

Elijah Hoover

Dr. Eric Lee

Freshman Composition II

16 July 2026

The Heart and Soul of the Sky

The Marine Corps is made up of several different jobs and over arching missions that make the total of what the Corps' values and mission statement. Ground units make up the people that have the mission of of overtaking armed forces and pushing through the enemy, command units move other units around observing bigger picture things, and air units have the sole mission of keeping motorized flying vehicles operational and moving. The mission of air units may seem smaller may seem cozier and more stream lined than the other tow however there is a lot of work that goes into the over arching mission of Air control that each of these air units contribute to. Some of these units specialize in keeping specific birds in the sky, some make sure each flights are taking place exactly on time and in the right spot from take off to landing and, others are laying the ground work so that every small piece of the operations so that these units may run smoothly. The unsung heroes of the lot adding a ray of diversity to the overarching mission are marine wing support squadrons. These units are comprised of several jobs that are not exclusive to air wings and aim to do the dirty work that these other units are unable to support themselves. This leads a lot of people to undervalue the importance of these units however with the project Marine Wing Support Squadron 317 has accomplished this should prove that value of these units beyond a shadow of a doubt. Marine Wing Support Squadron 371 has proven that wing support squadrons are useful by drastically improving the process for building runways in the desert.

Project LZ Knoz as it was named by Marine Wing Support Squadron 371 is the first project of

it's kind finding a new way to build runways in the desert. In order to accomplish this goal the project will have to be divided among two of the heavy hitting platoons of 371 and have a little support from other platoons keeping everything in house. The first team is lead by 371's Heavy Equipment platoon and has support of radio operators, corpsman, site surveyors, and cooks. Everything support wise is important but one that gets forgotten about all the time is radios. The 117 G ensures that smooth communication happens at all times without enemies being able to hear. This keeps the project running smoothly allowing for tools and materials to be delivered on time and make sure nothing had been forgotten (Cpl Primeau). To fully understand and to research this research I joined the Radio operators platoon as a trainee where I could do my interviews and observe the project as I did my research. Before the team left for site communications were the first thing established before even making the journey out there. In fact every piece of support had to be established before the mission. The food had to be ordered through proper channels and delivered and the medical supplies had to be gathered as well. A job of this magnitude can lead to severe injuries and even death so every precaution must be made in order to minimize risk to the lowest possibility. Once everything has been prepared for safety an advanced team will go to begin the set up of camp. With a grater, Trimble system, mobile kitchen, sleeping quarters, air conditioners, and generators it will be the mission of the advanced team to set everything up within a week to get everything ready for the main team.

After days of planning and set up the main team arrives to begin the first phase of this new method. The first step is a combined effort of site surveyors and heavy equipment operators as one plans and directs the set up and the other puts the vision in motion. The site surveyors plot out the path, depth, and level of where the sand needs to be using a system that is known as a Trimble. This device utilizes Global Navigation Satellite Systems, lasers, and optical sensors to pinpoint exact real-world locations and stream the information into 3D models and analytics tools that the site surveyors have programmed themselves. ("GPS 101: How GPS Works.") Using this system, designing these projects,

and really understanding how to bring these missions to life takes more than muscle and horse power. It takes more than a higher than average intelligence one needs to take that and use that to spend years mastering the craft. With this a secondary device is put on the heavy equipment vehicles which would be the graders and the real work begins. With the Trimble keeping the graders in line the operators are able to move with speed and proficiency knowing that they are guaranteed to be doing their job right. Once the grader has smoothed out all the sand the roller comes in behind it and compacts it down. This process takes a few days before the concrete comes into play. Though the new runway will no longer be made of concrete it will still be utilized in hardening the sand for a base in replacement of the previously used Envirotac II or commonly referred to by the marines as Rhino snot. This chemical works by binding the dirt after being sprayed onto it allowing it to harden creating a more steady base (“Dust Suppression Product | Envirotac II & Rhino Snot,” 2018). Concrete is easier to deal with as the Rhino snot had to be mixed in the water trucks before being sprayed causing horrible build ups, clogs, and nearly uncleanable grime while concrete solves the problem by being able to have it set on the runway directly then moisturized with water trucks. Once the sand is set right scoopers pour loads of dry concrete all over the runway which will then be mixed into the sand and grader follow behind to smooth everything back out while mixing it into the sand. The last step is the water trucks wetting everything down allowing the concrete in the sand to harden. This is the completion of phase one and to begin phase two Heavy Equipment platoon passes the torch to Expeditionary Airfield platoon.

The change of command of the job site has no ceremony or parade to welcome it and is just a quick exchange as they exchange information on what was done and troubles that had arisen. Sgt Moreno would now lead operations from the site and begin to finish the project. Using matting in the past had been a pain and more labor inducing than saving as the old matting weighed one hundred and fifty pounds per sheet but the Airfield Mat Lightweight being tested would as the name suggests be lighter, easier to transport, and be faster to build with than either. This material could be the future of

aviation in the military. Portable roads have been successfully tested in Sweden with success and scientists boast about how the future of being able to move and shift roads is here. Now we can take that same principle and apply it to airfields in wartime creating an advantage never seen before (Kuttah). Marines begin setting the matting out interlinking them one by one down the runway. This takes only a few days before the project is finished allowing the F35 test pilot to land with ease finally proving how effective marine wing support squadrons are by doing something never done before.

The United States Marines will answer the call no matter how difficult and no matter the cost. These men and women go out on the daily to make the world a better place but among them squabbles take place on how important each of them are. Marine wing support squadrons have been considered the laughing stock constantly taking ridicule for being lazy and replaceable. This project has not only shattered that notion but left it in the dust proving that even marine wing support squadrons earned their place among the few, the proud, and the bold.

Work Cited

Kuttah, Dina. "A Review on Temporary Roads and Portable Matting Systems Improving Traffic Resilience and Disaster Mobility." *Journal of Disaster Science and Management*, vol. 2, no. 1, 2 Mar. 2026, 10.1007/s44367-026-00030-w.

Primeau, Philip. *Communications Expert on the Scene*. 4 June 2026

"GPS 101: How GPS Works." 8 May 2025.

"Dust Suppression Product | Envirotac II & Rhino Snot." 2018.