

Fall 1994

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Mitchell, F. G. (1994). Success in Aviation Education: A National Survey of Secondary Aviation Magnet Programs. *Journal of Aviation/Aerospace Education & Research*, 5(1). Retrieved from <https://commons.erau.edu/jaer/vol5/iss1/4>

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FORUM

SUCCESS IN AVIATION EDUCATION: A NATIONAL SURVEY OF SECONDARY AVIATION MAGNET PROGRAMS

Frank G. Mitchell

In 1925, Galt High School in California established the first recorded public school flight-training program. The flight and aviation education offered there quite likely represents the first application of aerospace education to the magnet school concept in the United States.

Moreover, in 1936 the first whole-school aviation magnet program was established at Aviation High School in Long Island, New York. Today that school continues an aviation education program with the largest enrollment of any aviation magnet school.

In view of the long-term involvement of aviation education with the magnet school concept and because of the dramatic increase of magnet school programs over the past decade, the Federal Aviation Administration (FAA) has sponsored three National Aviation Magnet School Conferences between 1991 and 1993. The conferences were held to identify the kinds of aviation magnet school programs that have been developed and to exchange information with school districts interested in developing aviation magnet programs.

One result of the conferences has been the completion of a national survey of secondary aviation magnet schools, designed to identify the number and location of such programs and to investigate the factors in their success or failure.

The completed survey identified 34 secondary magnet schools offering some kind of aviation or aerospace technology program. The survey contact list was based on a magnet school grant listing furnished by the U.S. Department of Education and a separate listing of school contacts provided by the FAA. Additional schools that attended the three FAA conferences also were contacted.

All secondary schools included in the final report were confirmed by obtaining descriptions of their

curricula in addition to their answering a detailed questionnaire.

The survey indicated a dramatic increase in secondary schools with aviation magnet programs compared to just nine schools identified in an earlier FAA survey conducted before the 1991 National Conference.

Survey findings indicated strong and growing enrollments in the programs and lower than normal dropout rates. All programs surveyed had a general emphasis on responding to community and industry needs in career education. Probably the most impressive conclusion from the school surveys is that the leaders in the programs, whether teachers or administrators, appear to be highly pro-active and very involved in promoting the program to the students and the community.

The survey addressed six major areas; the highlights follow:

PROGRAM CHARACTERISTICS

Schools responding to the survey ranged from the 58-year-old Aviation High School program to a relative newcomer, Catalina High School, established in 1993 in Arizona. Of the 34 secondary schools identified, 18 started their programs in the 1990s and 11 were vocationally oriented.

The 10 schools reporting the largest enrollments were Aviation High School, Long Island, with 1,900 students and 165 faculty, and Walter F. George High School, with 150 students and three faculty. The other schools had up to 118 students and one to four faculty.

All schools reporting a trend indicated increased enrollment, with one school, Highland Springs, noting its female enrollment has increased from 10% to 35%.

Most of the schools receive their funding from a combination of state and local sources. Two schools reported they had received substantial state grants to

start their programs and one school started with federal grant money.

PROGRAM ORGANIZATION

When asked about the main issues addressed in establishing their programs, most schools emphasized a response to community/industry needs for technically skilled graduates. As a result, their curricula are built around careers mainly local in nature. Other issues of concern were motivating students to stay in school and promoting integration.

CURRICULA

Curricula at these schools emphasized meeting state academic requirements and providing hands-on aviation training. The number of courses offered ranged from one to 11. The kinds of courses included transportation services, airframe and powerframe mechanic training, career survey, and pilot ground and flight training.

One school, South Mountain, had developed a very complete instructor curriculum guide covering all courses offered and including goals, prerequisites, learning objectives, and evaluation standards for each course.

Technological support for the schools varied. Most schools used a variety of audio-visual programs. Several use simulators and computers to enhance their courses.

EVALUATION

Most established programs reported low dropout rates—some less than 10% and several under 5%. The newer programs seem to have higher dropout rates, particularly in the first student year.

Although no schools reported a formal evaluation or tracking system for their graduates, a number of schools did suggest a variety of measuring sticks, including FAA written test results for students working on aviation ratings, an annual review of enrollment racial distribution, tracking students after graduation on a one-year follow-up, and other informal ways such as scholarships awarded, college enrollment, and students who return for visits.

RESOURCES

Not surprisingly, the FAA was the single most-cited government resource used by the schools. Many relied on the local Air National Guard for speakers, equipment, and facilities. State departments of transportation also were used as resources.

Industry and business tie-ins ranged from service on advisory committees to co-op partnerships that combined jobs with earned school credit. Several schools have established programs in which specific companies mentor all students in the aviation program. Other arrangements are made with businesses and government agencies, for whom students perform summer work on a work-study basis. One regional airport commission provides internship programs in airport management.

Most of the respondents were doing some kind of tie-in with feeder schools and local colleges. Several promoted their schools by visits to local elementary and middle schools.

In general, the schools that described having active advisory committees, including a mix of government and business members, also mentioned using a great variety of available resources, such as field trips, equipment, volunteers, external program training, speakers, and donated materials.

COMMUNITY AWARENESS

The schools reported various strategies to promote their programs in the community. Washburn High School attempts to get media coverage for school events such as helicopter landings on the football field and small hot-air balloon launchings. Many schools routinely provide programs to local civic clubs. One school promotes itself with a display at the local mall.

Many schools assertively recruit minorities. Highland Springs Technical Center uses a three-part strategy that includes:

1. Using minority role models in the aviation industry to speak to middle and high school groups.
2. Encouraging minority students in the program to invite their friends to classes and on flights.
3. Including minorities in all publicity photos and brochures.

Washburn High School works with professional aviation organizations, including the Negro Airmen International, to spread the word about its program.

Several schools mentioned that they hold Career Day events, host FAA safety seminars and other adult education programs, place local TV and newspaper articles, mail newsletters and press releases, take field trips, and host open houses.

CONCLUSION

When asked to specify the primary advantage of a secondary aviation magnet school to a community, most respondents mentioned the opportunity for students to get a quality education while exploring careers and developing skills.

The survey also uncovered some unique opportunities available from the aviation magnet schools not associated with other programs, such as taking flight training, or specialized computer training in aviation

applications, or specific training for industry jobs requiring FAA licenses, such as aviation mechanics.

Finally, the survey showed that these schools offer experience in partnership arrangements between the school, government, and business organizations that are not available in typical high school programs. These arrangements, in the words of the Walter F. George High School survey response, "Encourage students to develop competencies necessary for lifelong learning and to become effective workers and citizens."□

Frank G. Mitchell has been involved in aviation education for 30 years. He directs Beech Aircraft Corporation's aviation education programs and Marketing training programs for the Beech retail distribution organization. He serves as chairman of the General Aviation Manufacturers Association and University Aviation Association Education Committees.□