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FORUM

**A DIALOGUE ON
THE DEMISE OF COLLEGIATE AVIATION PROGRAMS**

W. Tad Foster
Donald E. Smith

ABSTRACT
(Editor's Note)

When I heard of the email correspondence between Dr. Foster and Professor Smith, I approached them with the proposal to publish their dialogue about Professor Smith's piece on the demise of collegiate aviation programs Smith (2002, p.13-14). I felt this is a good example of how the Forum encourages collegial discussion, debate and helpful interaction. The discussion is interesting regarding the schism between teaching ideals and the realities of traditional academic programs. Dr. Foster's questions are in regular font. Professor Smith's replies are italicized. Both have a summary at the end. (Ed.)

Mr. Smith,
I read your recent JAAER article with great interest. I serve as Dean of the School of Technology at Indiana State University and we are currently discussing this issue. I wonder if you would be willing to enter into a further dialogue with me on this issue? If so, I would very much like to talk about the following:

1. Much of what you wrote applies to manufacturing, construction and other technical areas. Someone with 25 years of plant management experience could make a great professor in a manufacturing management program. There are a few technical management degrees at the doctorate level, but we have found that engineering degrees take our faculty in a divergent direction. Many of our people get education degrees. However, they must compete on a comprehensive university campus. In addition, they must be able to remain professionally viable. This poses both manufacturing and aerospace faculty (as well as other technical management faculty) great difficulty.

I consider our department that most evil of terms - a trade school. I consider it that as I also would a medical or law school where experience in the classroom outweighs academic credentials. A president of another local university told me over ten years ago that his trustees were pressuring him to hire PhD's in his accounting department.

He had one of the best in the country, apparently quantifiable due to some standardized test. Retired CPA's staffed it. He predicted it would go downhill and was very upset at the trend he was being forced to start. I suppose a long-term criterion for hiring should include the college or university's promotion and tenure policies. If only PhD's are going to be promoted or tenured then experienced people with lesser degrees will simply not come and if there already, will attrite due to the policies. The word will get out and experienced people will not even apply and then logically, one would hire PhD's or support financially and time-wise, acquisition of doctorates. On the other hand, if the university community will recognize and respect these unique programs and allow promotion and tenure based upon these unique needs then hiring experienced instructors is the way to go.

2. The Ph.D.s you mention are not the only ones available. What about degrees that allow a person to focus on management, safety, quality, instructional design and other "softer" aspects of technical fields?

Our safety courses have been moved to a new department- Applied Aviation Sciences and they do indeed look for doctorates and probably benefit from them. Our Aviation Business department is also separate from Aeronautical Science and they too seek and benefit from PhD's

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although, in response to the article, I got a call from one who heads up a business department at one of our extended campus locations and he relayed that pressure to hire PhD's was killing his program that until then had been staffed with experienced managers with Masters degrees. The ensuing lack of promotion and tenure possibilities compared to the PhD's ran off all his good people to other local colleges. I and others here feel there is no PhD that would truly improve our teaching. I mentioned EdD's in the article and there are a few in the department (also with aviation experience) but whether the degree improves upon student learning and outcomes is questionable in my opinion. Those EdD's do however tend to focus more on research and that's fine. In short, other than EdD's and their insights into teaching methods and learning styles, we pretty much feel there is no doctorate that would considerably enhance this program.

3. In your next to last paragraph, you write, "They should be promoted and tenured when they have grown professionally and met the requirements of their program." Can you provide me with more information? What does this mean in practical terms? Grown as a faculty member, as a pilot, both?

Grown professionally in their field- meaning we should have a set of in-house requirements that assure us promotion or tenure in our college of aviation and not be compared to or judged by a PhD in English who thinks the be all and end all is publishing poetry books. (We don't want to judge him either...) We are currently looking at a department promotion/tenure policy that sets down what it will take in this department to be recommended for promotion/tenure, for example for Associate Professor, one article per year or an equivalent accomplishment like a type rating for scholarly activity and service on a par with other schools –committee memberships, advising, etc. Teaching, of course must be very good. The problem is selling our requirements to the poet. The coup would be to be able to promote/tenure totally within the college of aviation without a look by or recommendation from a university committee (of poets) and with rubber stamp approval from chancellor/president. In short, grown professionally should include that which contributes to better and up to date teaching, but to our standards, not those of the Humanities or Aerospace Engineering departments.

4. How does a master's degree prepare an individual to participate in various research and development activities? How are aerospace faculty prepared to compete?

First, we're not aerospace engineers, we're aeronautical science instructors. Most of us do not want to do research other than ensuring class materials are current with what's happening in the industry. We prefer technical masters degrees for the more technical courses – Aerodynamics, Aircraft Performance and Flight Technique Analysis to name a few. Again, most of us are retired military or airline pilots who just want to teach and be judged and promoted based pretty much on just that and some service. Now, if someone wanted to go out in industry and try to solve the problems of the aviation industry, a master's may or may not help as a doctorate would with research techniques, but experience probably would go a long way in understanding the problems.

5. Our aerospace faculty have requested that the following be used as their terminal degree. "The terminal degree for the AST Department shall be a Masters Degree with aviation specialization plus flight experience of 2000 flying hours; flight instructor rating, or three years of industry experience in lieu of flight hours." Is this terminal for Aviation and Aerospace higher education??

I think it is very appropriate and SACS and the CAA seem to agree. The question remains will the traditional academics, the PhD's and the poets let your people get promoted and tenured based upon the specialized needs and requirements of their department and their discipline.

6. At your institution, the most important issue seems to be teaching. At a "research intensive" university, there is more of a balance of teaching, scholarship, and service. Consequently, we are exploring a category of faculty that is typically referred to as "clinical" or "specialty" faculty so that we can focus their workload on teaching and hire at the MS level. How comfortable are you with a department that is viewed by the rest of the community as "specialty" faculty or "instructor" versus professors?

Embry-Riddle has several colleges most of which hire PhDs and ascribe to a traditional academic setting. The College of Aviation and our Aeronautical Science department up to now has been different with the terminal

degree a masters and emphasis on hiring experienced pilots. Promotion and tenure was based upon teaching and service primarily. This was during a period of time when administrators also had aviation backgrounds. The department was appreciated for what it was – a good source of safe and well trained pilots. About ten years ago a trend was started where business people were hired as top administrators and traditional academic people were placed in the upper academic hierarchy. At about the same time we started a very successful engineering program that now is nationally acclaimed. At that point, the emphasis shifted to research and a more traditional academic model for the entire university. Since Aeronautical Science instructors did not fit this mold we became persona non grata and promotions and tenure dried up. We are fighting hard to be recognized for what we do and what we are which is exactly the same as years ago in that with our experience in the industry, we are better able to produce safe and well trained pilots. So yes, we have been viewed exactly as you describe and because we are different it is an ongoing fight to gain the respect we feel we deserve from the rest of the campus and administrators. We have been number one in our field for a long time using experienced people with technical masters degrees and it is a shame others can't see through what seems to be an egotistical fog and appreciate our efforts and results.

7. Your comments to my previous questions focus on your teaching, and as a teacher educator and dean, I fully appreciate the need for you, your curriculum, and your program to be the best they can be. However, what constitutes professional development for you? How do you continue to grow as an aviator and as an educator?

There are myriad opportunities to interact with industry to stay up to date. We recently had two faculty members work with Northwest Airlines and earn a type rating in the 767. Others have sat in on major airlines aircraft systems courses, navigation courses, and new hire training programs. Others are working with several airlines to introduce or perfect upset and out of control flight training. Others are working with industry on broader based simulator flight training at the private and commercial flight level. The FAA has extended several grants. This knowledge is incorporated into the curriculum.

8. Fields grow because we continue to add to our

knowledge and skill. Is this not true for aviation science? I guess the question is, where is the science? How do you prevent your field from becoming antiquated?

As above, by working closely with the industry and the FAA. We also have several faculty members who are quite dedicated to research.

SUMMARY BY DR. FOSTER

I wish to compliment Mr. Smith for his willingness to enter into this discussion of the issues he raised in the last edition of this journal and the editor for his willingness to publish it for the readers of JAAER. I hope that others in the field will also choose to contribute to this discussion.

Mr. Smith and I agree on many aspects of this issue, but not all. He makes many significant points worthy of serious consideration and action. Essentially, this is an issue of institutional expectations versus institutional support for departmental and individual flexibility. It is also a matter of mission and equity. Can a department be afforded flexibility to develop a system of hiring, promotion and tenure, and setting faculty workloads that is equitable and supportive of departmental differences? I believe the answer is yes. However, the department must also realize that it must be supportive of institutional needs and expectations. At the institutional level, the leadership must determine and communicate its mission. They should also work collaboratively with unit faculty and leadership to develop their mission that is supportive of the institution's mission and culture. To do otherwise develops one of two situations; institutional goals will not be realized, or departments will not be supported and the department will likely not know why.

Any faculty that ignores their institutional mission and goals should not be surprised that they find upper administration unsupportive or even hostile. It would be somewhat analogous to the operations of an aircraft management team (i.e., flight crew). Flight attendants may not always agree with the captain or the airlines, but they are part of the flight team and there are specific expectations for their preparation and performance. Academic institutions are known for "academic freedom." However, that freedom is couched in terms of accountability to the citizens of their states (or their customers if they are a private institutions) and the

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perceived needs of the leadership (both administration and faculty). For private institutions, there is also the accountability to the Board of Directors and alumni, as well as the need to make enough money to secure the future of the institution.

Valuing individual and collective contributions is extremely important. Employing the best faculty possible for a particular program is also extremely important. To satisfy its multiple missions, academia must have the highest standards. Conversely, those standards must be tempered somewhat by employment realities (i.e., a reasonable supply of candidates with the ability to do the job). No one will question that a professional pilot with two degrees, many flight hours in multiple systems, and appropriate professional licenses is an aviation expert. However, once that expert enters academia, he or she is no longer primarily a specialist. Professors typically are the highest professionals in the educational community and often in their respective fields. And, as with professional licenses for the aviation industry, academia has its credentials. If, as Mr. Smith argues, there are no relevant doctorates, one could be created. However, it does seem that the Ed.D. (as well as others) could be made to serve quite well, especially if it prepared the individual to function as a scholar/practitioner of the highest level.

In his response to one of my questions, Mr. Smith wrote, "I mentioned EdD's in the article and there are a few in the department (also with aviation experience) but whether the degree improves upon student learning and outcomes is questionable in my opinion. Those EdD's do however tend to focus more on research and that's fine. In short, other than EdD's and their insights into teaching methods and learning styles, we pretty much feel there is no doctorate that would considerably enhance this program." We often hear, "I just want to be a good teacher!" However, one quickly finds that everything changes and what one is able to teach and how one teaches is no longer relevant. The parade moves on. A professor must have the tools for self-renewal to remain at the leading edge. Education is needed in the preparation of pilots; it is equally necessary in the preparation of university faculty. What is missing from this understanding is that the doctorate is primarily about preparing to become a scholar (i.e., a researcher as well as a practitioner.) It is a starting point, and to function effectively, our professors will either get that preparation as a part of a doctoral program or they will have to get them on their own.

Mr. Smith and others contend that the aviation field is not able to attract interested candidates to the professorate for a variety of reasons. However, they do so with anecdotal data. To date, I do not believe it has been proven (i.e., with supporting data) that the field of aviation sciences is in jeopardy of extinction because of a dearth of interested faculty. For example, at Indiana State University, as a result of circumstances, I believe we may have stumbled onto a possible solution to this issue. In the past five years, we have hired three faculty; all three possessed Masters degrees at the time of hiring. For a variety of reasons, the first two were hired on temporary contracts and were informed that a tenure-track position was possible. As the program continued to grow, tenure-track positions were created and both individuals were selected; both immediately entered a doctoral program. One of these individuals now has a doctorate and the other is working on his dissertation and should be completed in the next six months. As with other universities, the promotion and tenure requirements at our university have continued to increase. Consequently, last year when we were not able to hire a candidate with a doctorate, we intentionally entered into a conditional three-year contract to allow the chosen candidate the opportunity to complete at least 30 hours beyond the Master's degree before we move this person to a tenure-track position (this will happen automatically if the conditions are met). As Dean, I have suggested that it would be most beneficial for individuals to be ABD before we change their status. As one might guess, it is incredibly difficult to be a full-time professor while trying to complete a doctorate. Therefore, we can "protect" this position and the new professor, while giving that person a good job with a good salary, and the support that person needs to succeed in a doctoral program. It is not ideal, but our current approach does demonstrate that alternative models of preparation are possible.

I agree with Mr. Smith that it is possible to create differentiated staffing plans that include a variety of faculty types. However, I also believe it is necessary for universities to maintain the highest standards possible. In addition, it is also necessary to work out a staffing system that provides equity (i.e., in terms of workload, compensation, promotion and tenure, and the like) for all faculty regardless of type. The issues are complex and daunting (for a report on one example, please see a recent article in the Chronicle of Higher Education on Western Michigan's staffing model).

By no means have Mr. Smith and I covered all aspects of this complex issue, but this is a good start. Again, I thank Mr. Smith and the Editor for the opportunity to explore this issue further.

SUMMARY BY PROFESSOR SMITH

It was a pleasure corresponding with Dr. Foster and especially to have the opportunity to meet him in person and better understand his views of the issue.

He is correct in his summary regarding institutional goals and the need for academic growth. Unfortunately there have been too many examples of good collegiate aviation programs gone sour when institutional goals were changed from providing safe and well-trained pilots to becoming traditional academic centers of research. Smith (2002, p. 14.) Academic credentials and the attendant source of revenues these academics could bring to the university through research grants became the institutional goals. Doctorates were required for these goals. The aviation programs withered on the vine in that environment and mind set. This was unfortunate because there were other traditional academic programs at these universities that were ostensibly filling that traditional role. There was room for a 'different' course of study with different goals but myopic administrators and academics apparently could not conceive of such an animal and the 'bar was raised' with enrolment drops and crumbling programs the result. Dr. Foster is also on point with the concept of creating a doctoral program in the field of aviation. This would be a long-term ideal that would solve many problems. This is being discussed on several fronts including Embry-Riddle. Aviation professionals who have entered the academic field would probably embrace the opportunity to pursue doctoral studies in their career field, especially if it could be done 'in-house.' This would have significantly greater appeal than having to attain some unrelated doctorate just to have

a doctorate in order to survive. The down side to such a degree is individuals with no aviation experience acquiring the degree in which case, I feel the same argument holds that the classroom environment would suffer if these folks were teaching instead of experienced individuals. One does have to complement Dr. Foster's efforts at bringing on new personnel and prior to putting them 'on the tenure clock', ensuring they are established in a doctoral program. Sadly, they must do that to survive and without a doctorate in their career field, one would wonder how their doctorate would assist in the classroom.

The common sense approach to having aviation experience onboard also extends to the students. A cursory survey and study at Embry-Riddle Aeronautical University revealed that the students overwhelmingly prefer instructors with aviation experience to those with higher academic credentials. (See the accompanying article in this issue.) My personal discussions with students have revealed that a majority is adamant on the subject of having experienced aviators teach them and seriously question how an unrelated doctoral degree could offer them anything. Underlying my premise is what goes on in the classroom. Universities always espouse in some form or another excellence in teaching but the bottom line goals make this a myth especially in collegiate aviation programs and probably in law, medical and seminary programs as well. One would expect pilots to train future pilots, as one would expect qualified medical doctors to teach medical students, etc. in these specialized hands-on fields. But, as Dr. Foster wrote, "We often hear, "I just want to be a good teacher!" However, one quickly finds that everything changes and what one is able to teach and how one teaches is no longer relevant." Teaching takes a back seat to grant acquisitions, research and doctoral quests. The researchers, if they have a class load at all, use student assistants to teach their courses. Teaching and students suffer under this mind-set, especially in the aforementioned fields of study. →

Dialogue

W. Tad Foster holds a doctorate in Technology Education and Counseling Psychology from the University of Illinois-Champaign. He is currently in his fifth year as Dean of the School of Technology (SOT) at Indiana State University. In this position, he provides leadership and has administrative responsibility over five departments that offer A.S. through Ph.D. degrees; two buildings with approximately 30 laboratories; approximately 40 faculty and 25 professional and support staff. In addition, he oversees the Technology Services Center, the university's Division of Printing, and the Air Force ROTC Detachment. Dr. Foster is the author of two booklets and over 20 professional articles. He regularly speaks at professional conferences annually. In addition, he serves as a reviewer for the *Journal of Industrial Teacher Education*, *The Technology Teacher* and the *Journal for Technology Education*.

Donald Smith holds a Master of Science Degree in Aeronautical Engineering from the United States Naval Postgraduate School and a Bachelor of Science Degree in Naval Engineering from the United States Naval Academy. He is a graduate of the National War College and the Navy Top Gun Fighter Weapons Course. He is currently an Associate Professor of Aeronautical Science at Embry-Riddle Aeronautical University where he serves on the Senate Faculty Development and Benefits Committee and on his department's Curriculum, Tenure and Strategic Planning Committees. He is a coach of the Embry-Riddle Crew Club. He was the first mayor of the city of DeBary, Florida. His flying experience includes twenty years with the United States Navy flying fighter aircraft and first officer on the Boeing 727 with Eastern Airlines. He also served as the Defense Attaché to eight West African countries for two years where he piloted a Beechcraft Super KingAir on diplomatic missions.

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