


Hang ing by a Thread

STORY BY JASON JORGENSEN





Early morning gusty winds and scattered rains were blowing across the plains west of Albuquerque, NM surrounding the Double Eagle Airport as Police Pilots, Tactical Flight Officers (TFOs), Medics and Instructor Cadre gathered at the New Mexico State Police Hangar briefing for their final day of basic hoist training. During the previous five days, the members of the NMSP Air Support Unit, Tactical Emergency Medical Support (TEMS) and SR3 Rescue Concepts have been rigorously practicing hoist rescue techniques which the NMSP will soon be using to save lives all across the state. During their final day of training, **Jason Jorgensen** met with SR3's Instructors and State Police personnel to learn more about what goes into teaching these dedicated law enforcement professionals how to institute and skillfully operate a safety centric hoist rescue program - from scratch.

 **W**hile safety is key in all aspects of aviation, maintaining the highest possible standards of safety during hoist operations is an absolute must. In order to do this, each member of the crew must be proficient in their individual roles and very cognizant of how all of their roles intermesh, like members of an orchestra playing each of the parts which together form the entire symphony. When everyone is 'playing off of the same sheet of music,' and in sync with each other, the entire hoist process is actually rather safe, certainly more so than it may appear to a bystander; but it takes a lot of work and dedication to get to that point. This is where a company like SR3 Rescue Concepts comes into play. When an organization is either standing up a program or learning more advanced hoist rescue techniques; having instructors that intimately know what it is like to perform each





crew member's role, and having several years of real-world hoist rescue experience can go to great lengths to ensure that the new program is an effective, safe and successful one.

SEARCH AND RESCUE IN NEW MEXICO

Known as "the Land of Enchantment," New Mexico's terrain is as diverse as it is gorgeous, and many different microclimates can be found in the spaces between its large rose-colored deserts, heavily forested mountains and snowcapped peaks. This ruggedly beautiful landscape draws millions of visitors annually and also means that on average, one new Search and Rescue (SAR) operation launches every 36 hours across the state. Due in part to the frequency of SAR operations experienced within the state, the New Mexico Search and Rescue Act was passed in 1978.

The Search and Rescue Act designated that all search and rescue missions in New Mexico were to be controlled by the New Mexico Department of Public Safety, New Mexico State Police division. Having SAR operations fall within the jurisdiction of a state-level agency



removes the typical jurisdictional barriers that can impede SAR activities in other areas of the country such as requiring there to be written agreements between different agencies and different counties for activities in certain areas. This Act not only affords the State of New Mexico a standardized level of care and response to SAR operations, it also importantly allows SAR responders in New Mexico to have the ability to respond just about anywhere in the State whenever and wherever they are needed.

While not every search and rescue mission require assistance from a helicopter, oftentimes, in those missions where helicopter air support is requested or needed, the aircraft and its crew may very well mean the difference between life and death for the victim. Whether the helicopter is utilized as an asset to locate the victim and direct ground rescuers to the person's position or, whether the helicopter itself is the asset which affects the rescue; the type of aircraft and training the aircrews have received play a large part in determining the types options available to prosecute the rescue. Throughout much of the history of the NMSP Air Operations Unit, this has meant finding a suitable landing location near the victim(s) to land and then extract the individual(s). Now, the department has a new, hoist equipped helicopter, and with their newly



hoist-trained aircrews, the capability for the helicopter in SAR operations has greatly expanded.

TURNING LOSS INTO MAKING A DIFFERENCE

For the members of New Mexico State Police Air Operations Unit, finally conducting and completing their basic hoist rescue training is the culmination of a long-standing vision that has been near and dear to their hearts, especially over the last eleven years. Prior to his passing in an accident while on a mountain rescue in 2009, NMSP Pilot, Sgt. Andy Tingwall, had the hopes that his agency would eventually use a twin-engine helicopter and hoist program. Tingwall believed that such a program would further help the agency more efficiently and safely conduct an even wider range of rescues in the stunning, yet austere backcountry found all across the state. Just as tragedy helped shape the experiences and ideals of the members of NMSP's Air Unit, the founding members of SR3 Rescue Concepts were also touched by tragedy as well. SR3 was in fact the call sign for Dave VanBuskirk, a search and rescue



officer with the Las Vegas Metropolitan Police Department, who also lost his life during a rescue in 2013.

Founded in VanBuskirk's memory, SR3 Rescue Concepts has been forged by the principles he lived by. As David Callen, Co-Owner and Operations Manager of SR3 describes, "It is our hope that through the same dedication and passion for training, we can help to increase efficiency and levels of safety in the public service community." Acting as one of SR3's four Instructor Cadre members during training for the New Mexico State Police, Callen was also joined by: fellow SR3 Co-Owner, Jason Connell, as well as Hoist Operation Specialist Rob Munday and Officer Donnie Ruberio, a Hoist Operator/Rescue Specialist Instructor and Tactical Medic with Las Vegas Metro Police Department. Given their shared backgrounds in law enforcement and the similarly catalyzing loss of good men who were co-workers, mentors and friends - it was not surprising at all to see the instructors and students quickly form bonds with each other and skillfully mesh together in order to complete the State Police's training syllabus.



CRAWL - WALK - RUN

The hoist training program as it was tailored for NMSP, was both multifaceted and comprehensive. Each of SR3's instructors bring many different skills to the table and they were able to take each student and instruct them in the many nuances specific to their own unique roles, whether a hoist operator, tactical medic, rescue specialist or pilot. Additionally, the personnel from NMSP's air unit also learned how to interact and function as a team when it comes to conducting hoist operations. By their own admissions, the crawl-walk-run pace of training worked out very well for the officers and medics, helping them learn all of their new skills while also keeping them from becoming overwhelmed with the large amounts of information they received over the course of the intensive training program.

Law enforcement aviation is full of some of the highest-level operators around. While it is an essential requirement for the operations being performed it can also work against those personnel when it comes to learning new skills. Individuals that operate at such a high level often struggle with self-imposed pressures more than anything else,





because they hold themselves to such high standards. SR3's instructors often see significant apprehension at the beginning of a course from crew members who aren't too sure about the idea of hanging out of the side of an aircraft - which is totally understandable. The course's crawl-walk-run approach combined with the instructors providing lots of positive feedback, is designed to go a long way toward building the students' confidence without ever exceeding their personal limits.

Starting with the basics, the focus of training began with further developing the students' aircraft handling skills, use of checklists and verbal commands, additionally time was spent just getting the students comfortable standing on the skid and "riding the hook." After all, if a rescuer isn't comfortable standing on the skid with the door open, they won't be able to work with the pilot to "con" the aircraft into position, and if that can't be done there's no need to even turn on the aircraft. To get the students more comfortable with the tasks they'll be doing, they started off practicing these evolutions on the ground, performing their checklists and talking through each step of the procedures before going onto the next. The officers' and medics' confidence in their equipment and checklists were further reinforced by practicing hoist procedures and riding the hook with the helicopter on the ground.



LEARNING NEW SKILLS

Over the course of their instruction program, the NMSP Officers training to be hoist operators learned the specific verbal “conning” commands; which must be rendered expediently and accurately during hoisting operations. They also learned about cable management, load management as well as how to control swing, spin and oscillation and how to rig the aircraft cabin. Further, the TFOs turned hoist operators learned how to accurately insert and extract human loads to specific targets and developed a keen understanding in the nature and correct use of all mission equipment, including rescue devices. Because certain aircrew roles will at times be interchangeable, many of these new hoist operators also learned how to perform as rescue specialists.

In the rescue specialist role, these officers and medics further learned the proper techniques involved in “riding the hook,” while also developing strong skills in tagline setup and operation during hoisting. Additionally, those learning the rescue specialist role received in-depth instruction on how to load and unload personnel and victims in the cabin of the aircraft, how to manage the scene on the ground as well



as some training on basic medical skills that were relevant to each person's individual scope of medical qualifications. Undergoing the rescue specialist training right alongside NMSP's officers were the TEMS (tactical medic) personnel.

TEMS personnel were given training beyond just learning how to function as rescue specialists, these tactical medics further learned advanced medical skills and how to apply and integrate them into hoisting operations, particularly when implementing specific hoist rescue devices. These medics also learned the essential art of time management on a scene, with regard to patient care in a helicopter rescue environment. A particular point that was well illustrated during debriefing on the final day of training when one of the TEMS personnel discussed how in the medical field, saying "I just need five more minutes..." can frequently and easily stretch into what is actually ten or even fifteen minutes. Understanding now, that when the helicopter is involved, giving a proper estimation of the time they need to stabilize and prepare a patient for transport and sticking to that estimate is a mission critical ability.



Going beyond the specific training for the hoist operators, rescue specialists and tactical medic roles that instructors Munday, Connell and Ruberio provided to their students. Instructor Callen, a CFI, focused much of his efforts during the training program, on helping the pilots become safe and confident hoist pilots. This is largely due to experiences which have shown the instructor cadre that no matter how skilled a hoist operator is, he/she will never be able to fully compensate for a pilot who is lacking the necessary skills. As such, Callen ensured that the pilots learned more about their specific aircraft and developed hoist-centric flight skills such as the selection and utilization of suitable hover references, hoist specific flight profiles; they also learned the language of hoisting commands and how they translate to what the crew needs the pilot to do. Concurrently, NMSP's pilots also sharpened their multi-crew skills, decision making skills and formed a better understanding of the roles of hoist operators and rescuers.

Elaborate briefings conducted before each training evolution covering the skills to be learned and goals to be achieved; followed by mission execution and then thorough debriefing afterward helped to insure that everyone was benefitting from the experiences and understanding of all personnel involved in the training, and that above all - safety remained the number one priority. Further enhancing the level of instruction, while each of the program's training evolutions took place, there were SR3 instructors onboard the helicopter and on the ground, giving the crews

helpful pointers along the way, testing them all and making sure that the officers and pilots were executing their tasks properly and safely.

As NMSP's training days progressed, so too did the complexity of what they were learning. During their week-long instruction program, the students continued on to learn the techniques involved in empty hook deployments (no load), cable management and control, followed by single rescuer evolutions, then doubled-up insertions and extractions and tagline operations. All of the officers and medics taking part in the program progressed smoothly and smartly. As the students demonstrated to their instructor cadre that they had a firm understanding of the skills being taught, the instructors advanced on to the next topics of instruction. Each training evolution was designed to build upon and further reinforce those skills that were developed in prior evolutions while also incorporating new ones.

SLOW IS SMOOTH - SMOOTH IS FAST

Any multi crew operation like hoisting requires active input from all members of the crew. During their training, NMSP personnel learned that following a set of specific procedures is of critical importance in order to maintain safe and efficient hoist operations. From an instruction standpoint, the cadre provided by SR3 believe that an important aspect of the training is the students ability to demonstrate that they are understanding all of the information, not just replicating it. Instilling within their students the importance of understanding the "whys" in the processes, which will further allow the crews to make better decisions, especially when faced with new situations that they perhaps haven't seen before.

SR3's instructor cadre also focused a great deal on slowing down and applying the age-old quote, "slow is smooth, smooth is fast." The instructors feel strongly that by taking the necessary time to deliberately follow the step-by-step process every time, as well as checking and double checking everything, helps keep everyone safe, even long after the instructors have left and the agency has been operating on its own.

This deliberate, step-by-step concept further lends itself towards trying to establish standardized conning commands and "flow" when moving personnel in and out of the aircraft as well as inserting and extracting personnel to the ground. The instructors also recognized that

getting all students to use specific verbal commands and physical actions can sometimes be a challenge that requires practice and repetition to solidify. As one of SR3's instructors mentioned, "this isn't a surprise to any of us, but it's something that requires significant focus and attention from the students across the entire course in order to get them where we need them to be by the end."

CHALLENGING CONCEPTS AND TIME COMPRESSED TRAINING

Many of the skills taught during the program were quickly learned by the NMSP students. Cable control is an example of one of those skills that most students tend to pick up on quickly, as-is following fall restraint protocols for both themselves, as hoist operators in the aircraft, and rescuers and survivors transitioning in and out of the cabin. According to the instructors at SR3, these are fairly 'black and white' skills that are as simple as following a checklist or learning to keep the correct amount of slack in the cable. They describe that there are other skills though that are harder to master as they require more experience and/ or finesse.

From an instructor's perspective, it's often quite challenging to initially provide students with the concept of an accurate and correct "sight picture" that they should be seeing when they are standing on the skid and looking directly down over a rescuer they are about to pick up. This "sight picture" is critically important to a nice clean "pick" without inducing any swing, it also varies from aircraft-to-aircraft and can only really be learned by doing it - a lot. To help students better grasp this challenging concept, SR3 instructors try to provide additional positive reinforcement during hoist evolutions every time that sight picture is correct, so the students get better at learning the idea of what is correct, and what is not.

Another concept that is very difficult for instructors to convey is just how quickly things tend to go wrong in an emergency and how important it is for each individual to know their emergency procedures from memory and be able to react accordingly, instinctively. "No matter how many videos we show to try and highlight this, and how many training evolutions we perform on site, nothing can ever truly prepare a student for the abruptness and savage reaction experienced from a





tail rotor failure, or just how quickly a snagged hoist cable can become a catastrophic emergency.” remarked Instructor Callen.

During time compressed training courses such as that which was conducted with the New Mexico State Police; SR3’s instructors need to be keenly aware of the possibility of overloading their students both physically and mentally. Additionally, they understand that there will always be external factors like aircraft maintenance issues, weather, fatigue, and the individual student’s ability to perform to the standards that the instructors require. To ensure their students are not overwhelmed, the instructors draw on their own extensive operational experiences to be able to modify the plan very quickly and “pivot” the direction of training at any time, even midway through a day, in order to get the maximum training value out of each day of the course.

The instructor cadre are also always managing and mitigating the fatigue of the students, constantly monitoring each individual in an effort to push them right up to their own personal limits without going too far, and potentially losing any hard-earned confidence that they’ve worked so hard to build up over the week. Their sharp understanding of their students’ readiness and pivot-ability was highlighted on the last day of training, when weather and other external factors required significant changes in the final training evolution and location.

With scattered showers and winds that at times approached the safe limits of the aircraft, the joint decision was made to fly in a more controlled location nearer the airport than originally planned, and to use the developing weather front as a training tool to help the students experience what operations would be like closer to the safety margins of their operational limits. As Pilot Kevin Killpack mentioned to one of the TFOs, Officer Steve Montano during the debriefing. "What we did just now, was as bad as it will ever be for you out on the skid. If conditions were any worse - we wouldn't be flying."

Officer Roger Graham, who had initially been rather unsure about the idea of standing on the skid working the hoist and riding the hook, also took the opportunity during the final debriefing to comment to his fellow students about his personal opinions on the level and intensity of the training they had received over the past week. "As some of you may or may not know, I was a SWAT officer for a while, I also went through training to become a SWAT Sniper. I've even been a K-9 handler, and I'll have you know that - no joke - this was the most intense and demanding training program that I've ever gone through. This course helped me learn more skills and feel more confident [in hoist rescue roles] than I'd ever imagined."

CLEARED TO HOIST...

Hoisting has been around for various forms for 70+ years now, and things are done differently by every country, state and city. Even organizations located in close proximity do things slightly differently from each other. Hoisting has come a long way since then, even in the last 10 years with regard to techniques and equipment. The downside to this is that there are lots of techniques in practice and there are definitely some bad habits out there in the industry. As such, in every operation there is always room for improvement, including the skills of hoist instructors as they are always learning too. For the New Mexico State Police, starting a program from the ground up, has the benefit of taking the best of those lessons learned, and avoiding the introduction of any of those bad habits and techniques.

When asked what one of the most important factors are, when starting a hoist program from scratch, SR3 Co-Owner Dave Callen's answer was simple - leadership. Having buy-in from the top down, both



from an initial training, aircraft and equipment setup perspective, as well as ongoing competency and training is key. He continued on to explain that every single member, from the team leader, right through to the pilots, rescue specialists, mechanics and support staff has to understand the importance of doing it right and has to be 100% motivated to pursue excellence in their program for it to truly be successful. “We were very lucky to witness this exact mentality first-hand during our time with the NMSP,” Callen added.

From a student's perspective, the members of the NMSP and the additional TEMS personnel, felt that the training provided by SR3 was not only intensive but “truly top-notch,” as Lieutenant Victor Gallegos, the NMSP Air Operations Unit's Chief Pilot, described it. Gallegos continued on by stating that the degree of professionalism, and thorough instruction provided by SR3 has given his unit a strong and safe foundation with which to begin conducting hoist rescue operations around the state. Adding that the camaraderie and family-like caring that he and his whole team experienced throughout the entire program, even in the weeks and months before the actual training week began, only served to reinforce his belief that they had picked the right instructors to help them stand-up their new hoist rescue program, and support them as they advance their program in the future

As the training cycle ended, both students and instructors continued bonding, doing push-ups together, swapping patches, and sharing stories, including the memories of those that they had lost; which directly played a part in leading all of them to be there conducting this rescue training together. The instructors and students also expressed their shared excitement in looking forward to the time when they will all get together again to conduct an advanced hoist rescue training



program. It was also during this time that one of the New Mexico State Police officers described to everyone present, the honor and esprit de corps that all of the officers feel by being part of their prestigious agency. This shared sentiment seemed particularly fitting to me considering just how much they all had accomplished in such a short time.

The dedication and determination exhibited by the NMSP personnel served them especially well during their basic hoist rescue training program. Even during the compressed timeline of the six-day course, while also having to respond to local issues of civil unrest; the officers and medics still soaked up their instruction and absolutely excelled in their training - surpassing even their instructors' greatest expectations. According to Callen, "These guys have raised the bar for us in terms of what's possible in such a short period of time. We had a range of expectations that we were planning on keeping within, and they actually met and exceeded our expectations for even the best-case scenario we had planned for! Their hard work, positive attitude and willingness to learn is a testament to their agency."AS