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THE FLORIDA GOVERNOR'S COMMISSION ON SPACE: ITS IMPACT ON SPACE ENTERPRISE

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ABSTRACT

At the Kennedy Space Center, on 28 May 1987, at the Second Briefing Meeting of the East Central Florida Space Business Roundtable, Florida Governor **Bob Martinez** signed an Executive Order creating the Governor's Commission on Space. This action followed the Roundtable's initiative to the state dating from September, 1986, suggesting the formation of the Commission. On hand to deliver the keynote address was Dr. Gerard K. O'Neill, a former member of the National Commission on Space. Dr. O'Neill's presence was no accident, since the purpose of the Florida Commission is to define Florida's role in the continued development of many of the concepts outlined in the National Commission's watershed report, Pioneering the Space Frontier. The Florida Commission identified nine topical areas for further research, and its work is still in progress. A number of legislative recommendations have already been presented to the Governor, while the final report is not due until June, 1988. This Commission, and several similar efforts in other states, is indicative of the strong interest nationally in the development of space enterprise.

INTRODUCTION

In September, 1986, the Board of Trustees of the East Central Florida **Space Business Roundtable**, Inc., directed its Executive Director to approach the state government in Tallahassee regarding the possibility of creating a state-sponsored "commission on space". A series of letters and telephone interviews led to a meeting between the author and James A. Vevera (representing the Roundtable), and John E. "Jeb" Bush, the Florida Secretary of Commerce, and members of his staff, which took place in

¹ The author is an Adjunct Lecturer and Researcher at Florida Institute of Technology, and is a member of the Florida Governor's Commission on Space. The views presented in this paper are solely those of the author, and do not necessarily reflect the views of the university or the full Governor's Commission on Space.

April, 1987, in Tallahassee, Florida. Upon favorable recommendation of the Secretary, Florida Governor **Bob Martinez** signed Executive Order 87-81 on 28 May 1987, during a ceremony held at the Kennedy Space Center, Florida. Upon signing the order, Governor Martinez stated that, "Five hundred years ago, it was by sea that we sought out new discoveries and new opportunities. Now, it is going to be through space that we seek out our opportunities".

Keynoting the event (which was the Second Briefing Meeting of the Florida Roundtable, held in conjunction with the NASA Kennedy Management Association), was **Dr. Gerard K. O'Neill**. This was particularly appropriate, since Dr. O'Neill was a leading member of the presidentially appointed **National Commission on Space**, whose report inspired the creation of the Florida Commission.

THE PURPOSE OF THE COMMISSION

The purpose of the Florida Governor's Commission on Space (FLAGCOS) is to recommend to the governor and the state ways in which the state government, university community, and industry within the state can lend **support to and derive benefit from** the continued development of space enterprise. From the Executive Order:

"It shall be the responsibility of the Governor's Commission on Space to develop for the governor a **comprehensive, yet achievable**, set of recommendations regarding ways Florida business, education, and government could work in partnership to make Florida even more competitive for space industry jobs and investment. These recommendations are to be based on analyses of the likely future course of space industry development as well as the assets and liabilities affecting Florida's ability to take best advantage of that future course The final report shall cover, among other topics: Florida's historical role in space exploration and industry; current conditions in the space industry; the likely future demand for space-related facilities, goods, and services; appropriate goals of Florida's space industry initiative; and a list of **specific recommendations** for enhancing the state's leadership role in space activities" (taken from the Florida Executive Order 87-81, as quoted in Vevera and Morgan, 1987, emphasis added).

THE COMMISSION'S WORK AND RECOMMENDATIONS

At its first meeting in Orlando, Florida, on 17 August 1987, the Commission identified nine topical areas for further research in support

of its work. Each area was assigned to a "task group" of the Commission. By subject area, these task groups address: (1) the current economic climate in the state, (2) the future of space activity, policy, and operations, including a market forecast, (3) aerospace industry currently based or operating within the state, (4) factors which will attract new business to the state, (5) conditions and programs to assist start-up businesses, (6) current educational strengths and weaknesses in the state, as they relate to space-oriented research, (7) the overall impact of space activities on the state, (8) the impact future space activities could have on specialized segments of the state's economy, such as tourism, and (9) what other states and regions are doing in regard to promoting space development.

Each task group was responsible for conducting meetings and research as required to provide source material and background information to the full Commission for consideration in the development of its recommendations, and to the staff of the Department of Commerce for the production of the final report of the Commission.

One of the most important items facing the Commission at the outset was the question of national space policy and the future space market. The Commission recognized that its efforts could only be supportive of the national policy if that policy was understood. Further, the direction of the national space effort - including military, civil, and private commercial activities - needed to be discerned if the Commission was to recommend ways in which the state's governmental, educational, and industrial organizations were to position themselves to take advantage of future activities.

The task group responsible for this item (led by the author) produced a conceptual framework of definitions which has proven useful in describing potential space market. Of particular usefulness is the division of the broader space market into the areas of "space-derived products" and the "space infrastructure". These are defined as:

space-derived products - products or services which are produced in space, made possible through space-based facilities, or developed through the application of space-derived technology.

space infrastructure - facilities and institutions which directly support space operations.

The space infrastructure was deemed to be of particular importance

to Florida by the Commission, and its structure was outlined in greater detail as follows:

Earth-based Processing Facilities - includes payload processing facilities, launch and recovery processing facilities, vehicle and equipment test facilities, and all other Earth-based ground support facilities which exist to support space operations.

Space Transportation Elements - the actual vehicles which provide transportation to, through, and from the space environment, including:

Launch Vehicles - liquid, solid, and hybrid rockets, expendable and reusable, manned and unmanned.

On-orbit Transportation - orbital transfer vehicles, apogee kick motors, tethers, electric propulsion devices, and others.

Return/Re-entry Vehicles - vehicles which enable the physical return of products and cargo from space, including manned and unmanned vehicles.

Extra-terrestrial Facilities - support facilities which are similar to the Earth-based "ground support" facilities, which are not Earth-based, including:

On-orbit Facilities - space platforms, stations, and production facilities, orbital refueling stations; includes manned and unmanned platforms.

On Other Worlds - support facilities which are based on other planetary bodies, the Moon, and asteroids.

Institutional Support Base - the segments of society which make up the environment and manpower which supports space operations, including:

Policy Making Bodies - government agencies, legislative, executive, and judicial, advisory committees, corporate consortia, and multi-national entities.

Industrial Support Base - industrial organizations and capability to conduct complex operations.

Education, Training, and Research Facilities - academic institutions, research centers, vocational and technical organizations.

(This conceptual framework is taken from Morgan and Garcia, 1988).

This framework could prove useful to other efforts as well.

In the context of this framework as a basis, the other task groups of the Commission have particularly addressed the areas in which Florida: (a) has a particular strength, (b) has an obvious weakness, (c) can use space activity as a means to improve conditions generally, or address other problems, and (d) plays a significant role in space activity already.

A major portion of the Commission's work has been devoted to addressing educational and university-based research efforts. While the final recommendations are still under consideration, the Commission has developed a plan which will foster the creation of a number of "**space centers of excellence**" in state and private universities throughout the state. Planned to be headquartered at the University of Florida's Space Science Institute (FSSI), the Commission has developed the concept of an "**Institute for Space Science and Technology**". This organization would coordinate space research at the topical space centers of excellence throughout Florida, in a manner somewhat analogous to the California Space Institute (Calspace). Aside from UF's FSSI and the Space Astronomy Laboratory, the only significant space-oriented research of any magnitude is being conducted by the Florida Institute of Technology, at the newly created **Space Research Institute**, and at the University of Central Florida, through several independently managed research projects in engineering and space policy.

A number of the Commission's recommendations have also addressed the topic of vocational-technical training of interest to contractors at Kennedy Space Center. It is important to recall that while advanced research is important to the future of space development, much of the work being performed at Kennedy Space Center is done by electrical, electronic, hydraulic, and chemical technicians, among others. The state's community college system could play a significant role in training individuals for such work.

The Commission has also considered Florida's role as the "space launch capital of the world". The Commission has taken note of the fact that, historically, Florida has been seen as the "gracious host" from which payloads (developed out of state) were launched on vehicles (designed and built out of state), with the research and development work in support of the nation's space effort being conducted elsewhere (Garcia, 1988). By addressing the university research community directly, the Commission hopes to encourage a growth in space-oriented research being conducted, which it hopes will lead to future economic development, as well as providing greater opportunities for students in Florida universities.

To further address the development of an industrial base in proximity to the nation's primary launch complex, and to provide a mechanism for future economic development resulting from increased university research, the Commission has considered the establishment of some type of "**space development authority**" or "**Florida Spaceport Authority**" (Morgan and Garcia, 1988). At its meeting on 9 February 1988, the Commissioners voted to recommend a six-month, \$500,000 study of the

feasibility of such an organization. Such an organization would be directly in line with recent national policy statements, as outlined in a White House fact sheet on the new space policy, released 11 February 1988. (In fact, several Commissioners argued in favor of recommending the immediate establishment of such an "authority", but the study was recommended instead. It is interesting to speculate what the recommendation would have been if the White House policy statement had come only **two days** earlier! See White House, 1988.)

Another area of study has been the development and support of space-oriented entrepreneurial companies in the state. The Commission has recommended that a portion of the state's already substantial high technology assistance, economic development, and state industrial marketing funds be devoted specifically and programmatically to space-oriented ventures, and space industry promotion.

As of this writing (early February 1988) not all of the Commission's work has been completed, nor have all of its recommendations be fully discussed by the Commission. In fact, the final report is not due until July 1988. (The author will discuss additional recommendations and findings of the Commission at the Space Congress presentation. The Commission will be meeting in Miami, Florida, on 14 April 1988, shortly before the Space Congress.)

SIMILAR EFFORTS

The Florida Governor's Commission on Space is not the only such effort underway in the United States.

The **Texas Senate Space Science and Industry Commission** was also formed in May 1987. Chaired by Texas State Senator J.E. "Buster" Brown, the Texas SSIC boasts such prestigious members as **Maxime Faget** (Space Industries, Inc.), **Dr. Hans Mark** (Chancellor, State University System), **David Hannah** (Space Services, Inc. of America), and others. The Texas Commission is a "standing committee" of the Texas Legislature (even though non-legislators are members of the Commission), and, unlike the Florida Commission, is permanent in nature. The purpose of the Texas Commission is to "move the Senate into the area of space science development in the state with the hope of being able to demonstrate that Texas is going to take a positive and leading role in this country in the field of space science" (Texas Commission, 1987).

The state of Hawaii is also in the midst of a major study effort on the development of space industry in that state. The Hawaii Department of Business and Economic Development has contracted with

Arthur D. Little, Inc. for a feasibility study, which was completed in August 1987. In brief, the study concluded that Hawaii was well positioned to capture a significant share of space industry, including the possible development of a Hawaii-based space launch facility to serve the small to medium launch vehicle industry (see Arthur D. Little, 1987).

Virginia is also conducting a similar study, but details on their effort were not available in time for inclusion in this paper. While not an American project, the territory of **Queensland, Australia**, is in the process of developing a space launch capability at the Cape York Space Launch Complex in northeastern Australia.

CONCLUSION

The work of the Florida Governor's Commission on Space, and indeed, the efforts similar to it worldwide, indicate that:

- space activity and space enterprise has the **broad interest and support** of many people throughout the world, including people who are willing to **"think interplanetary" but "act locally"**
- space activities need not be the **exclusive province of national governments**, yet national (and international) policy makers need to provide a supportive environment for the development of space enterprise;
- private industry, and local and regional and regional economic development organizations can play an important role in the future development of space enterprise, through providing local, tangible support for space-oriented businesses.

Such activities are in keeping with the recommendations of the National Commission on Space (NCOS, 1986), the Business Higher Education Forum (BHEF, 1986), and the Ride Report (Ride, 1987), all of which called for a greater team effort between national and local governments, private industry, and universities, in support of the realization of the full benefits of space development. In an era of constant pressure on the national budget, such efforts which will provide more financial resources from state, local, and private sources, will become even more important.

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