Development of an Analog Planetary Base

By: Annie Wargetz, Graduate Student

The Planetary Exploration Initiative is in development at the John D. Odegard School of Aerospace Sciences. Students and faculty in the Department of Space Studies, along with other UND departments, are constructing an analog planetary (Moon/Mars) simulation base with an Inflatable Lunar Habitat (ILH), electric rover, and spacesuits. The ILH has been designed so it can be relocated to any place of research interest and current plans include deploying the base in several locations throughout the United States, with the first tests being conducted in North Dakota. The ILH will support four crewmembers for missions lasting up to 30 days. The electric rover and pressurized spacesuits will allow for simulated planetary missions up to 20 miles from the base.

The design and construction of the analog base’s different components was completed by UND students under the direction of Pablo de León and the team collaborated with several North Dakota universities and NASA centers. After the initial testing of the analog base is complete, the Department of Space Studies will open up its use to national and international institutions who may be interested in joint research.

With this project, the team is developing a comprehensive research program as an analog for long-duration human space missions. More information can be found at http://human.space.edu.
SMS and You

Unless you have been completely out of touch with the aviation industry for the past couple of years, you have likely heard the term ‘SMS’ bandied about on occasion. You may have even gotten a primer on SMS in Aviation 100, and your ground and flight instructors may have talked about the importance of SMS in your flying, or future career field. And, of course, you know that UND now offers a 300 level course in SMS. But, you are probably still asking yourself, “What does SMS do for me personally?”

Let’s start by looking at the SMS document, which Publications has online at learn.aero.und.edu, and the four SMS components: Safety Policy, Safety Risk Management, Safety Assurance, and Safety Promotion and Culture.

First of all, SMS stands for Safety Management System. SMS is not unique to the aviation industry. In fact, it is becoming the preferred means of safety management in critical industries such as medical, mining, transportation and shipping, and the oil and gas drilling and refining business. It is defined as a top down, business-like approach to managing safety. This means, instead of each individual within the organization deciding what safety will mean to them, the standards and expectations are set by the highest level of management—in our case by the Dean of UND Aerospace. His statement of safety, commitment and accountability is found on page 1-1 of the SMS document. Management, students, and everyone in between are expected to comply with those standards.

Just what are these standards, and where can they be found? The first of the four SMS components is Safety Policy (page 1-3.) This section discusses both organizational and personal responsibilities for ensuring safety. In addition to the SMS document these standards include Aviation Safety Policies and Procedures, Flight Operations Handbook, Anti-Drug Program, Training Course Outlines, Aircraft Standardization Manuals, manufacturer’s aircraft operating handbooks, and Federal Aviation Regulations. Other areas of the operation such as Maintenance, Line, Records, and Dispatch, also have Standard Operating Procedures and other documents and practices specific to their operations.

The intent of SMS Safety Policy is to ensure that everyone within the organization is operating from the same playbook. The obvious benefit is that the results achieved, whether in flight training, maintenance, academics, line, or other operational areas, are consistent and repeatable. Without this, each aviation 102 course might be teaching something different, or a flight instructor might say “I know what the stan manual and TCO say, but I think my way is better”. Another benefit is that it is easier to identify and correct safety anomalies when they occur, if the organization adheres to well thought out safety standards.

Take a few minutes and read through the Safety Policy section of the SMS document. It provides a detailed description of the benefits of SMS. Next time we will discuss the second component of SMS, Safety Risk Management.

Fly safe.

Frank Argenziano
Assistant Director, Aviation Safety

ATTENTION AVIATION STUDENTS!

2012 1098-T Information

Effective 2012, Aviation flight costs will now be included in Box 2 of the 1098T with other tuition and fee charges. Aviation Students will no longer need to obtain this information from Aerospace.

If you have questions on your 1098T information, call Student Account Services at 701-777-3911

Answers to Test Questions:
1) B    2) C    3) B
November Winners

Flight Instructor of the Month
Arthur Denny

"What I noticed first about Arthur that made him a unique instructor, in regards to professionalism, was his personalized email that he sent to his students prior to the first meet. In this email he took the time to give us a background on where he came from, how he got to instructing at UND, and what he expects of us as his students. In addition, what also sets Arthur aside from other instructors is his lack of tolerance for unprofessional behavior. Moreover, with this attitude Arthur ensures with confidence that when all else is well, there's no reason the course shouldn't be completed. I admire this confidence and reassurance. All being said, Arthur Denny exhibits the personality of a great instructor and mentor."

Student of the Month
Dylan Lemmon

"I Dylan is the kind of student that reminds me why I love flight instruction. He is the most motivated student I have ever worked with. On a routine basis, Dylan shows up for our flights with all the material for the lesson studied. He treats every lesson with equal importance and it is clear that he sees his training as a vital step toward his career goals. When we fell behind in 221 due to weather, there were no complaints from Dylan, only added motivation. From that experience he has come to 222 with even more motivation and we have completed on average four lessons per week, putting him ahead of template. Flying with Dylan is the highlight of my work day and I know his motivation and knowledge level will allow him to go wherever he wants to go in this career field."

Lessons from the King

Winter Tips

1) Warm up the engine at 1000 to 1200 RPM unless it is necessary to reduce RPM to keep from exceeding the oil pressure red line; or have individuals preflighting directly behind your aircraft. Don't consider taking off until the oil temperature has stabilized at least at the bottom of the green.

2) When taxing, be aware of patches of ice.

3) On landing, plan to use minimum braking and when taxing through snow since warm brakes melt any snow upon stopping. The moisture may refreeze, locking the brakes.

4) Always get a complete weather briefing and perhaps an update before your proposed flight.

5) Cross country – always file a flight plan.

6) Meet the FAR/UND fuel requirements – a little extra does not hurt.

7) Bring a cell phone and carry your winter survival gear.

8) Avoid known or forecast icing conditions. An approaching warm front has the potential for low ceilings, snow, and multiple freezing levels.

9) Be certain the engine breather tube is not frozen closed.
Want to continue with a M.S. in Space Studies?

Space Studies offers a Master of Science degree requiring a minimum of 33 credit hours. This interdisciplinary program studies the implication of human-kind's entry into space: the scientific, political, legal, and social impacts, on a national and international level, that are associated with the evolutionary development of a new extraterrestrial frontier. Also emphasized are the environmental and resource management possibilities afforded by the new information from Earth remote sensing satellites. The Space Studies program at UND will give motivated students a working knowledge of the overall picture so they can become the planners, managers, researchers, troubleshooters, negotiators, and communicators of space.

The Master of Science in Space Studies is designed to prepare the student for positions in both the commercial and government sectors of the rapidly growing field of space exploration, development and settlement. Careers in the space community encompass all backgrounds, not just a few technical areas. Federal and state government agencies, aerospace companies, entrepreneurial firms, educational institutions, and the media all need people with good managerial and communication skills and a working knowledge of the full scope of space activities.

For more information about Space Studies call us at 777-2480 or visit us at Clifford Hall, 5th floor. Check us out at space.edu.

Aviation Majors—Two semesters of a foreign language are no longer required

Yes, the rumors are true. Beginning with the Fall 2013 catalogue, aviation students (including airport/aviation management) will no longer be required to take two semesters of a foreign language. To replace this requirement, students will have to have a total of nine credits in the Arts & Humanities category, with three coming from Fine Arts. The new catalogue will be available by the end of the Spring semester. This change will only affect students that have officially switched to the new catalogue. If you would like to change your catalogue, you may do so at any time throughout the semester simply by meeting with your advisor. Be mindful though that once you change to a more current catalogue, you cannot switch back to an older catalogue. Changing catalogues is just an option; it is not recommended or required by anyone. For any questions, please contact your advisor.
In March, I saw on my school website about an internship with American Airlines. Since I needed something to do over the summer, I applied. If I wasn’t offered a position, then I would have just stayed in school for yet another summer and completed another couple of classes to graduate sooner. Thinking back, applying was one of the best decisions that I could have made to further my career. Of all of the summer vacations that I have had as a student, this has been the most fun, interesting, and rewarding one. It feels like just yesterday that we were in that conference room on the 3rd floor of the Flight Academy in Dallas getting our orientation. Also, all of the staff that I have met throughout this summer have been some of the best enthusiastic people I have ever come in contact with.

After the orientation, it was time to fly back to New York to really start getting involved. I met the flight office staff at JFK on the first day, and they showed me where everything was and told me I can help myself to anything that I wanted. So, in the spirit of trying to learn everything I can before I no longer have access to it, I took some operating manuals and started learning about some of the aircraft’s systems. Then after I went to ground school for the MD80, I came back knowing way more than I ever thought I would.

During this internship, I went on airplane delivery flights, observations of the fleet and international ground school, tours of ramp towers and ATC towers, had brown bag lunches with very important, powerful people within the company, obtained simulator time in the Boeing 777 Level D Simulators, and many more. I have learned more about how one of the biggest airlines in the world operates than some can ever dream of. Being based in the New York flight office, I had access to essentially three airports within the area, and each one has their own way of operating which is very interesting to see from behind the scenes.

“Applying was one of the best decisions that I could have made to further my career”

Overall, this internship has been an amazing experience that has solidified exactly what I want to do in a couple of years. I really want to wish future interns the best of luck (and also to soak in everything like a sponge). I also want thank everyone that I have met at American Airlines, from the CEO Tom Horton and Vice President of Flight John Hale, to the baggage handlers, ramp agents, maintenance workers and every other worker that has helped me develop the best experience of my life.

-Brian Lee

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**32nd Annual Conference and Career Fair**

April 18-19

This event is FREE and open to the public. The conference will be held on Thursday, April 19th and Friday April 20th. The career fair will be held ONLY on Friday April 20th. For more information, reference the SAMA website: [http://sama.aero.und.edu](http://sama.aero.und.edu)
From the Editor

The Student Aviation Advisory Council is having one busy semester with a bunch of projects that we are working on. We are currently trying to get a printing kiosk installed in either Odegard Hall or the Link that all aerospace students will have access to. Also, we are looking into the feasibility starting a coffee stand, similar to the one put on by the Management Club in Gamble Hall.

One of our goals this semester is to see more collaboration among all of the majors within the aerospace college. Have an awesome idea that you’d like to see put into action? Let us know! Stop by our office and chat with us as well. You can also submit suggestions either on our website dropbox, or in the box outside our office!

How can you get involved with SAAC? Students are always welcome to join us during our weekly meetings. Towards the end of April, we will also be opening applications to join the council. All students that apply will get to interview for an officer position. Watch for our advertisements in April!

Amanda Pearson
Public Relations

Get Involved!

The North Dakota Student Chapter of the American Meteorological Society is comprised of students who all share an interest in the weather and climate. Our purpose is to promote the education and interest in the atmospheric and related sciences, as well as build relationships among students that share a common interest in these areas.

We have exciting opportunities for anyone interested in joining. Some activities are outreach oriented, such as visiting elementary school classrooms or organizing events such as storm spotter training seminars. We also foster camaraderie among our members through various social outings and an annual weekend trip in the spring. There is no educational requirement; we encourage students of any major to consider joining.

We are a great organization to join if you are interested in the weather. We offer opportunities to hone your organizational skills in planning and executing activities as well as a great group of friends to have fun with! Check us out at www.facebook.com/undams or www.undams.org.

Students interested in joining can email Justin.Weber@my.und.edu for more details. Our membership dues are $25/yr. Membership includes a ticket to the Atmospheric Science Department’s spring banquet, which is highlighted by an exciting keynote speaker ($22 value).

Spring 2013 SAAC Officers:
President – Christopher Brauckman
Vice President – Aaron Olson
Secretary – Dalfred John
Treasurer – Miles Laffitte
Public Relations – Amanda Pearson
Technology Chair – Nick Rocci
Student Outreach – Brent Eastes
Events Coordinator – Christian Smith

ALL Students are invited to our weekly meetings
Sundays at 4pm in Streibel Hall