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Date: March 9, 2020

To: Cathy Sandeen, Chancellor

From: John Stalvey, Interim Provost John R Stalvey

Cc: Denise Runge, Dean, Community & Technical College
Sharon LaRue, Associate Professor, Aviation Technology
Michael Moravec, Assistant Professor, Aviation Technology
Paul Herrick, Director, Aviation Technology Division
Susan Kalina, Vice Provost for Academic Affairs
Claudia Lampman, Vice Provost for Student Success

Re: **AY20 Expedited Program Review Findings – Air Traffic Control AAS**

I have reviewed the dean's findings and the completed Expedited Program Review Template for the Air Traffic Control AAS. The Provost's Office did not receive an Optional Program Response Form from the program.

Recommendations

My recommendation is to accept the decision and recommendations of the dean with the additional commentary that the program review its course rotation and semester offerings, update a course-sequencing document to provide a pathway through the degree for students, and develop a plan to address the issue of students graduating with an excess of credits. An interim progress report on all recommendations is due to the dean by March 1, 2021. The dean will submit a review along with the program's interim progress report to the provost by April 1, 2021. A follow-up Program Review will be conducted in AY22.

Decision

Recommend Continued Review

UAA Community & Technical College
University of Alaska Anchorage

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Date: February 2, 2020

To: John Stalvey, Interim Provost

From: Denise Runge, Dean

Re: AY20 Expedited Program Review Findings

Program/s in this review: Air Traffic Control (AAS)

Specialized accrediting agency (if applicable): none, but programs fall under certification requirements of the Federal Aviation Administration (FAA)

Campuses where the program is delivered: Anchorage

Members of the program review committee:

- Sharon LaRue, Associate Professor
- Michael Moravec, Assistant Professor
- Paul Herrick, Director

Centrality of Program Mission and Supporting Role The program aligns well with the mission of both the CTC and of UAA. The program prepares its graduates to either seek immediate employment as an air dispatcher, or to continue on to the federal Air Traffic Controllers training program in Oklahoma City. The job demand for graduates remains high both in and outside of the state of Alaska. The program's courses and labs play an important supporting role for the AAS in Professional Piloting and the BS in Aviation Technology.

Program Demand (including service to other programs), Efficiency, and Productivity
Demand for the program had declined precipitously, but it is poised for a rapid rise in enrollment within the next two years. During the review period, the number of majors declined from 93 in 2013 to just 16 in 2019, as noted in the review report, due in large part to external actions by the FAA that removed the previous admissions points for graduates of Collegiate Training Initiative (CTI) schools, such as UAA.

In December of 2019 after concerted effort by faculty, administrators, and university governmental relations staff, the preference was again restored. As noted in the report, the UAA program saw an almost immediate rise in program enrollment and interest. In 2019 the program realized only $223.0 tuition dollars per SCH at a cost of $351.3 for a ratio of 63.5%. With TVEP funding supporting a major overhaul of its simulation lab, there may be opportunities to lower instructional costs as well as costs to support the labs. Overall for the review period, the program evidences excess or unused capacity, and relatively higher costs.

Program Quality, Improvement and Student Success Quality, as evidenced by the CTI designation, and the success of graduates gaining entry to the federal Air Traffic Controllers program, is high. As noted in the report the FAA limits the information it will release about graduates, but anecdotal information from our graduates suggests they do exceptionally well in the Controller program. Those seeking immediate employment as dispatchers also report doing well and local employers report these UAA graduates are well trained. Recent improvement efforts in the labs and curriculum have the potential to positively impact the program as enrollment rebounds. The most recent retention data show that fewer than half of first year students were retained. Continued attention will be required.

Program Duplication / Distinctiveness Duplication: UAA has the only Air Traffic Control program in Alaska. Distinctiveness: UAA's program is distinctive not only in Alaska, but within the US; it is one of only 31 approved by the FAA for the Collegiate Training Initiative, and now boasts one of the most up-to-date training simulators in the nation.

Commendations and Recommendations *Commendations:* The program is commended for its proactive response to previous governmental actions that hindered its enrollment. The program is commended for its substantial efforts to upgrade and revise its labs and curriculum. *Recommendations:* The program should engage with the recruitment and admissions staff in efforts to recruit students, both in and outside of the state of Alaska. The program should review and revise its schedule to minimize the number of small enrollment courses. Finally, the program should proactively monitor the progress of enrolled students, consider any potential curricular revisions to remove barriers, and offer support as needed to ensure students can complete their degrees in a timely manner.

Decision *Continued Review:* the program is required to address specific issues and to undergo another review within the next two academic years.

Submission date: 1/31/2020

Program/s in this review: Air Traffic Control AAS

Specialized accrediting agency (if applicable): Federal Aviation Administration (FAA) Air Traffic-Collegiate Training Initiative (CTI) MOU and Federal Aviation Regulation Part 65

Campuses where the program is delivered: Anchorage

Members of the program review committee:

Name	Title	Campus
Sharon LaRue	Associate Professor	Anchorage
Michael Moravec	Assistant Professor	Anchorage
Paul Herrick	Director	Anchorage

1. **Centrality of Program Mission and Supporting Role (700 words or less)**

Completion of the AAS in Air Traffic Control (ATC) has allowed many Alaskan students to obtain a lucrative job in the aviation profession including ATC, Aircraft Dispatcher, airline operations, as well as jobs not directly related to the degree.

Although the FAA is not an official accrediting body, we are an approved CTI school and must ensure our curriculum meets their yearly guidelines. In summer of 2019, our program was awarded at $90,000 grant to allow us to purchase a new radar simulator which will give our program a capability unique among CTI schools in the nation.

Our department also works closely with the professional piloting and aviation management programs by teaching their required air traffic control classes, helping student pilots understand complex air traffic control commands, answering technical questions from other faculty and staff. One ATC faculty teaches several non-ATC classes required for the professional piloting and/or management degrees. This integration with the other aviation programs is significant to the success of students in those programs.

Additionally, we added the Aircraft Dispatcher certificate component to the curriculum several years ago which must meet all requirements of CFR Title 14, Part 65. This certificate is another credential for our students and we have placed graduates in excellent jobs at both Peninsula and Ravn Airlines. The addition of the Aircraft Dispatcher credential, along with our core ATC curriculum, has provided our graduates with a direct route to Alaska aviation jobs to meet the workforce needs of the state.

2. **Program Demand (including service to other programs), Efficiency, and Productivity (7 year trend; 1400 words or less)**

Note:
In 2014, the Federal Aviation Administration removed a decades-old preferential hire agreement for graduates of approved CTI schools. This hiring change by the FAA could not have been predicted nor immediately changed by any of the CTI programs. As the FAA was the only entity hiring air traffic controllers, our numbers experienced a corresponding decline. It should be noted that the FAA was, and continues, to hire controllers at the same rate, but they were treating all applicants (including off-the-street applicants) the same thereby giving no preference to CTI graduates.

In response, our ATC faculty have been an active part of a national group, the Association of College Training Institutes, which successfully lobbied to restore the FAA hiring preference for CTI graduates. Initially the FAA was mandated to hire half of their candidates from CTI schools and veterans. As of December 2019 legislation

was enacted to fully restore the CTI preferential choice, a significant benefit for our students and accomplishment for our faculty's efforts.

It is illustrated in this report that while we were working to restore the CTI hiring agreement, we also proactively responded by revising curriculum, adding the Aircraft Dispatcher credential, and upgrading our radar lab simulator. All of these proactive steps assured that our graduates could continue to work in an applicable aviation job while the FAA hiring issues were being resolved. As we predicted, the hiring of CTI graduates is increasing and students are returning to CTI schools. We have "turned the corner" and have complete confidence we will return to our previous student levels with a much improved and unique program.

All data in this review should be viewed with this historical context in mind.

Enrollment:
As a result of the FAA hiring change the seven-year enrollment trend has been down. In response the faculty added courses that allow our students to test for the Aircraft Dispatcher certificate providing students with a marketable credential, assuring widened employment opportunities. These curriculum changes and the national efforts spearheaded by our faculty have led to trends showing improvement (as predicted) in Fall 2019 (not in the data below), when 16 new students enrolled in the ATC AAS and 3 more in Spring 2020. We have confidence this trend will continue. Additionally, we have an ATC minor for students pursuing any Bachelor's degree making them eligible for FAA hire; we anticipate the number of students pursuing this will climb as it becomes more widely publicized. As evidence, in Fall 2019, the number of students seeking the minor more than doubled and in Spring 2020 an additional 5 new students entered the minor.

Degrees awarded:
Like our enrollment trend, our degrees awarded had also decreased. However, with the renewed agreement to hire our students and the addition of the Aircraft Dispatcher classes, we are encouraged to see improvement this year. Also these numbers do not reflect those students in our minor; we have had at least four students participate in the minor in recent years, and anticipate this number growing as we publicize this option to a wider audience. It should also be noted that the attainment of the Aircraft Dispatcher credential is not a degree and therefore is not reflected in the degree data.

Student Credit Hour (SCH) production:
For the reasons stated, the SCH production trend was also down, from a high of 1191 in 2013 to 535 in 2017/18. The 2019 SCH decrease was unanticipated and represents what may be an anomalous event. Anecdotally, at that time CTC was conducting a reorganization during which our student advisor left the division during a key registration period potentially impacting the recruitment and advising into the ATC program, although this cannot be confirmed. However, with that one exception the number has been climbing since 2016, and we are confident that the changes to hiring will increase our enrollment. Additionally, we are taking steps to rebrand the program to highlight the addition of the Aircraft Dispatcher curriculum. Finally, we have taken steps to change the prefix for the dispatch courses we added so they correctly reflect in the enrollment numbers for ATC. **It should be noted that as of Spring 2020 we have reached a SCH of 573 for the year indicating that our recovery is continuing.**

Enrollment/Full Time Equivalent Faculty (FTEF):
As our enrollment decreased after 2014, so did our enrollment/FTEF, has been steadily rising to the level of 123.2 in 2017/18, with again, the 2019 decrease. While this is in part due to student increase, it can also be attributed to a reduction in adjuncts and increase in term faculty teaching load.

SCH/FTE:
After decreasing as we attempted to deal with the repercussions from the FAA's hiring change, our SCH/FTE has actually risen since 2015/16. Again, this reflects changes in student numbers but also our change in faculty compliment/workload.

Average class size:
The average class size has actually remained relatively stable to slightly increasing since the change in FAA hiring. In fact, it had increased to 11.5, it's highest in the seven-year period, in 2018. This is in part due to the

limitations we have in our simulation labs where we can effectively teach 4 students/lab for tower and 6 students/lab for radar. We are currently looking at class size caps and anticipate adjusting them to improve class capacity to accommodate the anticipated upward enrollment trend.

Internal demand:
The IR data indicates that there is a small internal demand for our program. Students majoring in Professional Piloting and Aviation Management are required to take at least one of our courses however, we assume students pursuing the minor are also part of the demand. As we are a highly technical program, we would expect the internal demand from non-aviation majors to be minimal but with increased FAA hiring the demand for the minor should.

External demand:
Most ATC AAS graduates do continue their education to a BS and it appears most do so at UAA.

Credits per degree:
The average hours for degree completion is currently 80. While high, we do have a number of students that change majors to ATC bringing with them pre-existing credits. Regardless of existing credits we will continue to evaluate methods to reduce the total number of credits through academic advising and course alignment.

Course pass rates:
Our course pass rates have remained steady at a respectable average of 94%. This is due to the quality of our faculty and using our assessment process to make improvements.

Cost/SCH:
We have 2 fulltime faculty (1 tenured, 1 term) a simulations instructor who is paid 50% from student fees and an IT technician who charges only the time he spends working on the simulators. All other adjuncts and support staff are paid from student fees. Additionally, during FY 2019, in response to the lower student numbers, our tenured faculty voluntarily took a reduced workload. While this was intended to reduce program cost one course, ATC A144, was taught by an Administration faculty contributing to the overall cost. We are looking at our cost throughout the program, including what is paid from student fees to determine if savings can be found. **It should be noted that as of Spring 2020 our Cost/SCH has decreased to $300/credit hour again, indicating that our predicted recovery is occurring.**

Revenue/SCH:
UAA's incremental tuition increases appear to be the driver for the increase in this metric. An additional driver would be the reduced enrollment as described above. We are looking at both cost and revenue and anticipate improvement in both metrics as enrollment continues to increase. With the new radar simulator we are also reviewing our lab fee structure.

3. Program Quality, Improvement and Student Success (1500 words or less)

Specialized accreditation:
Although the FAA is not an official accrediting body, we are an approved CTI school and must ensure our curriculum meets their yearly guidelines. Additionally, we added the Aircraft Dispatcher certificate component to the curriculum several years ago which must meet all requirements of CFR Title 14, Part 65.

Currency of the curriculum:
The curriculum is current, as is required by the FAA and aviation profession and evidenced by the positive results of a self-study mandated by the FAA in May 2018. Additionally, our new ATC faculty member comes to us after 12 years as an instructor at the FAA Academy in Oklahoma City. With his help we have already made many curriculum changes based on his knowledge of current practice for graduates entering training at the Academy. With this resident knowledge and our new radar laboratory, we will be the only ATC program teaching the current state-of-the-art in the nation.

Innovative program design:

As stated, we have resident knowledge and have worked with a software developer to create a unique radar lab environment that fully mirrors what is currently being taught at the FAA Academy, making the UAA ATC program unique in the nation. This uniqueness was confirmed when we began our search for the new radar lab as we found it was not commercially available. As part of the contract, due to our new faculty's exclusive knowledge of course operations at the Academy, we were able to work with the software developer to create radar simulation that no other CTI school has with both the capability for initial air traffic training and can be used for training active controllers (a potential revenue source).

High impact practices:
Our students do not currently engage in any of the high-impact practices listed in the AAC&U attachment; they do, however, progress as a cohort and move through their sequence of laboratory classes together. This cohort-style movement causes the students to bond, which is beneficial to the weaker academic members of the group. So while it is not an official high impact practice, we feel the scheduling of our classes to promote such group cohesion has a measurable positive impact on our students. Additionally, much of our learning takes place in our tower and radar simulators; such "hands on" learning definitely has an impact on student success rates, in both the laboratory and more traditionally academic classes.

As we are a CTE program, many of the high impact learning processes, such as service learning and study abroad, are not options for our students. However, we believe the extensive use of our labs throughout the program, even in the mostly academic classes, enhances our students understanding of the relationship between the academic and career environment.

Student support:
Students in the program have access to the Student Success Advisor, who is in the building and dedicated full time to aviation students. Additionally, faculty work with all students on their academic planning, especially as they complete the AAS and transition to a Bachelor's degree. Our faculty also provide significant help to near-graduation and graduates in navigating and applying for FAA controller position openings.

Student accomplishments, institutional honors, etc.:
The FAA does not provide data on success rates at the FAA Academy, where our students attend to become controllers. The FAA will not provide this information as they claim it violates privacy act standards but, anecdotally, the first student to the Academy under our new faculty and revised curriculum reported a 96% passing score, one of the highest on record. While our dispatch program is relatively new; 100% of the students who have taken the FAA certification exam have been successful. Also, a large percentage of our students' continue to the Bachelor of Science in Aviation Technology (BSAT) degree to complete a four year program. We anticipate more ATC students pursuing the BSAT as we have recently streamlined the curriculum that should allow easier completion for AAS students.

Although we do not have actual numbers, anecdotal reports indicate that our former students are highly successful in Alaska's FAA facilities. Many supervisors and managers at local area facilities are former students, including the manager of Anchorage ATC Center (the largest air traffic facility in the state), an operational manager at Merrill airport tower, and numerous supervisors at Anchorage Approach Control, and Center.

Review of distance offerings through national standards:
Only one required course in the program is offered through distance education. Although it has not been reviewed through Quality Matters, it was significantly revised last year as the faculty member teaching the course completed the Improving Your Online Course offered through Quality Matters, and used material from the online course extensively in the review process for that course. We will also be offering an additional course requirement, ATC A143, through a hybrid option in spring of 2020. If this goes well, we may move to offering that course entirely online. Additionally, one of the elective courses is also offered through distance education, as are several of the GER's required.

Program Student Learning Outcomes Assessment:

Program Student Learning Outcomes (PSLO):

PLSO 1
Demonstrate knowledge of the theory of aircraft operating limitations and performance, including methods of air and ground navigation within the National Airspace system.

- Methods used to assess the outcome
  - Average of ATC A144 quiz scores. Direct
- Key findings
  - Scores have decreased in this area in the past few years.
- Major actions taken to improve student learning and evidence of their impact
  - We have a new faculty member teaching this class whose skill set might be more appropriate for the material.

PLSO 2
Demonstrate knowledge of weather and atmospheric processes, and how each affect the air traffic control system.

- Methods used to assess the outcome
  - Average test scores from ATC A325. Direct
- Key findings
  - Scores have remained relatively stable, indicated required learning in being achieved.
- Major actions taken to improve student learning and evidence of their impact
  - None.

PLSO 3
Demonstrate knowledge of Federal Aviation Regulations (FAR) and the U.S. air traffic control system interactions, including FAA publications.

- Methods used to assess the outcome
  - Average of FAR tests. Direct
- Key findings
  - A slight decrease in scores has been observed in recent years. There was some discussion about bundling too much information on one test.
- Major actions taken to improve student learning and evidence of their impact
  - Faculty member has altered tests to address trend. The tests are now split into two distinct tests, rather than one large one.

PLSO 4
Demonstrate knowledge of fundamentals of aircraft separation in radar, non-radar, and terminal environments, as well as operating techniques of ATC facilities in visual and instrument conditions.

- Methods used to assess the outcome
  - Average of separation tests. Direct
- Key findings
  - A slight decrease has been seen in recent years.
- Major actions taken to improve student learning and evidence of their impact
  - A new faculty member is teaching the class, and tests have been altered.

PLSO 5
Demonstrate awareness of ATC industry trends, future developments, global implications, and current management practices and techniques.

- Methods used to assess the outcome
  - Average of essay scores. Direct
- Key findings

    - Scores have remained relatively stable, indicating required learning has been achieved.
- Major actions taken to improve student learning and evidence of their impact
    - After the faculty member moved to using rubrics and some upward changes were noted.

PLSO 6
Demonstrate knowledge of flight dispatcher operations, including weight and balance, flight planning, and fuel requirements

- Methods used to assess the outcome
    - Average of flight dispatch national exams. Direct
- Key findings
    - This is a new measure
- Major actions taken to improve student learning and evidence of their impact
    - This is a new measure, so we have no data as of yet.

Our assessment plan was recently updated; we are using the new plan for the first time this year. The changes we implemented were to address the addition of the Aircraft Dispatcher portion of our curriculum. We also removed the component that required any input from the FAA regarding our ATC students' performance at the Academy as the FAA is not a reliable source. We feel the new assessment measures will be more reliable. Our new plan still does rely on FAA reporting for a portion of the Aircraft Dispatcher results. These results have been shared with us in the past, but it is not always easy to get the information.

We are working on a potential improvement to solidify the flow of information between the FAA and the ATC program. This could potentially be done as part of a lobbying effort by our national association.

4. Program Duplication / Distinctiveness (300 words or less)

There is currently no other program in Alaska that offers the air traffic component of our degree; indeed, there are only 33 in the entire United States that have been afforded the CTI status. There are currently three different entities in the state offering Aircraft Dispatcher training; one in Fairbanks and two in Anchorage. However, UAA offers the only program associated with an academic degree; the others are all operated by private companies and are strictly vocational in nature. Additionally, of the two in Anchorage, one has not offered any courses in the past several years, although they still advertise for it, and the other offers only a small class once a year. Finally, this vocational route typically costs students $5,000.00 to $6,000 to complete; as such, our six-credit program at UAA is available to current and former students at current tuition rates, a significant discount.

5. Summary Analysis (500 words or less)

In the 50 years (as of 2021) of ATC instruction at UAA we have continued to improve the program, maintain our status as an FAA CTI school, expand our offerings and update our instructional labs/technology to be recognized as the school-of-choice for students entering the Air Traffic career field. The program is consistently rated in the top 3 in the nation with competitors such as University of North Dakota and Embry Riddle Aeronautical University.

To summarize the UAA ATC program:

- Maintains the requirements and yearly reviews to be a FAA College Training Initiative school, one of only 33 nationwide.
- Receives feedback that our graduates perform well at the FAA Academy and hold upper level positions in the agency both in Alaska and the nation.
- Fully aligns and supports the mission of CTC that "… builds Alaska's workforce and fosters student success through quality education and technical training." The quality of the program faculty, curriculum, and equipment is without question in meeting this mission.

- Provides pathways and stackable credentials not only through our core curriculum but the addition of Aircraft Dispatcher credentials and a minor open to all UAA BS degrees.
- Has a more highly qualified faculty than any competitor school with their decades of experience as controllers not to mention our newest faculty who has taught at the FAA Academy, the next stop for our graduates, assuring they will be top performers. One of our faculty has coauthored a new textbook on ATC which is now being accepted by competitor institutions. Additionally, our faculty are active and recognized for their leadership at the national level (Association of College Training Institutes) in developing legislation, policy, and advocacy for CTI schools and their students. Lastly, our faculty teach across disciplines supporting the Piloting, Aviation Administration, and BSAT programs.
- Has been successful throughout the years at attracting external funding for equipment acquisition and upgrade, most notably the $90,000 TVEP funds to upgrade our radar lab simulator this year. This upgrade replicates the systems used at the FAA Academy and ATC facilities, giving UAA a unique capability not found at any competitor school, which increases our potential market share. This, along with our 360º tower simulator and highly qualified support staff, will assure UAA remains state-of-the-art and the school-of-choice for students.
- Faculty are very engaged with outreach activities to include providing introductory/industry ATC talks, conducting tours, and coordinating the Girls/Youth in Aviation Days for the ATD.

When considering these accomplishments and understanding the external forces (FAA hiring practices) that have produced the fluctuations in program data, it is clear that the ATC program through its responsiveness and agility is returning to its previous metrics (as was predicted). Additionally, as the program has made investments in improvements, both faculty and technology, and has been successful in changing FAA CTI graduate hiring preferences, the increase in student numbers (already occurring) will be both accelerated and assured.