



Just before dawn: The still waters of Lago Llanquihue (Chile's second largest lake) reflect the early light and Volcan Osorno.



What do you know about the world and how do you know it?

Reading about a place is one thing, but experiencing it first-hand imprints on the the mind more indelibly the realities of a location; the sights, the smells, the tastes, the sounds, and the feel of the culture. Over Spring Break, eight Midshipmen immersed themselves in Chile's culture and in technology during the Drones & Defense in Chile LREC.

LRECs (pronounced "El Rec") are one to two-week Language

Proficiency, Regional Expertise, and Cultural Awareness trips sponsored by generous donors through USNA's International Programs Office. CDR Josh "Tree" Dittmar, an Aerospace Engineering instructor with a passion for languages, culture and drones served as the faculty representative, having previously led an LREC Drontur (drone tour) to Norway this past summer. For Drontur Chile, Midn 1/C Yair Abramoff acted as team lead, coordinating itinerary ideas and team planning sessions.

Besides cultural and language immersion, Dronetur Chile had two main objectives. First, to learn about Chile's use of drone technologies in humanitarian and disaster response scenarios and their potential defense capabilities. Second, to use drones to capture images and videos of the country's diverse beauty. Throughout the trip, midshipmen also had the opportunity to practice their Spanish skills in the wild and experience Chilean culture through exploring multiple regions of the country.

"No there is too much, let me sum up." Inigo Montoya The Princess Bride

After a long flight to Chile's capital city, Santiago, the team experienced warm weather and a welcoming, upbeat environment. Santiago is a modern city, built with families in mind. Among tall skyscrapers, there are also many parks and green spaces scattered throughout. Unlike many urban parks in the U.S., these parks are full of life from dawn to dusk. Kids are free to run and play with skateboards, soccer balls, or on the jungle gym. The warm weather brought out runners, yoga practitioners, group Zumba classes, basketballers, footballers, BMX bikers and skateboarders. Santiago's vast city parks provided a great location for the team to conduct the first drone flights of the trip.



The Dronetur team enroute Volcan Osorno from left to right: Midn 3/c Quinn "Manzana" Schneider, Midn 2/c Ethan "Tranquillo" Marcello, Midn 2/c Adam "Mariposa" Fischer Midn 2/c Jake "Dinero" Girard, Midn 1/c Xebastian "Slowbas" Aguilar, Midn 3/c Kevin "Rojo" McCarthy, and Midn 3/c Alejandro "Dropito" Bello, Midn 1/c Yair "Maleta" Abramoff, and CDR Josh "Arbol El Sir" Dittmar

Before leaving Santiago, the team met with two drone technology organizations at the U.S. Embassy; one working on solutions to help public servants (firemen, police, etc.) during

disaster relief scenarios (WeRobotics Flying Labs and DroneSAR Chile) and one pioneering the use of Artificial Intelligence to analyze drone data and maximize the utility of the data provided by drones (Innervating Technology). Dr. Mauricio Orellana (WeRobotics Flying Labs) gave a great imperative for their work in Spanish *“Chile es un laboratorio de desastre natural.”* His colleague, Dr. María Díaz translated *“Chile is a natural disaster laboratory”* and added *“We have every type of natural disaster except cyclones and Godzilla.”* Their statement has been proved out with many large wildfires, earthquakes, hurricanes, landslides and volcanic eruptions occurring within Chile’s borders in recent history. Winners of the AUVSI’s Humanitarian Xcellence Award in 2018, Dr. Orellana of DroneSAR Chile also talked about the challenges and advantages of incorporating drones into search and rescue scenarios and disaster response events. Innervating Technology CEO Ian Hughes discussed his technology company start-up and their efforts to maximize data gained from drones using artificial intelligence and smart mapping methods. The meeting, hosted by Dr. Jeffries, the Science Director for Office of Naval Research – Global, also gave the midshipmen a view into the role of funding and sharing of basic research around the globe as a way to remain abreast of scientific and technical advances.



Sunset viewed from above: If you are ever in Valpo, stay here at the Sheraton Miramar.

After two days in Santiago, Drontur headed to Valparaiso, a maritime city west of the capital where the team visited the Chilean Naval Academy (Arturo Prat Escuela Naval) for a meal and campus tour. German-trained, the cadets have some interesting traditions including

goose-stepping in parades. *"I would actually starve there,"* Midn 3/C Quinn "Manzana" Schneider exclaimed, *"the cadets have to eat fruit with a fork and knife."* The Chilean cadets were very welcoming, and excited to share an afternoon, stories and experiences with the team. Some cadets having previously spent a semester at USNA were already good friends with members of the Drontur team, prompting joint reminiscence about times together in Annapolis. The Chileans spoke with pride of their Naval history, especially of Arturo Prat, a naval hero in the War of the Pacific, still remembered for his valor, leadership, and sacrifice in battle. A demonstration of the Chilean ship simulator, proved to be quite similar to the USNA's ship simulators, with the exception of the speeds used by the American Mids, full throttle! One Chilean cadet was overheard saying, *"Twenty-three knots, we never go that fast!"* Midn 1/C Xebastian Aguilar also learned that the system was rigged to transmit live RF on real frequencies. *"They didn't tell me I was actually transmitting on Channel 16,"* he said laughingly. The last stop on the tour was of the utilitarian dorms, with ocean and city views. The most startling revelation of the cadet's living arrangements was that all but the seniors are required to roust themselves from bed at 0600 daily and plunge through a gauntlet of only cold water showers. Midn 2/C Adam Fischer aptly noted that *"their school seems to be much more challenging in a military sense, while USNA is more academically rigorous."*



The Dronetur Chile Team



The two Chile LRECs with our hosts



Midn 2/c Jake Girard, Midn 1/c Yair Abramoff and Midn 1/c Xebastian Aguilar try their hand at driving a Chilean warship - fast!



Midn 2/c Adam Fischer,, Midn 1/c Yair Abramoff and Midn 3/c Kevin McCarthy with our hosts in Chile.

Following a visit to talk drones with a professor at the local technical university, the team discovered the magnetic sand dunes of Concon before heading back to Santiago for a two-hour flight south to the lakes region. Arriving in Puerto Varas and Chiloe, the northernmost bounds of Patagonia, the team had great weather and incredible locations to fly drones such as: the shores of Chile's second largest lake Llanquihue, the slopes of an active stratovolcano Volcan Osorno, the wide rocky Pacific beaches near Cucao, near Chiloe's famous wooden stilt houses (*los palafitos*) and around brightly painted wooden churches in Castro.



Dunes at Concon: If you like getting wet and sandy this is your place! Helpful Note: sandboard rental is not available during weekdays.

The students really bonded together as a team and learned many different things about the culture and each other. Since not all members spoke fluent Spanish, some had to learn to be comfortable with their language missteps, a key to language learning. Owing somewhat to an island mentality, cut off from the west by the Pacific, the East by the Andes, the South by Patagonia, and to the North by Atacama, Chileans speak far less formal Spanish than in many other Latin American countries. They have many Chilenismos (slang words) that have crept into everyday speech, that are hard for even native Spanish speakers to understand. *"I was actually surprised that their Spanish was so different,"* Midn 3/C Alejandro Bello, a native Spanish speaker observed.



Look closely and you can find our Nissan on the rock-strewn pacific coast on Chiloé.

Two interesting Chilean expressions were “po” and “ya.” Po is appended to the end of nearly every statement in much the same way as a Canadian might utter “Eh?” It was likely a corruption over the years from “Despues” to “Pues” to “Po.” Owing to a large German immigrant population in the south of Chile, the other expression “ya” was used much like a German “Ja” to signify “ok” instead of the traditional Spanish meaning “already.” *“This was my first-time in a Spanish speaking country”* Midn 2/C Jake Girard remarked, *“and it has really ignited in me a desire to learn more.”*

Interactions with locals provided mids with an excellent way to improve their Spanish and learn more of the Chilean culture, such as trying exotic foods, such as octopus in its own ink, learning about wine, observing families in the park, dancing salsa, and playing basketball. *“I learned a lot about the Chilean culture, they are very group oriented instead of individualistic and very flow versus time oriented.”* said Midn 2/C Ethan Marcello.



Midn 2/c Jake Girard ponders exploring the ice chasm on Volcan Osorno, while Midn 1/c Xebastian Aguilar and Midn 3/c Kevin McCarthy wisely caution against it.

Then all too suddenly, Drontur Chile came to an abrupt end, with a return flight to Santiago, and a brief overnight in the capital before returning to the Academy. The smells of hot empanadas, sounds of latin beats, and sights of brightly colored towns and majestic landscapes had all faded, but the spark had already been lit in the imagination and hearts of the team. Chile is an amazing place, full of wonderful people and beautiful scenery. A planned return was already on their minds. Viva a Chile!



Boats sit on the mud in front of the palafitos during low tide near Castro, Isla de Chiloe. Photo by Midn 3/C Quinn Schneider