AAS IN AVIATION -- PROGRAM DESCRIPTION

1. Briefly describe the proposed new program. Please indicate if it is (a) an expansion of an existing program or a new program; (b) a cooperative effort with another institution, business, or industry; or (c) an on-campus or off-campus program. Attach any formal agreements established for cooperative efforts.

(a) Montana State University—Great Falls College of Technology proposes a new program, an Associate of Applied Science degree in Aviation. The program will prepare professional pilots by providing aeronautic "ground school" courses and general education classes to supplement practical training provided by approved commercial flight schools. Students who complete the course of study will have an AAS degree from MSU—Great Falls College of Technology, which, combined with their commercial flight certificates, will qualify them for entry-level jobs and a desirable career ladder in the aviation industry.

(b) The relationship between MSU-Great Falls and the commercial flight schools approved for the flight school components of the program may be either "loose" or "tight." The two models are not mutually excusive and may be applied to different schools as appropriate.

A loose relationship does not involve a cooperative effort between the College of Technology and any particular business or industry. Instead the Aviation Program Director approves private providers of flight school training for the flight school portion of the program, using criteria established by the Aviation Program Advisory Council. Students may then pursue flight school training from the approved private provider of their choice. Upon verification of the student's receipt of each individual flight certificate the college grants credit for the course.

In a tight relationship, MSU-Great Falls would enter into a contract with flight schools that meet the criteria established by the Aviation Program's advisory council and in accordance with the total contract value rules of the state procurement act. (A sample contract is appended to this document.) The contract specifies the terms and conditions under which the flight school must deliver its portion of the program content. As in the loose relationship, upon production of individual flight certificates by the student, MSU—Great Falls grants credit for the corresponding course.

There are three courses to be completed through a commercial flight school. Combined, they represent 7 credits of the 61-credit degree program.

AVS 142-Private Pilot (50 flight hours)	2 credits
AVS 242-Commercial/Instrument I (75 flight hours)	2 credits
AVS 252-Commercial/Instrument II (125 flight hours)	3 credits

Although costs of instruction at commercial flight schools vary, students should expect to pay a total of $22,000 or more for training leading to all three flight certificates.

(c) The AAS in Aviation will become the third academic program the College of Technology provides in Bozeman, joining the AAS in Computer Technology and the certificate program in Office Technical Support. The program is unique, however, in that it will originate in Bozeman and at least initially be offered only in Bozeman, instead of in both Bozeman and Great Falls.

2. **Summarize the needs assessment conducted to justify the proposal.**

The program has been developed in response to (a) projected needs for commercial pilots, (b) the demand experienced by flight schools in the Gallatin Valley, and (c) the popularity of aviation classes offered at Montana State University – Bozeman.

a. Under pressure for increased transportation capacity and speed, the aviation industry has expanded in the past 20 years. This expansion, combined with the retirement of half of the pilots currently working for commercial airlines projected in the next ten years, guarantees a high demand for trained pilots. During the Vietnam era and for some time afterward, aviation jobs were filled primarily by ex-military personnel. This career path has changed dramatically, and most aviation jobs now require a college degree, along with flight certificates, even for entry-level positions.

b. Flight schools across the nation are in high demand and flight schools in the Gallatin Valley are especially popular. **(details would help)**

c. "Ground school" classes in aviation offered by MSU-Bozeman since 2001 have averaged 29 students per section with enrollment as high as 55 and as low as 6 for advanced classes. In September 2004 twenty students signed letters of interest in an AAS degree in Aviation. Of that number, 75% wished to enroll full-time and 85% indicated that they were aware of the costs of flight school.

Other individuals likely to enroll in the proposed program include those who already have a related degree or are employed in civil engineering, resource extraction or aerospace technology; those interested in rapid entrance to the aviation field; or persons employed in agriculture or in corporate positions that would be enhanced by aviation skills.

3. **Explain how the program relates to Role and Scope of the institution as established by the Board of Regents.**

Preparing students for entry-level positions in high-tech, high-demand fields is central to the mission of MSU-Great Falls College of Technology. Aviation, with its emphasis on technology and high-demand employment, is an appropriate extension of the institution's mission.

A student completing the proposed program will have all the credentials required to pursue a career as a professional pilot. Job opportunities range from high-profile

occupations as pilots for a national carrier to less well-known, but in-demand work as pilots for cargo planes, air taxis, media aircraft, corporate jets, and spacecraft. Jobs can be as diverse as traffic reporter or test pilot.

Because the aviation industry places high value on experienced pilots with solid amounts of flight experience, entry-level salaries tend to be low, hovering around $20,000; however, salaries rapidly increase as pilots gain experience. A survey of aviation job sites on the internet indicates experienced pilots make an average of $60,000 with some job categories, like test pilots, major airline pilots and corporate pilots making $100,000 or more.

4. State (a) what effect, if any, the proposed program will have on the administrative structure of the institution. Also indicate (b) the potential involvement of other departments, divisions, colleges, or schools.

(a) The AAS in Aviation will become the third academic program the College provides in Bozeman and will be academically organized in the College's Department of Business and Technology. In order to provide the appropriate administrative oversight for this program, as well as the College's expanded offerings in developmental programming, workforce preparation programs, and customized training in the Gallatin Valley, the College will employ a chief operations officer for its Bozeman operations (CBO) in July 2005. This administrative position will report directly to the Dean of MSU—Great Falls College of Technology and will be represented on the College's Academic Council. The Aviation program, in turn, will be directed by a half-time program director reporting to the CBO. As with all the College's workforce preparation programs, an Aviation Program Advisory Committee, comprised of representatives from the aviation industry in Montana, will provide appropriate input from the field.

(b) Of the 61 credits in the program, 21 are part of the College's current offerings in general education and computer technology. The College will rely on its Arts & Sciences Department, its Business and Technology Department, and its office of distance education to support those credits in the degree. In addition, whenever courses at MSU fulfill these requirements, students will be encouraged to take them.

5. Describe the extent to which similar programs are offered in Montana, the Pacific Northwest, and states bordering Montana. How similar are these programs to the one proposed?

Currently over 100 schools nationwide offer aviation programs culminating in associate's or bachelor's degrees. The specific model proposed by MSU—Great Falls, relying on commercial flight schools for the acquisition of flight certificates, is common because of the expense involved in acquiring and maintaining flight facilities. Indiana State University in Terre Haute, Indiana, has offered a program similar to the proposed one for over twenty years, consistently enrolling between 90 and 100 students every year. A number of flying and non-flying programs in aviation science are offered by colleges in nearby states, with the closest one in Bismarck, North Dakota. Only one similar degree program is offered in Montana, a bachelor's degree in Aviation offered by

Rocky Mountain College in Billings. This proposal was sent to Rocky Mountain College on April 2004, to ensure that the proposed program did not unnecessarily duplicate Rocky's program and to explore possibilities for articulation of the College's AAS degree program with Rocky's bachelor's degree. A preliminary conversation between institutions occurred, and contact was renewed in September 2004. As of this writing, however, Rocky Mountain College has made no formal response to the College's inquiry.

6. Please name any accrediting agency (ies) or learned society (ies) that would be concerned with particular program herein proposed. How has this program been developed in accordance with criteria developed by said accrediting body (ies) or learned society (ies)?

The proposed program has been designed to meet the standards for accreditation by the Northwest Association of Schools, Colleges and Universities. It has the appropriate number of credits for an Associate of Applied Science degree, as well as a strong representation of general education course work within the degree.

Aviation programs may also be accredited by the Council on Aviation Accreditation in Auburn, Alabama. While not required, such accreditation is a desirable external validation of program quality, which the College intends to pursue once the program is established. The CAA does not consider accrediting a program until after the first class has graduated.

7. Prepare an outline of the proposed curriculum showing course titles and credits. Please include any plans for expansion of the program during its first three years.

Proposed Curriculum Outline: Associate of Applied Science Degree in Aviation

First Semester:

AVS 141	Aviation Fundamentals	3	
AVS 143	Basic Air Navigation	3	
AVS 142	Private Pilot Flight (50 flt. hours) *	2	
CS 110	Intro to Computers (or challenge exam)		3
MATH 150	Math for the Liberal Arts *(or any math course in the Montana University System general education core)*		3
	Total Credits		14

Second Semester:

AVS 171	Aircraft Systems	3	
AVS 241	Advanced Navigation Systems		3
AVS 242	Commercial/Instrument flight I (75 flt. Hours)*		2
AVS 243	Instrument/Commercial Theory I		3
AVS 261	Aviation Safety	3	
CS 120	Internet Essentials		2
	Total Credits		16

Third Semester:

AVS 255	Instrument/Commercial Theory II	3	
AVS 250	Aviation Operations	3	
AVS 252	Commercial/Instrument Flight II (125 flt. hours)	3	
PHYS 130	Fundamentals of Physical Science	4	
COMM 130	Pubic Speaking/		
COMM 135	Interpersonal Communications		3
	Total Credits		16

Fourth Semester:

AVS 261	Flight Instructor Theory		3
AVS 262	Advanced Aircraft Theory	3	
PHYS 110	Survey of Natural Science	3	
AVS 263	Aviation Regulations and Professional Conduct		3
ENGL 121	Composition I	3	
	Total Credits		15
	Total Credits in AAS Program		61

**Students may take flight training at any point during their course of study that is convenient to them, and some may enter the program having already completed flight training. If they have not completed flight training, the sequencing of courses in this outline is highly recommended. In addition, although certain specialty flight courses (e.g., floatplane, gliders, tailwheel, mountain flying) are not required and do not carry academic credit, students may wish to take them to build flight time and gain familiarity with various types of equipment.*

FACULTY AND STAFF REQUIREMENTS

1. **Please indicate, by name and rank, current faculty who will be involved with the program proposed herein.**

No current faculty will be involved with the proposed program, although general education and computer technology courses may be delivered by faculty currently teaching on-line course work for the College. These faculty have been hired in accordance with Board of Regents guidelines for minimum qualifications of faculty and have received graduate-level course work designed to increase their skills in teaching on-line.

2. **Please project the need and cost for new faculty over the first five years of the program. Include special qualifications or training. If present faculty are to conduct the new program, please explain how they will be relieved from present duties.**

Part-time program director/faculty - $22,891 annually
Adjunct faculty - $6,000 first year, $9,000 year two and after

3. **Please explain the need and cost for support personnel or other required personnel expenditures.**

No new support personnel are needed at this time. As mentioned in 4(a), above, in order to provide appropriate administrative oversight and support for expanded operations in Bozeman, the College will employ a chief of operations and an administrative assistant for its Bozeman programming in July 2005. However, the costs associated with the hiring of these individuals are not part of the expenses needed for the AAS in Aviation.

CAPITAL OUTLAY, OPERATING EXPENSES AND PHYSICAL FACILITIES

1. Please summarize operating expenditure needs.

Expense	Year One	Year Two	Year Three
Travel	$1,000	$500	$500
Communications	$2,000	$500	$500
Materials and Supplies	$7,000	$2,200	$2,500
Library	$2,000	$2,000	$2,000
Rental	$1,000	$2,000	$2,500
Repairs and Maintenance	$500	$500	$500
Miscellaneous	$500	$500	$500
Total	**$14,500**	**$8,200**	**$9,000**

2. Please evaluate library resources. Are they adequate for operation of the proposed program? If not, how will the library need to be strengthened during the next three years?

The proposed program will draw upon the library resources of MSU-Bozeman. A survey of the aviation collection by Sheila Bonnand, Library Director at MSU-Great Falls, revealed the presence of over 1,600 related items. However, close examination of the collection indicates that many of these items are government documents of limited utility and many others are outdated. Proper support of the program would require the purchase of new materials estimated at around $6,000 spread over the first three years of the program.

3. **Please indicate special clinical, laboratory, and/or computer equipment that will be needed. List those pieces of equipment or computer hardware presently available in the department.**

Appropriate specialized equipment, including flight simulators and aircraft, will be among the criteria used to approve flight schools for the program. Other computer and lab equipment will be available through the Bozeman Tech Center and/or through Montana State University.

4. Please describe facilities and space required for the proposed program. Are current facilities adequate for the program? If not, how does the institution propose to provide new facilities?

The program requires two or three normally equipped classrooms for lecture style course delivery. There are two options for providing the space needed:

(a) The Bozeman Tech Center has classrooms and computer facilities for both the distance delivery of general education courses and the face to face aviation classes.
(b) MSU-Great Falls and Montana State University are currently reviewing facilities to house MSU-Great Falls' expanded programming in Bozeman. These facilities, when available, will house the Aviation program.