes cost $430,396 in total to operate in 2011 and flew a combined total of 176 hours.[4] Because these aircraft were not used primarily for passenger service, the 200 flight-hour threshold was not the appropriate measure of utilization and was not applied. However, due to the overall low utilization rate and high cost per hour, the Program Evaluation Division identified three alternatives that would allow SBI to reduce the number of aircraft in its fleet.

- SBI could use the DOT photogrammetry plane for aerial photography needs. SBI uses a single-engine Cessna to manually

[4] The total hours of the two SBI planes do not match Exhibit 2 due to rounding.

photograph sites for investigations and for the marijuana eradication program. Fifty-nine percent of the SBI Cessna's flight hours occur May through August. DOT operates a photogrammetry airplane with sophisticated aerial cameras that capture highly detailed digital imagery. DOT uses this airplane less frequently in warmer months when vegetation can affect engineering survey quality: only 17% of the DOT photogrammetry airplane's hours occur May through August.

- SBI could use DOT airplanes for fugitive extradition transport. In Calendar Year 2011, 51% of the total flight hours of the SBI Beechcraft King Air were for extradition. DOT has a pilot with law enforcement licensure, operates a much newer, larger Beechcraft King Air B200, and has transported prisoners in the past. However, the two agencies would need to agree on how to prioritize SBI extradition needs.

- SBI could contract extradition transportation to one of several private companies that provide prisoner transport services. These businesses transport prisoners throughout the United States using ground or air transportation. Several companies provided quotes ranging from $0.75 to $1.10 per mile for this service.

2. Can aircraft, personnel, or facilities be eliminated to reduce expenditures?

Aircraft

Helicopters are generally more costly to fly than airplanes because they require a significant amount of maintenance. The Department of Transportation (DOT) helicopter cost $560,237 to operate in 2011, at a cost per flight hour of $8,553. The Department of Commerce (Commerce) uses the helicopter for business recruitment by taking clients on tours of potential sites. Nearly half of the helicopter's flight hours were logged by Commerce. Much of the remaining use was for aerial surveys following natural disasters such as hurricanes or tornadoes, which were part of emergency response and included flights for federal and state leaders as well as technical crews surveying damage. Helicopters are needed for this purpose because they generally fly at a lower altitude than airplanes and provide a vantage point that is not possible from an airplane.

The Department of Transportation helicopter did not meet the 200-hour threshold and could be considered for elimination, but few alternatives exist. Commerce administrators believe the helicopter is a critical asset in recruiting companies to locate in North Carolina because those companies operate on tight decision time frames and have a limited amount of time to visit sites. Although eliminating the helicopter would result in annual savings, each of the following potential alternatives presents challenges.

- *Eliminate the helicopter and charter a private helicopter*. Few helicopters are available within the State. If DOT were to charter a helicopter, it would likely have to be ferried into the state from another location, adding to the cost. In addition, it could be a

challenge to charter a helicopter on short notice, as is sometimes needed for economic development and emergency response purposes.

- *Replace the current helicopter with one that can be shared with the State Highway Patrol.* The current helicopter is expensive to own and operate ($8,553 per hour) and could be replaced with a helicopter that has a lower variable cost. Aviation industry estimates suggest that the variable costs to operate a Bell helicopter would be less than the current Sikorsky model (see Exhibit 3).[5] In addition, replacing the current helicopter with a Bell would create the opportunity for resource sharing with the State Highway Patrol, whose fleet is composed of Bell helicopters.

DOT, Commerce, and the State Highway Patrol would need to agree on how the aircraft would be prioritized when scheduling conflicts occur.

Exhibit 3

Variable Cost per Hour of Bell and Sikorsky Helicopters

Helicopter Model	Variable Cost Per Hour
Bell 407 (single engine)	$ 757
Bell 429 (twin engine)	$1,009
Sikorsky S-76C+ (twin engine)	$1,755

Source: Program Evaluation Division based on variable cost information from Conklin & de Decker.

Personnel

A review of current aviation staffing levels at DOT, the State Bureau of Investigation (SBI), and the University of North Carolina's Area Health Education Centers (AHEC) suggested that current levels are appropriate.

- DOT has seven pilots, three mechanics, and one scheduler. DOT sometimes uses contract pilots to support missions and intends to establish a pool of contract pilots who are familiar with DOT aircraft.
- The SBI air wing has two staff members—a pilot and law enforcement air operations supervisor. SBI does not employ aviation maintenance staff because all maintenance is contracted to a private company.
- AHEC has six pilots, three mechanics, one supervisor, and two administrative support positions.

PED did not identify any potential staffing reductions without consolidating aviation divisions or reducing aircraft.

[5] Conklin & de Decker, a general aviation consulting company, provided total aircraft variable cost per hour figures. Their calculation of variable costs includes fuel, airframe maintenance, labor and parts, engine restoration, and miscellaneous costs.

Facilities

- The DOT and AHEC aircraft facilities are both located at Raleigh-Durham International Airport in Morrisville. The facilities are located adjacent to one another but they are operationally separate.
- The SBI facility is located at the Harnett Regional Jetport in Erwin. In 2011, SBI spent $111,230 for hanger and administrative office space.

The SBI aircraft facility could be eliminated. The DOT hangar currently houses four aircraft but it has the capacity for six. Relocating SBI's aircraft to the DOT facility would result in annual savings of $111,230, which is the cost of SBI's current facility rental.

Additional savings would result from consolidating SBI facilities with the larger DOT facility. Moving SBI aircraft to the DOT facility could allow DOT mechanics to work on SBI airplanes. Currently, SBI contracts all its maintenance needs to a local vendor. The two agencies have previously considered a cost-sharing arrangement for maintenance services, but no agreement has been finalized.

3. Would consolidation of Department of Transportation and University of North Carolina Area Health Education Centers aircraft result in an improved level of service?

Further consolidation of passenger transport services would not result in improved level of service. In July 2010, the General Assembly consolidated the passenger air services of the Department of Commerce and the Department of Transportation (DOT), which are now operated by DOT.

Whereas DOT and the University of North Carolina's Area Health Education Centers (AHEC) both operate passenger transportation missions, consolidation would present logistical difficulties because the programs have different utilization and scheduling patterns.

Most AHEC flights are within North Carolina and AHEC uses its airplanes quite frequently—on average, AHEC airplanes flew for 347 hours in 2011. AHEC's fleet has a low cost per flight hour relative to other state agencies due, in part, to the high utilization rate of airplanes and because AHEC airplanes require only one pilot. AHEC has no need for additional airplanes and there are no aircraft within the DOT fleet that would better serve AHEC's mission.

The DOT fleet fulfills a different mission: its two passenger airplanes, the Beechcraft King Air B200 and Cessna Citation Jet, both accommodate up to nine passengers. These airplanes can be flown longer distances out of state, though they are frequently used for within-state flights.

AHEC scheduling differs from DOT's on-demand passenger service. The majority of AHEC flights are scheduled medical flights that serve the AHEC mission, though AHEC also supports other University of North Carolina departments such as Athletics, Development, General Administration, and

UNC Healthcare. AHEC mission flights need to occur on time in order to provide scheduled health services. Consolidating AHEC and DOT fleets could produce scheduling conflicts, if, for example, clinical schedules conflicted with a high-ranking government official's flight needs.

AHEC and DOT are already located at adjoining facilities at Raleigh-Durham International Airport. Though the two agencies maintain separate pilots and mechanics, there is some collaboration among mechanics and sharing of tools and equipment. The two divisions could find ways to more formally work together and share resources to take advantage of their proximity.

4. Should North Carolina Establish an Aviation Management Authority?

The Program Evaluation Division recommended the creation of an Aviation Management Authority in its April 2010 report, *Selling 25 Underutilized Aircraft May Yield Up to $8.1 Million and Save $1.5 Million Annually*. The report identified concerns regarding aviation management and safety that were compounded by fractured management across the eight separate aviation programs.[6] The report recommended a single authority to address these concerns, to implement necessary improvements, and to assume responsibilities related to management oversight of all aviation programs and oversight of maintenance for all state aircraft.

This recommendation was based on findings of inefficient operations due to weaknesses in aviation program fleet management practices. The Program Evaluation Division identified four criteria essential for good management of aviation programs:

- maintaining aircraft to comply with federal and state regulations;
- maintaining, integrating, and analyzing flight and maintenance information to ensure safe and efficient use of aircraft;
- tracking and analyzing cost by aircraft and for the fleet to ensure efficient use; and
- determining the optimal fleet size.

The best way to implement these fleet management practices is to use an electronic management system that integrates flight and maintenance records, tracks inventory, and tracks costs.

The Program Evaluation Division surveyed all seven of the State's aviation programs[7] to determine adherence to fleet management practices. As shown in Exhibit 4, implementation of the fleet management practices across aviation programs is mixed.

[6] The aviation division in the Department of Commerce was transferred to the Department of Transportation, leaving seven aviation programs in calendar year 2011.
[7] AHEC, DOT, SBI, Forest Service, Division of Marine Fisheries, State Highway Patrol, and Wildlife Resources Commission.

Exhibit 4: Fleet Management Practices are Mixed

Management Practice	Passenger Transport		Law Enforcement				Resource Protection
	AHEC	Dept. of Transportation	State Bureau of Investigation	State Highway Patrol	Marine Fisheries	Wildlife Resources Commission	Forest Service
Electronic flight logs	●	●	◖	●	◖	◖	○
Electronic maintenance records	●	●	○	●	◖	◖	○
Electronic tracking, forecasting, and scheduling maintenance	●	●	○	●	◖	○	○
Integrated electronic maintenance and flight information	●	●	○	●	○	○	○
Inventory tracking	●	●		●			◖
Cost per hour calculations	●	●	○	●	●	●	○
Maintenance cost by aircraft	●	●	○	●	●	●	○
Long-term replacement plan	●	●	●	●	○	○	●

● = Full implementation ◖ = Partial implementation ○ = Does not exist

Notes: AHEC stands for the University of North Carolina's Area Health Education Centers. The Division of Marine Fisheries, State Bureau of Investigation, and Wildlife Resources Commission do not have a maintenance program and therefore do not maintain inventory. The State Bureau of Investigation is currently implementing a web-based flight management data system; however, this system was not in place during Calendar Year 2011. The Forest Service and Division of Marine Fisheries are in the process of receiving bids for a shared aircraft flight tracking and maintenance system.

Source: Program Evaluation Division based on information provided by state programs.

- **Electronic flight logs.** Flight logs contain information on flight time, time spent waiting for passengers, route, agency using or requesting flights, passengers, and pilots. Electronic flight logs allow management to easily review aircraft usage, pilot hours, and flight patterns, enabling more efficient use of aircraft. Currently, four of the seven programs maintain either paper log books or use a spreadsheet to track flights. The University of North Carolina's Area Health Education Centers (AHEC), Department of Transportation (DOT), and State Highway Patrol (SHP) maintain electronic flight logs. In Fiscal Year 2008–09, only SHP maintained electronic flight logs.

- **Electronic maintenance records.** Tracking maintenance activities electronically allows management to review maintenance that has been completed, ensure aircraft are up to date on required inspections, look for patterns of maintenance problems, determine which parts are required most frequently and maintain inventory for those parts, and potentially increase the resale value of aircraft. Two programs, State Bureau of Investigation (SBI) and the

Forest Service, (down from five in Fiscal Year 2008–09) do not have electronic maintenance records and rely on paper log books to review maintenance activities on aircraft.

- **Electronic tracking, forecasting, and scheduling maintenance.** All aircraft are required to have regular inspections and maintenance, and the aircraft cannot fly until the work has been completed. Three of the seven programs use an aviation management information system to track, forecast, and schedule maintenance. The Division of Marine Fisheries uses a spreadsheet and SBI, Wildlife Resources Commission, and Forest Service still use paper logs.
- **Integrated electronic maintenance and flight information.** Numerous computer- and internet-based programs integrate flight and maintenance information to help aircraft managers plan and analyze fleet performance. These programs enable managers, pilots, and mechanics to review aircraft operations and maintenance from any location. With paper log books, the information can only be reviewed where the log books are stored and information cannot be easily integrated. Three programs (AHEC, DOT, and SHP) maintain an aviation management information system to integrate maintenance and flight information.
- **Aircraft costs.** Knowing the cost per hour of flying each aircraft would enable managers to make better and timelier decisions about which aircraft to fly. Two of the seven programs (SBI and Forest Service) do not know the cost of flying each aircraft.
- **Maintenance costs.** A key component of calculating cost per hour is knowing how much is spent on maintenance. Two programs, the Forest Service and SBI, do not track maintenance costs by aircraft. Without this information, it is impossible to analyze the cost of keeping aircraft versus replacement.
- **Long-term replacement plan.** Five of the seven programs have a long-term replacement plan. This plan should include fleet requirements, aircraft that can best meet those requirements, and a schedule for fleet replacement. Only AHEC's plan includes all three elements. Three programs have two of the three key elements and the SBI's plan only contains one element. The Division of Marine Fisheries and Wildlife Resources Commission do not have a plan.

State aviation programs have made some improvements to fleet management practices, but more is needed. Since the April 2010 report, several programs have strengthened their aviation program by implementing the eight fleet management practices shown in Exhibit 4. For example,

- three programs (AHEC, DOT, and SHP) have fully implemented all eight management practices;
- three programs (SBI, Division of Marine Fisheries, and Wildlife Resources Commission) have partially implemented electronic flight logs by switching from paper logs to a spreadsheet; and

- three programs (SBI, Division of Marine Fisheries, and Forest Service) are in the process of implementing an aviation management information system.

As shown in Exhibit 4, gaps in adherence to fleet management practices persist despite these improvements. An Aviation Management Authority would ensure that all programs adhere to all practices.

An Aviation Management Authority is needed to ensure efficient and effective use of state aircraft. Currently, there are no statewide policies for operating and managing state aircraft. An authority would develop consistent policies and procedures for all aviation activities to ensure appropriate and efficient use of aviation resources and to standardize practices related to training, maintenance, and data tracking. The authority would also ensure aviation programs implement fleet management practices, operate aircraft safely, share resources when possible, and coordinate maintenance.

With the authority in place, agencies would continue to own and operate their own aircraft and retain control of their flight schedule. An Aviation Management Authority would oversee aviation activities to ensure that state aviation resources are being using efficiently and effectively. An authority would have the following responsibilities.

- Produce reports from the centralized data system to ensure safe, efficient operations of state aircraft in keeping with policies and procedures adopted by the authority.
- Review the fleet to ensure efficient operations across agencies, encouraging resource sharing and considering privatization where appropriate.
- Examine aviation facilities and combine or close facilities as needed to assure efficient operations.
- Convene staff from aviation programs to promote information sharing and efficiencies gained by coordinated operations.
- Consider the best way to conduct centralized maintenance for all state aircraft.
- Evaluate fleet mix across aviation programs and develop long-term replacement plans in conjunction with agency aviation programs.
- Acquire and dispose of all aviation assets as necessary.
- Review and approve all budget requests before going to the General Assembly.
- Report annually to the General Assembly on the cost efficiency of all state aviation programs.

The Aviation Management Authority should be housed in DOT, where the current Division of Aviation would become the Aviation Management Authority. DOT was identified as the appropriate location for the authority because it has experience managing aviation resources and possesses the necessary infrastructure. Ongoing support for the authority would be provided by an annual management fee of 3% of total program costs paid to the authority by the state's aviation programs. [8]

[8] A 3% management fee assessed to each non-passenger transport program would yield approximately $200,000 per year.

Conclusion

Some aircraft examined in this review, such as the Department of Transportation (DOT) helicopter, were underutilized and could be eliminated. However, this helicopter provides important services and there are limited alternatives to secure these services in lieu of owning the aircraft. In addition, State Bureau of Investigation (SBI) airplanes were not used for passenger transport, but they flew few hours during Calendar Year 2011. Alternatives should be explored to reduce the SBI fleet.

This review of North Carolina's passenger transport air services found further consolidation of passenger air service would not result in an improved level of service. Airplanes operated by DOT and the University of North Carolina's Area Health Education Centers met efficiency thresholds for passenger use. Even though their passenger missions are aligned, consolidation of these two programs would present logistical difficulties because they have different utilization and scheduling patterns.

Despite improvements in fleet management practices since 2010, central oversight is still needed to ensure efficient and effective use of state aircraft. As recommended in the April 2010 report, the General Assembly should direct the establishment of an Aviation Management Authority in DOT to oversee management of all aircraft owned or operated by the State.

Agency Response

A draft of this report was submitted to the Department of Transportation, State Bureau of Investigation, and University of North Carolina's Area Health Education Centers for review and response. Their responses are provided.

Program Evaluation Division Contact and Acknowledgments

For more information on this report, please contact the lead evaluator, Catherine Moga Bryant, at catherine.mogabryant@ncleg.net.

Staff members who made key contributions to this report include Jeff Grimes, Carol H. Ripple, and Pamela L. Taylor. John W. Turcotte is the director of the Program Evaluation Division.

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March 6, 2012

Mr. John W. Turcotte
Director, Program Evaluation Division
North Carolina General Assembly Legislative Services Office
300 N. Salisbury Street, Suite 100
Raleigh, North Carolina 27603-5925

Dear Mr. Turcotte:

On behalf of the University of North Carolina at Chapel Hill, I am responding to the March 2012 Program Evaluation Division's follow-up report, "Further Reductions to Aviation Programs Are Possible and an Aviation Management Authority is Needed". In 2011, the North Carolina General Assembly directed the Program Evaluation Division to revisit issues raised in the 2010 reports by evaluating the consolidation of air services provided by the Department of Transportation, the State Bureau of Investigation, and the University of North Carolina passenger mission and to further study the formation of an Aviation Management Authority. We appreciate the opportunity to comment on the report.

As with previous independent evaluations of the state's aircraft fleet, the UNC-Chapel Hill's Area Health Education Centers (AHEC) Medical Air Operations fleet is once again confirmed as one of the leanest and most efficient among the state agencies with aircraft. The report noted that AHEC Medical Air Operations maintains all critical data and reports that the evaluators felt were essential to effectively manage the costs of a flight department.

The report acknowledges that one indicator of efficiency applied by the aviation transportation industry is flight hours per year. As important as annual flight hours is, it is also critical that the aircraft used be appropriate for the mission being flown. AHEC's Beechcraft Baron fleet, flown 200 or more hours inside the boundaries of the state of North Carolina, is a very cost effective means of passenger transportation. We are pleased that the report acknowledges that AHEC flies the appropriate aircraft for the mission and that AHEC's fleet has a low cost per hour relative to other state agencies.

The report concludes that consolidation of Medical Air Operations with DOT would present logistical difficulties because the programs have different utilization and scheduling patterns. We agree with this conclusion, but are also committed to collaborating with DOT wherever possible in order to assure efficiency of operations.

We noted in our April 2010 response that AHEC would support the creation of a centralized Office of Aviation Management rather than an Aviation Management Authority. We still believe that such a neutral location outside of any of the agencies with aviation resources is most appropriate if a central aviation management entity is needed.

We also agree that all agencies with aviation resources should continue to own and operate their aircraft and control their flight schedules. Having said that, AHEC and Medical Air will continue to aggressively seek additional cost savings in order to maximize the efficiency of our operation.

AHEC aircraft are owned by Medical Air, Inc., a 501(c)(3) non-profit foundation, and budget and aircraft-related decisions are controlled by the Medical Air Board. AHEC's participation in an aviation management entity would require taking into account that Medical Air is not a state agency.

AHEC effectively manages aviation resources and continues to grow in its service to AHEC and the greater university. We are pleased to report a 12% increase in the number of passengers flying on Medical Air aircraft since our relocation to RDU General Aviation on July 27, 2011. Medical Air is vital to AHEC's mission of meeting the state's health and health workforce needs, and we look forward to a bright future serving the communities of North Carolina.

Sincerely,

Thomas J. Bacon, Dr. P.H.
Director, North Carolina AHEC Program
Executive Associate Dean, UNC School of Medicine

Cc: H. Holden Thorp, Chancellor
William L. Roper, CEO, UNC Health Care System and Dean, UNC School of Medicine
Bruce Carney, Provost
Kevin FitzGerald, Chief of Staff, UNC School of Medicine and UNC Health Care
Nadine O'Malley, Associate Director, North Carolina AHEC Program

STATE OF NORTH CAROLINA
DEPARTMENT OF TRANSPORTATION

BEVERLY EAVES PERDUE
GOVERNOR

EUGENE A. CONTI, JR.
SECRETARY

March 5, 2012

Mr. John W. Turcotte, Director
North Carolina General Assembly
Program Evaluation Unit
Legislative Office Building, Suite 100
300 North Salisbury Street
Raleigh, North Carolina 27603

RE: State Aircraft Fleet Study Report No. 2 March 2012
NCDOT Formal Response

Dear Mr. Turcotte:

The North Carolina Department of Transportation (NCDOT) has completed its review of the Program Evaluation Division's draft report pertaining to additional passenger consolidation required under North Carolina Session Law 2011-145 and offers the following comments.

General
The Department supports the concept of reasonable, properly planned, and executed state aircraft passenger fleet and operational consolidation models. In general, the NCDOT supports the overall findings of the report and is constantly looking to reduce overall cost while promoting safety and efficiency.

Item No. 1 - Aviation Management Authority in the NCDOT – The Department believes an Aviation Management Authority in the NCDOT has merit and is receptive to participating in a feasibility study to explore and determine the exact role of the new agency. The new Aviation Management Authority may allow the State to realize some of the benefits associated with full consolidation while allowing some agencies to maintain mission autonomy.

Item No. 2 – Eliminate the NCDOT Helicopter – The NCDOT is actively working with the North Carolina State Highway Patrol (SHP) to share access to a helicopter. Under our shared helicopter access plan, the current helicopter would be sold and the funds used to purchase a newer Bell, Inc. helicopter. The NCDOT and the SHP would share the new helicopter, which will significantly increases its utilization while allowing the state to retain helicopter services during emergency response events (i.e. hurricanes, rock slides). While we are still in the implementation phase of the program, it is believed the sale of the current helicopter will fund all or at least vast majority of the proceeds needed to purchase the newer helicopter.

Conclusion

Thank you for the opportunity to respond to the draft report. Your report is well conceived and identifies the need for continued improvement. The Department has been a leader in improving the efficiency of the state's overall aircraft fleet while remaining focused on safety or an improved level of service. The Department welcomes an opportunity to partner with other agencies to reduce cost while improving efficiency of our state's aircraft fleet.

Sincerely,

Paul Morris, FLSA
Deputy Secretary for Transit

PFM/rw

cc: Eugene A. Conti, Secretary
Jim Trogdon, Chief Operating Officer - NCDOT
Catherine Moga Bryant, Senior Program Evaluator, Program Evaluation Division
Beau Memory, Legislative Liaison – NCDOT
Richard Walls, Director of Aviation - NCDOT

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March 5, 2012

Catherine Moga Bryant
Senior Program Evaluator
North Carolina General Assembly
300 N. Salisbury Street, Suite 100
Raleigh, NC 27603-5925

Dear Ms. Bryant:

The State Bureau of Investigation sincerely appreciates the opportunity to provide a response to the Program Evaluation Report No. 2012-03. This response will address the primary concerns in PED report No. 2012-03 (hereinafter referred to as the PED report) and provide additional information that will help the Program Evaluation Division better understand the unique role of law enforcement aviation and the SBI Air Wing. As noted in the PED report the SBI airplanes are used primarily for law enforcement missions. The SBI Air Wing since its inception has played a critical and unique role in law enforcement operations throughout the state.

As the Program Evaluation Division staff understands, there is a distinct difference between law enforcement missions and passenger transport missions. The SBI Air Wing was established to carry out the role of the State Bureau of Investigation in assisting local, state and federal law enforcement agencies in the investigation of criminal activities. The agents assigned to the SBI Air Wing are professional law enforcement pilots and participate in the SBI's function by, among other things, providing the law enforcement community of North Carolina with unique and special services involving the utilization of aircraft in law enforcement missions. These services include but are not limited to:

- aerial surveillance of complex law enforcement operations, including those designed to investigate suspected terrorist activities, illegal drug trafficking, aerial crime scene photography, and aerial reconnaissance and intelligence gathering;
- searches for missing persons and suspects;
- emergency/disaster situations;
- airborne law enforcement communications coordination and relay;
- transportation of local, state and Federal law enforcement agents, witnesses, adult and child victims, confidential informants, criminal suspects, hazardous materials, emergency/disaster relief supplies; and

- extradition of violent and non violent fugitives from other states who have fled after alleged criminal behavior in North Carolina.

Through this letter, the State Bureau of Investigation wishes to provide comment on two cost-savings suggestions listed in the report: reducing the number of aircraft in the SBI Air Wing and eliminating the SBI aircraft facility.

Reducing the number of aircraft in the SBI Air Wing

On page 6 of the report, the PED finds that the "SBI airplanes have a high cost per hour because they are not flown very often." The report continues by identifying three alternatives that would allow the SBI to reduce the number of aircraft in its fleet: (1) use of the DOT photogammetry plane for photography needs; (2) use of DOT airplanes for fugitive extradition transport; and (3) use of private contractors for extradition transportation. For the reasons set forth below, none of these alternatives are viable given the unique and sensitive purpose and mission of the SBI Air Wing.

(1) *Use of the Department of Transportation photogrammetry plane for aerial photography needs.*

The aerial photographs taken by the SBI Air Wing are used as evidence in criminal investigations, prosecutions, and trials. These evidentiary photographs depict sensitive, confidential, and privileged information. Further, because most illegal operations are committed in areas outside of plain view where ground and aerial visibility is limited or restricted, uncommon flight maneuvers are often required of the pilot to position the aircraft and its camera equipment in such a manner so that the photographs can be taken in, around, under and in close proximity to vision obstructions including, among other things, structures, vehicles, rural and urban woodlands and associated vegetation. Aircraft positioning and camera angle are critical to obtain the specifically targeted information required within these photographs. This technique is required regardless of the time of year.

The SBI Air Wing's Cessna single engine aircraft is highly maneuverable, capable of safe slow and low altitude flight, provides unlimited visibility for the photographer, and provides an excellent platform for all aspects and unique purposes of law enforcement aerial criminal investigative photography. In contrast, the use of the DOT photogrammetry plane is impracticable for criminal investigative aerial photography. None of DOT's aircraft are designed to or are capable of safely and legally operating in this necessary flight regime. The DOT photogrammetry aircraft is conspicuous, incapable of extreme slow flight, and its maneuverability and cockpit visibility are limited.

Further, the PED report recognizes the limited availability of the DOT photogrammetry aircraft. According to the report, the DOT photogrammetry plane is not used by DOT during the warmer months of the year because during that time of year the "vegetation can affect survey quality." Yet the report recommends the SBI use this same photogrammetry aircraft and system during a time of year when the quality of its system's photos is admittedly affected by vegetation to a degree that DOT will not use the system itself. Due to the critical nature and evidentiary

significance of criminal investigative aerial photos, aerial photographs taken by the SBI for law enforcement criminal investigative purposes must be of the highest quality. SBI pilots, its aircraft, and its aerial photography techniques have a proven history of providing quality effective evidentiary photographs critical to the outcome of hundreds of criminal investigations throughout the years. The SBI single engine aircraft, including the pilot, is the best platform for criminal investigative aerial photography.

(2) *Use of DOT airplanes for fugitive extraditions*

The report suggests that because the DOT has a pilot with a law enforcement licensure, the DOT could take over responsibility for fugitive transport. This suggestion overlooks the fact that SBI Pilot/Agents do not simply hold a law enforcement licensure. SBI pilots are sworn special agents who have graduated from the SBI Special Agent Academy and the SBI Field training program. The law enforcement missions and investigations assigned to the SBI Air Wing are sensitive and unique, requiring experienced and specifically trained Pilot/Agents. SBI Agents assigned to the SBI Air Wing are selected for the assignment based on their unique aviation and investigative training, expertise, education, experience, skill, judgment, and performance.

The strategies and tactics formulated to conduct these missions change on a mission-by-mission basis, and are necessary to ensure mission success, to reduce risk to the agents involved, and to ensure the mission does not pose a threat to the public. Since the tragic events of 9-11, law enforcement on the statewide scale has changed dramatically. Suspected terrorists and associated activities, Cartels, the increasing influx of gangs, and drug trafficking has required fluid knowledge, skills, strategies, and tactics in order to safely combat the potential escalation of violence inherent in these groups. The SBI has been an innovative leader within this state and the southeastern United States in staying up-to-date on and abreast of the activities of these groups through the efforts of its Information Sharing and Analysis Center (ISAAC), Intelligence Section, and the Violent Criminal Apprehension Team. The SBI Air Wing and its Pilots have direct access to and work closely with these information gathering units to acquire the necessary information to prepare the tactics for missions involving the transport of any members of these potentially dangerous criminal groups. This working relationship now requires each SBI Pilot/Agent undergo a specialized background investigation and receive a federally issued national security clearance.

(3) *Use of private contractors for extradition transportation*

The third alternative listed in the PED report suggests that the SBI could contract fugitive extradition transport to one of several private companies that provide prisoner transport. This alternative does not take into account the clear difference between prisoner transport and fugitive extradition. Prisoner transport entails moving previously convicted and incarcerated inmates from one correctional facility to another for a fee. The SBI Air Wing does not engage in prisoner transport. Rather, the SBI transports fleeing fugitives wanted for alleged crimes committed in North Carolina who SBI agents and/or local law enforcement have located and arrested with the assistance of federal, state, and/or local law enforcement agencies in other states and bring them back to North Carolina. As part of these ongoing investigations, these missions routinely involve

interviews, searches, evidence collection, and court proceedings, which require a great deal of flexibility in terms of scheduling. Additionally, SBI Pilots, as law enforcement investigators, are trained to anticipate, plan for, and handle the inherent dangers associated with transporting violent fugitives via aircraft. SBI Pilot/Agents are also well versed in laws related to the protection of inalienable rights afforded arrestees by the US Constitution.

Furthermore, SBI Pilot/Agents involved in these law enforcement missions take custody of the individuals wanted for criminal violations and are privy to confidential and sensitive conversations directly and indirectly related to on-going criminal investigations before, during and after flights. Allowing civilian or private transport companies to handle fugitive transport would compromise sensitive investigations, place civilian pilots in dangerous situations and compromise the identity and location of witnesses. The operational and investigative responsibilities and duties of SBI Pilot/Agents are nothing like the passenger transport duties provided by other units of state government or civilian companies.

Elimination of SBI aircraft facility

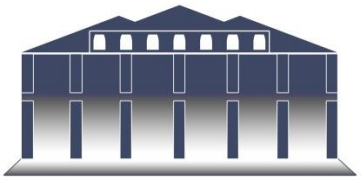
On page 9 of the report, the PED finds that the SBI aircraft facility could be eliminated and the SBI Air Wing could relocate to a hangar currently operated by DOT. The SBI hanger is sited in a location that is secure for the aircraft and for operational briefings and staging for law enforcement missions. The success of many of these missions is often predicated on the ability to keep them confidential.

Housing the SBI Air Wing with DOT would present difficulties rooted in the fact that the programs have different utilization, missions and scheduling patterns and would negatively impact the level of service to local, state and federal law enforcement agencies. First, the lack of a secure location would undermine the steps that are taken by SBI Pilot/Agents to ensure that investigations and the identity of witnesses are not compromised. Further, the SBI Air Wing law enforcement transportation missions often requires quick response capability and usually cannot be scheduled in advance, such as other state aviation transportation units. Additionally, most of SBI's law enforcement transportation missions involve assistance to local law enforcement agencies, which likely will not have access to flights from the Department of Transportation. As a result, transferring SBI's law enforcement transportation mission away from SBI would jeopardize law enforcement and public safety.

This response provides the State Bureau of Investigation's primary concerns as to the Program Evaluation Division's Report No. 2012-03. To better ensure public safety and due to the unique requirements of the law enforcement missions carried out by the SBI Air Wing it is critical that it remain with the North Carolina State Bureau of Investigation.

Respectively submitted,

Gregory S. McLeod
Director



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