

Col. Benjamin Alvin Drew

Embry-Riddle Prescott Spring 2012 Commencement Address

Dr. Ayers, Dr. Bloom, distinguished guests, faculty and staff, parents, families, guests --Good morning. You! The ladies and gentlemen of the class of 2012, the graduating class from Embry-Riddle's Prescott and world-wide campuses, congratulations and welcome to you, the 269 newest members of this long blue and gold line!

Where will you explore next? What adventures await you? What tall tales will you have for one-another at your reunions in 2022, 2032 and yes, even in 2042? I've stockpiled a few tall tales of my own as I come up on the 28th anniversary of my graduation. This one I'll call, "Alvin and the thunderbolt..."

It's the morning of February 24th, one year ago, a clear warm breezy morning at Cape Canaveral – not a cloud in the sky. I wake up at the decadent hour of 7:30 in a windowless dorm room – quarantine, a minimum security prison for astronauts. After a short medical exam and breakfast, I pack three bags. One for our return to Florida, a second for a divert-landing at Edwards AFB in California, and a third bag in case we made an emergency abort landing in France or Spain – you've got to have clean underwear wherever you go. Our crew puts the final touches on our crew notebooks, jam information on to our personal thumb drives and hand them over to the technicians who will pack them away on the space shuttle discovery.

At 11:00 we have lunch. I pick a meal easy on my digestive system. The first few hours of being weightless gave me butterflies last time so I figure it's best to take it easy. Then we have our weather brief. Weather is "go" at the cape for launch, "go" for abort landings in Spain and France, and "go" for emergency de-orbit at Edwards. Time to suit up. We and our suit technicians go through the practiced ritual of stuffing us into our orange pressure suits, helmets and gloves and pressurizing them until we look like parade balloons, all this to test for leaks. Pressure checks passed – we deflate the suits and sit in over-sized leather barcalounger chairs until it's time for cards. (yes cards)

You can't go to the launch pad until the commander loses a game of 5-card draw. It's a tradition that dates back to the Gemini program. So there we are, in our orange space suits with our commander Steve Lindsey dealing cards. He loses out on the third hand and off we go to the astro-van. We emerge from crew quarters, the official name for our penitentiary of the previous week, to a roaring crowd of spectators and press. "keep your waves from the elbow forward. Don't block your crew mates faces." We hop into the 1983 airstream motor home with genuine wood paneling and plug into cooling units for our hot heavy suits. No rookies on this crew, so Steve can't pull his, "everybody got their security badge?" Trick at the launch tower gate. He'd go so far as to print up bogus badges for the rest of the crew to produce before his hapless mark. It always worked best when there was more than one rookie. That way one rookie could also produce a badge, and play along with the trick.

At the pad, the space shuttle, its 27 foot diameter external tank and 150 foot tall solid rocket boosters – the stack -- groans and hisses. It's alive! Steaming jets erupt from it as liquid oxygen and liquid hydrogen boil off and vent in the Florida heat. Armies of technicians fuss over every square inch of this ponderous structure as tall as the statue of liberty and weighing more than 200 tons. Can this thing really fly? In four hours, it'll be 100 miles up going 17,500 mph – more than 10 times faster than a speeding bullet. And that is a sobering thought on this day. Nicole Stott -- Daytona Beach class of 1987 -- our mission specialist-4, asks us all to huddle around her for a quick prayer. Then it's off to the elevator and up to the 195-foot level of the launch tower.

I am last to board the shuttle. I sit out for 30 minutes, 195 feet up, in a glorious breezy Florida winter afternoon, looking down the coastline, prank dialing my friends from the tower telephone until I get called into the white room, a fancy sheet-metal box enclosure where the suit techs dress us up in the harnesses that hold our emergency equipment. Finally, I crawl awkwardly through the side hatch of Discovery to my seat on the flight deck. Terra incognita: everything is on its back, and nothing looks familiar in spite of the thousands of hours I've spent in shuttle cockpits and mock-ups. Forward is now up and up is now behind. I swing gingerly over my seat and lower myself on to my parachute pack. The suit techs finish strapping me in, and I am compliant as a kitten, lest I jostle or kick something important. For 3½ hours we lie on our backs listening to the chatter over the launch control intercom channels. "v1103, page 226, step 74 complete..." we go through our carefully choreographed communications checks – our first opportunity to sound stupid on NASA TV, and then we begin our own checklists with nine minutes of countdown remaining. The pilot Eric Boe connects Discovery's fuel cells (batteries) so launch control can unplug the shuttle from ground power, then he starts the auxiliary power units – three motors that turn the hydraulic pumps – power steering for the shuttle. It's eerily quiet. Except for the six of us, there is no one within 3½ miles, and even they sit in an armored vehicle in a bunker. The whole stack shudders and rumbles as the autopilot and flight control computers move the rudder and the engine gimbals.

T-2 minutes. We close and lock our helmet visors and open the oxygen lines to the suits. At t-10 seconds, our navigation instruments come alive and four seconds later the three main engines, on the shuttle's boat tail, start with a crescendo of base like 10-million subwoofers stampeding up the stack to engulf you.

T-0: the solid rockets light and you are off – a 2.5 g shove down into your seat. You try to keep the shock and awe suppressed as best you can. There are critical systems to monitor, critical calls to make, critical performance milestones to meet. Did I mention that it's a critical time?

T+2:15: we are engulfed in flames as the booster separation motors blast away the solid rocket boosters at an altitude of 140,000 feet. We are climbing straight up at Mach 5, and the sky is somewhere between midnight blue and pitch black. For the next 6 minutes we climb along an arc that peaks out around 365,000 feet and then we actually descend (briefly) and accelerate while mission control tersely calls up our abort options and we echo them. "two-engine zaragoza, press to meco, single-engine zaragoza..." we get lighter as our 5 million pounds of fuel burns off, but the rocket thrust remains the

same. We are a dragster – accelerating another 60 mph every second – 3 g’s. I’m having trouble breathing as my wind pipe deforms under the load. Then abruptly, we rebound against our seat straps. Everything is floating. A loud thump reverberates through the cabin as explosive bolts separate the external tank. The attitude control jets wake up and thunder like mortar fire. It’s almost 5:30 pm and it’s finally time to go to work. We are in space.

That’s one giant leap! I might have done that once, just to cross it off the bucket list, but I would not have done it a second time unless I had a sense of mission, a purpose for this high flying adventure. This time, like the last time, the mission was to construct and outfit the international space station – our research laboratory in orbit, 250 miles above. In a greater sense, we are helping to prepare the footings and foundations of the platform that we will leap off of to go explore the solar system. This is what drives me. This excites me more than that wild rocket ride, more than the two spacewalks that were in front of me. There’s got to be a sense of service in it. I come from communities with mottos like “that others may live”, “service before self”, and “men for others”. I’ve felt driven to fly since before I started kindergarten. The trick was to find a way to follow this passion and make a constructive contribution of this. Anyone who has ever felt called to this endeavor that we call aviation, knows that in your calling that there is service. Listen, find quiet moments to calm your mind and listen -- to hear your calling – it doesn’t always shout at you like mine did to me. And when you finally hear, follow that call – far easier said than done. There is no sound so scary to me as opportunity knocking at my door. So how do you muster the gumption to step off? First: be prepared, success (or luck) is nothing more than the coming together of opportunity and competence, and opportunities abound like fish in the sea. If you aren’t finding opportunities, then maybe your net (your competency) isn’t as broad or strong as it should be. You have learned a craft here; now master it. Mastery will net you opportunities and give you the confidence to pursue them. Second: be bold. Nothing great has ever been accomplished in a prosaic state of mind. Never loiter in your comfort zone. Trust in yourself and the tools you have been given; and finally be of service. Find the good for humanity, your neighbors, whatever you do. A sense of purpose will sustain you long after the novelty of your adventure has worn off.

One parting word – abracadabra. It supposedly comes from either the Aramaic phrase for “I create as I speak”, or the source I prefer to believe, the Hebrew phrase *Abreq ad habra*, “hurl your thunderbolt, even unto death”. I love that phrase! “Hurl your thunderbolt, even unto death”. Aviation is not for the timid. Each of you, new members of our blue and gold line, go and find your thunderbolt, and when you do, go and let the world feel you thunder so long as you live. Congratulations, now get out there!