Story of a Record Flight — Leo Benetti-Longhini

Much of this narrative was originally submitted to the FAI (Fédération Aéronautique Internationale) and NAA (National Aeronautic Association) as part of the required documentation for some aviation record applications.

Late in the afternoon on a Friday in mid-July of 2004, after being chased across half the Lone Star State by ground crewman David Glover, I had the privilege of completing an 8.5-hour distance flight in a sailplane by landing safely at Sweetwater Airport in Texas. The sailplane, aptly registered N-210DU for Silent 2 serial No. 10, was flown in the FAI Class D-U glider category and it's flight documentation has been submitted for two world and three US records in its class. Several people involved with the adventure have pointed out that the events preceding the distance attempt are also worth mentioning; the narrative thus includes background events before presenting the details of the actual flight.

In 2003 Gary Osoba (himself a holder of multiple D-U class records) and I began discussions about preparing a pure glider version of the Silent 2 motorglider with the specific intent of attempting distance flights in the FAI's D-U ultralight glider class. This is the lightest class of four available FAI sanctioned glider record classes, the other three being 15m (D-15), World Class (D-W), and Open Class (D-O). Our initial discussions matured into plans with the Alisport factory in Italy embracing the idea of building a pure sailplane version of the Silent 2 prior to it being marketed to the soaring community.

By the spring of 2004 the Alisport factory was building the new glider with the intent of having it in the US for flight performance testing in May followed by distance attempts from the World Record Encampment (WRE) at Zapata, Texas in June and July. However, much like one of Ed Kilbourne's humorous soaring songs about ordering the latest glass ship, the scheduled departure was affected by some container booking problems and the glider ultimately arrived at the logistics warehouse in Baltimore on June 24th, a mere day before the Sailplane Homebuilders Association (SHA) Eastern Workshop in Ridgely, Maryland. Since Gary was already in Zapata helping to set up the WRE, the mission to retrieve the glider from the warehouse in Maryland (and still attend the SHA workshop), haul it to home base in Tennessee, squeeze in the condition inspection, perform the weight and balance, have a certificate of airworthiness issued, modify another trailer, fly off the test hours, and hit the road to Texas all in less than a week, went to overdrive. Help! I think this is an appropriate time to mention some of the efforts (and give recognition) to certain individuals for their generous and openhanded assistance prior to actually getting the glider to Zapata (I'll talk about the people at Zapata later). Their acts highlight the great goodness in the aviation community and are gestures I cherish.

Fellow pilot Paul Huskey headed out with friend Jeni Pannell on Wednesday trailering the Silent 2 motorglider to the SHA meet 700 miles away (ultimately making it to Maryland in the early morning on Friday due to an alternator failure late Wednesday night in the remotest part of Virginia, but that is another story). We were then able to link up at Baltimore Airport and head across the Bay Bridge to another enjoyable SHA Workshop in Ridgely. On Sunday after the SHA event we headed to the logistics warehouse and, with the indispensable assistance of Tim Donovan (also a Silent 2 motorglider pilot), we hastily uncrated the new Silent 2, temporarily transferred it to the emptied trailer so that Paul and Jeni could immediately head back to the Volunteer State, and reluctantly left the unprotected motorglider in the forklift-populated warehouse for a few days. Paul and Jeni made it safely back to Tennessee on Monday afternoon and thanks to the marvel of jet travel I caught up with them that evening after a day of business in Baltimore. That night, using extra hangar space provided by Jim Chapman, we assembled the new glider for the first time while trying not to drool too much. By Tuesday morning, graduate student and UTSI Glider Club president Brian Robinson departed for Baltimore with a now empty trailer to retrieve the motorglider while that evening A&P towpilot Corey Gillard assisted with the weight and balance using a precision digital scale provided by Dick Butler. The glider came in at 128kg (281 lbs) and was within a pound of the official factory measurement. On Wednesday Roy Smith of Vanderbilt Life-Flight performed the aircraft's initial condition inspection and Dr. Uwe Peter Solies of UTSI signed me off on the aircraft checkout (for insurance purposes). By noon Thursday the milestone Certificate of Airworthiness was issued by a local DAR and a frazzled Brian was back from Baltimore with the motorglider. The rest of the day was jam-packed with other tasks: Ernest Finney of

Finney Machine Co. released the reins on machinists Dennis, Daniel, Nathan, and Jeff to make temporary modifications to a trailer borrowed from Blake Miller of Minneapolis (a gracious and very needed loan since the motorglider trailer was already committed for other events and our budget for the distance attempts simply did not permit a new trailer). Within three hours the trailer rigging gear was masterfully converted to temporarily accept the new Silent 2 and we were back at the airport in the early afternoon.

Dick Butler came over in his C-180 and flew all the aerotows in order to accomplish the necessary test flights before nightfall. FBO lineman Steven Sipe, realizing that the towcar had been on the highway virtually non-stop for the past couple of weeks, stepped forward before we began the test flights and insisted on changing the vehicle's oil, doing so while the flights were in progress. How thoughtful can a young FBO lineman and future pilot be? With test flights completed, the rest of the evening and the wee hours of the morning were dedicated to a multitude of small details and gear packing. By mid-morning Friday I was on the interstate headed west through Nashville with destination Zapata (located on the Mexico border 50 miles south of Laredo) about 1300 miles away. Every second fuel stop required a ritual crawling under the towcar to top off the 4x4's transfer case with gear lubricant via large syringe. The vehicle had started weeping oil from the transfer case two weeks earlier when fellow pilots Daniel Schur and Paul Huskey had driven to Minnesota to retrieve Blake Miller's trailer. All subsequent trips had to be done in this limp-along mode since there just never was sufficient time to get the 4x4 into a repair shop. Thanks to my dear friend Elizabeth Bricken's company over the phone I was able to stay awake and drive until 2:00 a.m. on Saturday, at which point a church parking lot in Round Rock, Texas played host and permitted a four-hour power nap somewhere between the cooler and a pile of other gear in the back of the towcar. An obnoxious wakeup call from a freight train beyond the church property tree line came all too early – well so much for a secluded parking lot.

By 11:00am Saturday the abused tow vehicle, Silent 2, and I were bouncing down the long gravel road to Zapata County Airport and were received warmly by Gary and the WRE gang. We immediately went to work assembling the glider and took the opportunity to also familiarize Gary with the quirks of the modified trailer. By early afternoon Gary was flight-testing the sailplane in the skies over Zapata and thoroughly enjoying himself. At the same time, yours truly was curled up on a sleeping pad in a corner of the toasty hangar no longer quite sure what day it was, but with a noticeable grin on his face. Mission accomplished!

The next day Gary and I took turns flying locally, aerotows courtesy of Russell Brown and Quest Air's Dragonfly. Gary flew early to explore the performance of the glider (he was most keen on flying at low altitudes to prepare for an early departure) while the intent of my mid-afternoon southward flight along the Rio Grande was mainly to become familiar with the unique desert terrain (this was also my first experience with the afternoon arrival of the sea-breeze and I barely made it home). It was satisfying to note that, even though my "loaded" Silent 2 motorglider is almost 64 kg (140 pounds) heavier, the D-U sailplane had the same very familiar feel, however with more agility and a wonderful ability to climb in weak lift. By Monday the weather looked good for a distance attempt and Gary launched mid-morning heading north towards Laredo with me in hot pursuit in his tow vehicle. Pete Lehmann and Davis Straub were also out on course with their hang-gliders and the radio waves were abuzz with position reports back to the respective chase crews. Weather conditions initially cooperated providing both a favorable tailwind and some low-level cloud streeting. Accordingly, Gary made excellent speed until the lift became "soft" and the sky turned blue around Carizzo Springs resulting in an off field landing on an isolated desert road followed by an amusing "find the needle in the haystack" retrieve.

As most soaring pilots know, weather wise 2004 was generally a weak year in many parts of the US. The Texas weather, no exception, was quite wet compared to normal, resulting in degraded soaring conditions, and the desert amazingly green and lush, perhaps only to the delight of local ranchers. The same general trend continued throughout the summer and affected several soaring and hang-gliding contests in the Lone Star State. The low-lying terrain around Carizzo Springs seemed to be particularly affected resulting in a sort of no-man's land that was tricky to traverse. The weather continued to not cooperate for distance attempts over the next few days and the time was spent repairing a damaged wheel fairing and on another practice flight to the south (this time the sea breeze caught me with the end result that I also landed on a road). Gary had to temporarily leave Zapata for a conference in Oklahoma City and WRE Director David Glover, a master of logistics, suggested that if I tried for a

distance attempt towards the north, instead of attempting some local speed runs, he'd pick me up wherever the landing and we'd continue together to Oklahoma City. Since Gary was already in OKC, he and David would then simply return to Zapata with the Silent 2 for additional distance attempts while I would proceed directly back to Tennessee. On Thursday morning conditions were totally blue and nobody flew. Russ Brown of Quest Air made lots of headway rebuilding the towplane's previous motor that had blown a week earlier. The rest of us used the time to prepare gear, check the weather, and add to the *"You might be in Zapata if…"* list. Some of my favorites were: *"… you order a burger and it comes with rice and beans; … your cellular phone thinks you are outside of the US; …your preflight checklist includes inspecting for snakes, tarantulas, and scorpions; …your choices for off-field landings are mesquite, cactus, and roads; …all the restaurants in town have the same menu; …etc."* Jokes aside, we all agreed that *"… the town residents are the most friendly and genuinely hospitable people around"* should be added to the list. Two new glider pilots and their families, Parry & Kristie Judd and Mike, Cyndi, & Nicole Leger, arrived from California that afternoon and they were given the same indoctrinational flight briefing that I had received several days earlier on the does and don'ts of flying in this region. I was glad to see that Mike and Parry (both experienced pilots) took the advice seriously. The old saying about there being "old pilots and bold pilots, but no old bold pilots" came to mind.

By Thursday evening the wind had picked up and the tension cables bracing the radio tower outside the lodge were humming. Some of last year's participants mentioned that the wires had hummed on the nights before distance records set at the 2003 WRE. Needless to say, this caused some real anticipation and excitement about what the next day, July 9th, might bring. It would also be my last day in Zapata regardless whether we flew or not. We all woke up early on that Friday to see what weather conditions were in store for us. I have never felt more rested, well at least since picking up the glider in Baltimore. The wind was steady from the south and rows of low clouds, perhaps 100m (300 ft) above ground, were already starting to form (I found it quite amazing how the lift began to organize so early in the day). This phenomenon is something that Gary studied via review of statistical weather data and is apparently a fairly consistent mid-summer weather pattern in this region of southeast Texas (although 2004 has mostly bucked the trend). His research ultimately indicated that Zapata held great promise for record flights due to the possibility of early starts and consistent tailwinds, albeit with the compromise of initial low flight altitudes and challenging terrain. All signs and forecasts indicated that the day was a go.

After sharing breakfast at *El Paraiso* with the Judds and Legers, I headed to the airport to hook up the trailer and to carefully go over everything prepared the previous day. A large feather on the ground next to the trailer caught my attention and I picked it up. It was a primary feather of a Crested Caracara, a member of the falcon family that alas has the not-so-good looks of a vulture. Since this was to be my last day in Zapata, I stuck the white-tipped souvenir into one of the car's air vents for safekeeping. David, who had been back at the lodge packing his gadgets, caught up shortly afterwards and we discussed the options for a declared distance, electing to choose a distance-to-goal that exceeded the current record by a sensible percentage (instead of the FAI required 10km) and to keep the path as northerly as possible to facilitate continuation by road to Oklahoma City. We settled on Winters Airport, which resulted in a distance of 559 km (347 miles) and about 10% more than Gary's 1998 record of 508.1 km (315.7 miles). The course also had only a very slight westerly component, which would allow David to drive north almost the entire way on Highway-83 from Zapata, through Laredo, Uvalde, and on to Winters.

The rest of the morning was surprisingly quiet, except for one instance that I'll get to later. All preparations were done and I found myself surprisingly calm and reflective while waiting for the clouds to get a bit higher and for the streets to organize. The sailplane's relatively Spartan instrument panel was fitted with an IGC approved Colibri GPS logger (powered by a small battery and solar panel), Ilec electronic variometer (also running off the solar panel), altimeter, and airspeed indicator. In addition to this, we had temporarily installed (read, duct tape) a back-up Cambridge GPS logger powered by a separate battery. I carried two handheld radios, one for aviation frequencies and a second high-frequency unit for communication with David in the chase vehicle (in turn fitted with a base-station unit and magnetic-mount external antenna). Other supplies and gear included seven bottles of water, four granola bars, charts, cell phone, Swiss Army knife, small flashlight, lighter, lip balm, and parachute. With exception to the bottles and charts, all gear was either in my clothing pockets or physically attached. Lastly, the left side of the instrument pod had a large adhesive label with pertinent emergency contact information written in red font.

Pete Lehmann and Davis Straub, both very familiar with the area from previous years, launched around 10:00 a.m. while I elected to wait a little longer following the logic of "there's no point in risking a brand new sailplane in low lift over unfamiliar terrain". A half hour later the time to launch was imminent and, as I approached the front of the glider reaching for the cockpit rail to pull it out of the hangar, a small movement on the concrete floor right underneath the cockpit nose caught my attention. Fortunately instinct made me jump back. It turned out that the shade of the hangar had appealed to a four-foot rattlesnake too. Close call is all I can say! David then escorted the cold-blooded visitor to the mesquite and cactus brush adjacent to the hangar and the morning's brief commotion subsided. I also now wonder about the prudence of taking naps on the hangar floor. It was time to launch and David, himself a holder of record flights in hang-gliders, gave some sound advice before getting a head start with the tow vehicle, "Remember, this is not a race. Connect the dots and pace yourself." The words would serve me well later in the day.

At approximately 10:45, with David (and the crew members of the other pilots) already on the road, Russell towed me upwind with the open cockpit Dragonfly giving a real wave-off (i.e. with his left arm, not by the wing rocking that sailplane pilots are used to seeing) at around 750 meters (2500 feet) above ground level (AGL). I immediately pushed the stick forward to put a "notch" in the barograph trace recording; continued south briefly, sniffed the general area, and then headed north to the start sector deciding that the only advantage was time left in the day, not start altitude. The first two hours of flight were quite consistent with fairly well defined cloud streets, flight altitudes between 600 to 1100 meters (2000 to 3600 feet) AGL, and a slight quartering tailwind. Since the prevailing wind was gradually pushing the glider west towards Laredo airspace, it made sense to fly down a street for several miles, identify a definite lift source in the adjacent cloud street, and then jump eastward. This went on until past Laredo. A low point of 460 m (1500 feet) occurred about 1½ hours into the flight just south of Encinal and the saving thermal's source conveniently happened to be a private runway (Lewis2 airport identifier). This first hint of impatience had caused me to speed up and it almost cost the flight. Communication with David occurred every ten kilometers with a minimalist report of distance and bearing from Zapata. This allowed him to plot progress on a chart without the confusion of landmark descriptions (statements like "I'm crossing the main highway east of such and such town", are quite useless).

The entire third hour of the flight was a delicate tiptoe through a band of low terrain stretching between Carizzo Springs to the west and Cotula to the east. Unfortunately Pete and Davis did not make it through with their hang-gliders. Gary had also gone down in this area a few days earlier and I suspect that my slightly later departure may have been beneficial. Superimposing the "bucket" shape of the barograph trace onto the topographic map shows a direct correspondence with the Nueces river basin. Pushing speed in this area would have almost certainly resulted in a landout. Fortunately David's words and the low point over the Encinal ranch provided added incentive to take every thermal all the way to cloudbase. The next two hours took 210DU from the northern edge of this wet zone, past Uvalde, and up into the hill country. After another reality-checking low approximately on the east-west line between Sabinal and Uvalde, the real test came when entering the hills further north. I found myself at the upper end of a shallow valley with insufficient altitude to safely proceed forward onto the plateau and the only decent place to land was a couple of miles back. This was the only time in the entire flight I actually turned back. The landing option was a small manicured lawn of a ranch house and appeared to barely be sufficient in length (however still significantly better than the surrounding mesquite). The situation was dire and I had come too far to throw it all away. Fortunately a Crested Caracara graciously marked a thermal at about 200m (650 ft) AGL and I never had to discover who the only nice green lawn for miles around belonged to. Time wise, this near "game over" point marked the halfway divider of the entire flight. By now the position reports to David had already become destination-based (distance/heading to Winters) for accuracy, instead of departure-based (distance/heading from Zapata), and David's pace was matching well with the glider's.

Conditions on the plateau were initially delicate, but by the beginning of the sixth hour they had improved considerably. The flight path now also fell right on top of Highway-83 and I knew from David's feedback that we were neck-and-neck. At one point, about halfway between Uvalde and Junction, I just happened to glance down and noticed the telltale shape of a glider trailer heading north. A radio call to a surprised David asking if a red car was overtaking him confirmed that it was indeed him and not someone headed out of Uvalde. Now this was real

"flight following"! For most of the plateau portion of the flight up until the day began to deteriorate, the barograph shows a textbook trend of rising heights, from an initial 1350m (4500 ft) above mean seal level (MSL) up to 2200m (7300 ft) MSL. The only exception to this was a lowpoint over the town of Junction. It puts a rather embarrassing dip in the barograph and I can surmise that it was likely pilot error (my "cockpit recorder" seems to recall that the clouds just to the east over Highway-83 looked good and the pilot decided to drift to the west with the wind to some more questionable looking puffs instead). Also, the north and south branches of the Llano River meet at Junction (a fitting name no doubt) and continue eastward. This drainage valley may have contributed to softened conditions, but I'm probably looking for an excuse on this one. Who really knows though? The clouds to the east may well have been bogus. While circling over Junction I was able to watch David transition off Interstate-10 back onto Highway-83 and encouraged him to pull over to look up into the southwest sky. From this point forward David would lead slightly on the open road and I would lead slightly as he slowed through the small towns of Menard, Eden, Paint Rock, and Ballinger located between Junction and Winters.

Somewhere near Eden came the realization that success was within reach and I began to "count my chickens". Fortunately a little voice of sanity told me to wipe the grin off my face and concentrate because it's not over until it's over. It turned out that the grin could have stayed because the segment from Junction to Winters was as good as it got that day. Average lift over this leg was between 1.3 m/s (2.5 knots) & 2.0 m/s (4 knots) and the flying was generally between 1200m (4000 ft) & 1500m (5000 ft) AGL, great flying but relatively weak and low by Texas standards.

Once on a high final glide to Winters, David and I discussed the option of proceeding further to set a free distance record. We still had a couple of hours of daylight left and the quartering tailwind had picked up noticeably. We simultaneously confronted our charts and decided that, in light of the wind direction and the controlled airspace due north around Abilene, it would be best to turn northwest after reaching goal and shoot for Sweetwater. Winters came and went as fast as I read the final seconds of the GPS display's countdown out loud over the radio and the ensuing congratulation from David (thanks for recording that on one of your gadgets Dave!). By this time David had been on the road and I had been in the air for over seven and a half hours (7 hours 17 minutes from declared start to goal) and there was no more time to think about it because reaching Sweetwater was going to take a lot of effort (since the day was rapidly subsiding). I savored the moment for a few seconds, took a deep breath, and then focused on flying again.

In spite of the temptation to cut directly northwest towards Sweetwater, the sky was turning completely blue to the west and it made sense to initially continue due north from Winters towards Abilene's controlled airspace to take advantage of some faint cloud streets. The end result was a sweeping left arc from Winters to Sweetwater almost bumping the controlled airspace. A half hour out of Winters marked the conclusion of the last good climb of the day (4000 ft AGL) and from then on it was an extended final glide with some minor circling and pull-ups. The arc gradually approached Interstate-20 and by this time the tailwind direction was ideal. Running approximately east-west just south of the interstate are some low lying ridges. As I approached them I noticed a huge wind farm carpeted these hills. An attempt to count the number of three-bladed windmills immediately fizzled. There were hundreds of them and all seemed to be waving frantically at their fiberglass and carbon brethren passing by in the sky. Maybe I was a dehydrated and somewhat delusional Quixote-like glider pilot by this time, but it made for a fine welcome to Sweetwater. The last few miles were quite tense and the airport, located on the west side of town, looked way too far on the horizon for final glide. Would the good tailwind be sufficient? Would it be better to make a precautionary landing? I gave the glider a symbolic pat, whispered a prayer, and proceeded. The glide over town (spotted by David sitting at a traffic light) was right at my limits and the entire time I was playing mental hopscotch from one landing option to another. There were many choices and, always having one in reach, I pushed forward to the airport crossing the airport property line with safe but insufficient altitude to complete a proper pattern. The end result was a left turn to final at 100m (300 ft) with a landing on the inactive north-south runway instead of the east-west runway.

The reality of the flight immediately started to sink in. David arrived within minutes of the landing and Gary called from Oklahoma City with congratulations. Standing upright for the first time in over eight and a half hours gave a

good preview of what my knees might be like at eighty, but I don't believe my feet were really touching the ground. The satisfaction and elation is quite indescribable and I'd do it all again in a heartbeat. After a quick photo shoot we packed up the glider, thanked Sidra Gaither and family (they had been launching communication balloons from the airport) for their assistance, and headed to Oklahoma City right around sunset arriving at the Glover residence at about two in the morning on Saturday still full of adrenaline (I speak for myself on that one). Physically spent, I crawled into bed and, with the gears in my head still spinning, struggled to fall asleep.

What else is there to say about the flight? The flight computer statistics for the declared task are 1.05 m/s (2.1 knots) average lift, 60% cruising and 40% circling, 79 km/h (42.6 knots) cross country speed, 54 thermals, 49.1 mean L/D, and 9.5km (5.9 mile) average glide. For the entire flight they are 1.0 m/s avg. lift, 62% cruising and 38% circling, 62 thermals, 49.2 mean L/D, and 9.65 km (6.0 mile) average glide. The declared distance was 560.072 km (348 miles), free distance 627.62 km (390 miles), and the free 3-turnpoint distance 646.823 km (402 miles).

The question has been asked numerous times about what really made the flight possible. Favorable things were the thorough preparation, excellent crew support, good tailwind for much of the flight, perseverance, and a great glider. Weak lift, low cloudbases, and poor landing options opposed these. Most importantly however comes the realization that, even though only one individual's name ultimately gets recorded, it is thanks to the friends around us that endeavors like this can even begin to happen. In addition to the special people mentioned earlier, credit is due to the super guys at Alisport for building such a great glider with numerous details that made it truly ready for the Texas conditions right out of the box, Gary Osoba for being the creative and driving force behind the WRE, his mentorship, and encouragement to all attendees; David Glover for organizing & directing the event, for volunteering as ground crew, and for his professional support throughout the distance flight; Russ Brown of Quest for all his help on the ground and for the perfect aero-tows; Pete Lehmann, Andrew Holupka, and Davis Straub for their advice, suggestions, and assistance with equipment and weather; Charlie, Manny, and Rick at Zapata County Airport for their friendliness, generosity, and help (these guys define airport hospitality!); the Judd & Leger families for their friendship and support; Sidra Gaither and family of Sweetwater; Mr. and Mrs. Glover of Oklahoma City for their kindness and providing the much needed lodging after the flight; Dave Stevenson for calling to learn the details of the flight, reviewing the flight log, and posting an announcement on the web; and, last but not least, Judy Ruprecht for answering my questions and for all the work she does with our badge and record applications.

After visiting with David's family Saturday morning it was finally time to say goodbye and head east towards Tennessee. Gary and David returned south to Zapata on Sunday ready to attempt more distance flights and I genuinely hoped that Gary would be able to defend his records. It was not to be. Additional attempts later in the summer in Texas and Kansas also fell victim to soft conditions. The fact is that Friday happened to be one of the only summer days with a weather pattern over a large enough geographical expanse for a new D-U record and it simply happened to be on my day instead of Gary's. In spite of the Silent 2 achieving new distance records, it has also become apparent that the glider has the potential to do much more (as in, break the 1000 kilometer barrier in the D-U class) given the right weather. It is my opinion that this flight has merely raised the bar, but that we are not near the limits yet. The next few years should yield some exciting jumps in distances achieved. We'll just have to see what next year's weather brings. In addition to the records, the flight has also provided the immense satisfaction of a personal best and my diamond distance. What more can a glider pilot ask for! Well, at least for this season. ☺

1. *The FAI is the world air sports federation is a non-governmental and non-profit making international organization with the basic aim of furthering aeronautical and astronautical activities worldwide. FAI activities include the establishment of rules for the control and certification of world aeronautical and astronautical records. FAI establishes regulations for air sporting events which are organized by member countries throughout the world. FAI also promotes skill, proficiency and safety in aeronautics. FAI confers medals, diplomas and other awards to those who have contributed to the achievement of these aims as well as for work done in the restoration of old aircraft.*

2. *The NAA is a unique and special organization. It is non-parochial, charitable, and broad-based in its membership. It has as its members individuals and organizations representing all segments of American aviation. The primary mission of NAA is the advancement of the art, sport, and science of aviation and space flight by fostering opportunities to participate fully in aviation activities and by promoting public understanding of the importance of aviation and space flight to the United States.*