
Carlsbad Cavern Expedition Report

New Mexico Room and Guadalupe Room Sections Expedition: December 28-31, 2017

submitted by: Derek Bristol - February 8, 2018

Summary

This report summarizes the results of a four day expedition to the New Mexico Room and Guadalupe Room Sections of Carlsbad Cavern. The expedition was planned and led by Derek Bristol. Objectives were divided among multiple areas of the cave with two days spent in the Guadalupe Room, one day spent in the New Mexico Room, and one day spent just north of the Kings Palace. The results of the expedition included 1,872.5 feet of total survey; 1865.6 feet of new survey and 6.9 feet of redundant survey. The expedition added 0.35 miles to the length of Carlsbad Cavern, which now stands at 33.26 miles.

Expedition Goals and Accomplishments

The areas of focus during this expedition were in the Guadalupe Room and New Mexico Room. There are a number of objectives for working in these areas including producing updated and high quality section maps, fixing a handful of loop closure errors, and pushing several remaining leads. During the last expedition, over the Thanksgiving holiday, two climbing leads were scouted in the Guadalupe Room that appeared to have potential. These were both ascended using technical aid climbing techniques. A relatively new strategy that employs concrete screw anchors was used to make these ascents. The screw anchors are very fast to place, adequately strong for aid climbing, only require a 1/4" diameter by 1.5" deep hole, and are entirely removable. The



The aid climb near GC30 in the Guadalupe Room . (photo by Kevin Manley)

result of using this technique is that the climbs were completed safely, reasonably quickly, and no hardware was left behind on the climbs. Additionally, the holes are so small and so little rock flour is generated, that the impact from the ascents is essentially invisible. While one of the climbs went to a large but blind alcove, the other went to a very well decorated fissure with passage that continues. The first of the climbs was de-rigged, but the other was rigged with stainless steel hardware and equipped for a return trip that will need to be made with full clean gear. In addition to the climbs, several other survey goals were accomplished including a surveyed connection between the Balcony and Mezzanine in a boneyard area east of the New Mexico Room, and the survey of the Sand Passage on the west side of the New Mexico Room. The nearly 2,000 feet of survey accomplished during this short expedition is helping to get the section maps much closer to completion. While many leads remain, a good mix of new and resurvey is being accomplished.

Team

Team members included Derek Bristol (CO, expedition leader, sketcher, climber), Kevin Manley (CO, climber), Eric Weaver (NM), and Nicole Lewis (CO). Derek, Kevin and Eric are veterans of survey expeditions in Carlsbad Cavern, and this was the first trip for Nicole. Everyone caved safely, with low impact, and remained focused on generating high quality survey data.

Detailed Daily Reports

Note: Derek Bristol was the trip leader each day.

December 28, 2017 (Guadalupe Room)

Derek, Kevin and Eric entered the cave via the Natural Entrance and traveled out to the Guadalupe Room via the normal route and went to the center of the upper part of the room near station GC14 where a hole in the ceiling had previously been scouted. A short effort was made to toss a baseball with an attached cord over a chockstone in the ceiling lead, but the distance was too far for this tactic to succeed. The team then went to the wall to the west of GC14 and began a traditional aid climb using removable gear including 1/4 inch screw anchors and traditional chocks and cams. The route goes up the wall, out a short roof, and across a ceiling ledge to reach an alcove where an intermediate belay anchor was set. From there a short free climb led to the room in the ceiling. This appeared to be blind with one possible lead up a formation-choked fissure, but time was short so the decision was made to come back in two days to survey. A 2-bolt anchor and a rebelay bolt were set and a 95 foot rope was rigged. The



Attempting to get a cord over a chockstone to avoid the need for aid climbing in the Guadalupe Room near GC14 . (photo by Kevin Manley)

team then traveled out, exiting the Natural Entrance without incident.

December 29, 2017 (New Mexico Room)

Derek, Kevin and Eric entered the cave via the natural entrance and went to King's Palace and followed the main passage out to the New Mexico Room. They first went to the Balcony to look for and survey the expected connection up to the Mezzanine and the CM survey. The team used NMA31 as a tie-in, but unfortunately the lead list that was brought had been generated in November, and didn't have the most recent survey from the Thanksgiving expedition, and the stations of NMA32-44 had already been used. The new survey stations of NMA32-47 were entered as NMA32'-47', and the flags will need to be corrected on the next trip to that area. The boneyard area east of NMA31 was surveyed to a room that appeared to be terminal but a very tight ascending tube was found with the older RUM survey tags that was followed and led to the connection to the CM survey above. There were a number of additional leads in the tie-in area that were left for a future trip. The team then traveled out to the old "Sand Passage" at the NW corner of the New Mexico Room, where a new NMC survey was begun by tying into NMB1. The entire sand passage was surveyed except for a climbing lead at the NW end that can be done with a rope toss and maybe 40' of static rope. A boneyard fissure along the west side of the sand passage where it connects back into the New Mexico Room was also surveyed but does a short loop back into the room. The team then traveled out, exiting the Natural Entrance without incident.

December 30, 2017 (Guadalupe Room)

Derek, Kevin, Eric and Nicole entered the cave via the Natural Entrance and traveled out to the Guadalupe Room via the normal route and returned to the fixed rope hung two days earlier near station GC14. The team started surveying by tying into GC14 and shooting up into the room above. As suspected, the main room was confirmed to be a series of blind alcoves, but the tight formation fissure had an opening large enough to fit through. After surveying a short distance



The team surveys the initial room in Gossamer Loft . (photo by Kevin Manley)

it was apparent that the formation lead continues, but it was also obviously extremely delicate and would require full clean gear to continue while mitigating impact. This new area was named Gossamer Loft due to being very delicate. It was decided to leave it for a future expedition so the survey was ended and the team went to the other targeted climbing lead at the bottom of the room near GC30. This climb was scouted and a climb begun along the right side of an overhang. Screw anchors were used and later removed to ascend about 40 feet up to a hole in the wall. A static rope was fixed and the team surveyed up into the boneyard area. The entire area was surveyed in eight shots with several more holes dropping back into the room, but no other leads. Since there were no

other leads the rope was pulled down after the last person rappelled. Since the team had climbing gear, the area was scouted until another potential climbing lead was found along the south wall above GC36. This was climbed using entirely free-climbing methods and natural anchors, but the alcove above was found to be blind. The lead was surveyed and the climb was descended by down-climbing and no gear was left behind. The team then traveled out, exiting the Natural Entrance without incident.

December 31, 2017 (New Mexico Room)

Derek, Kevin, Eric and Nicole entered the cave via the elevator and took a short tourist trip around the Big Room before heading out to King's Palace where they climbed the initial climb towards the New Mexico Room. At the top of the climb, at the base of the first ladder, is a large room that had not been fully surveyed during the last expedition in November, 2017. This was surveyed to the northwest by using NMA3 as a tie-in and starting the NMD series.

There are several large holes in the floor of this room that need to be surveyed but will require a rope to access. A small room to the north was surveyed to a termination. The team then surveyed an ascending fissure

above NMA5 to a large ledge that overlooks King's Palace. The team then surveyed a pair of holes in the floor below NMA4 into a boneyard complex with several connections out into the King's Palace. The team then traveled out, exiting via the elevator without incident.



Gossamer Loft . (photo by Kevin Manley)

Conservation

- Nylon shoe covers were worn to reach some areas in and around the New Mexico Room.
- Low impact aid climbing techniques were used successfully and will be used again in the future to maintain minimum safe standards for climbing while also minimizing impact to the cave.

Rigging

The only fixed ropes that were used were those on the traverse and rappel between Kings Palace and the New Mexico Room. These appeared to be in good condition. The final rope into the New Mexico Room was installed in early 2017 and was observed to have some mold growth on the sheath. A section of this rope was cut from the tail end and tested for tensile strength. The knotted rope had an average breaking strength of approximately 26 kN, which is essentially the same strength measured on an equivalent new rope.

One new rope was installed from the newly discovered Gossamer Loft area above the Guadalupe Room. This 95 foot x 11 mm PMI Pit Rope was rigged to a 2-bolt stainless steel anchor and a single

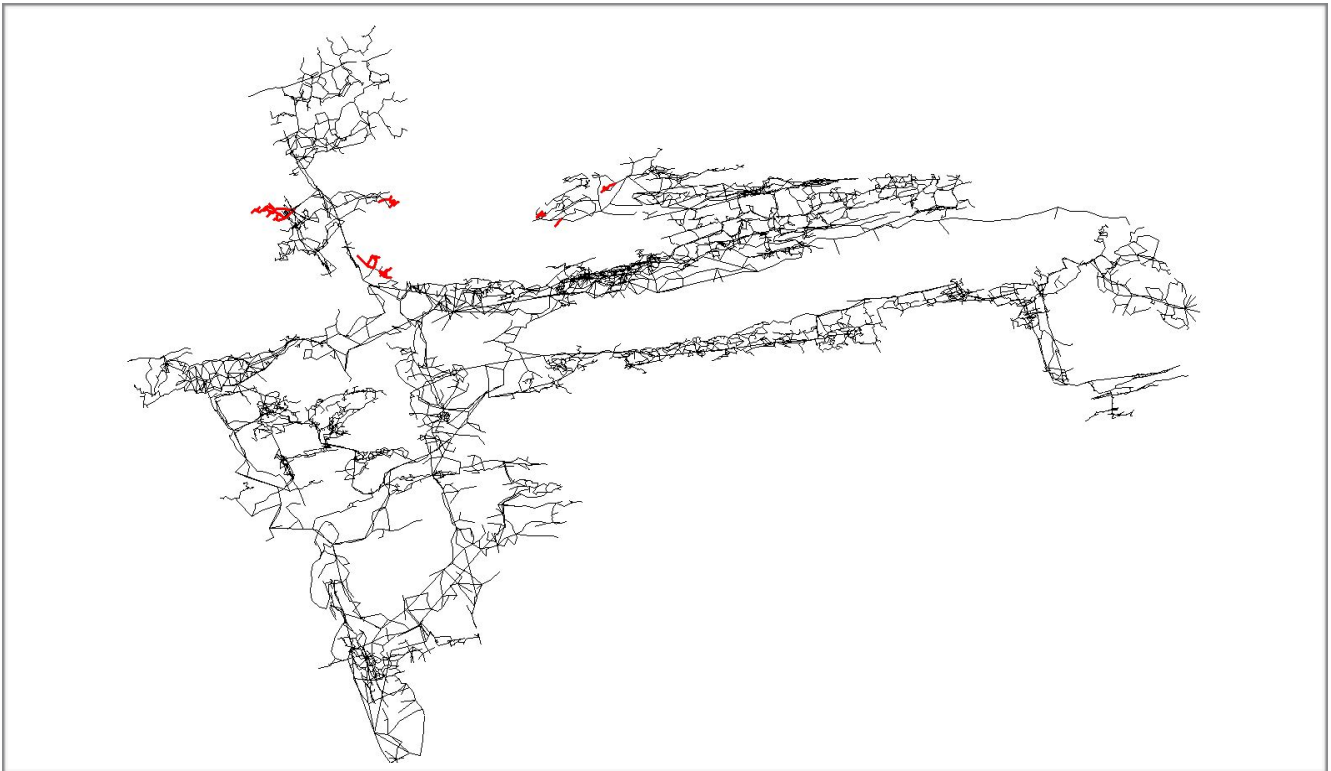
rebelay bolt. Two other climbs were completed, but after completing the surveys of the passages above, and finding no continuing passage, both of these climbs were de-rigged.

Safety

There were no significant safety incidents of note. Team members exited the cave in the same condition they entered.

Maps

Below is a plan view line plot showing the newly surveyed passages (new survey in red).



Work is still underway to complete drafting of the Lower Western Maze below the New Mexico Room. This data contains several bad loop closures, and fixing these will be a priority on a future expedition.

Lead Lists

A list of completed leads from the November and December, 2017 expeditions, and notes on how the leads were surveyed, is shown in Table 1.

Table 1. Completed Leads

Completed Leads (Nov-Dec, 2017 Carlsbad Cavern Expedition)						
Section	Area	Nearest Tie-In	Directions from Tie-In		Dimensions	Comments
			Distance (ft)	Bearing		
Chocolate High	Chocolate High	CDHA2		NW		Surveyed with CDA1-5
Chocolate High	Chocolate High	CDHA3		SW		Not a lead - 10' deep alcove
Chocolate High	Chocolate High	CDHA5		S		Not a lead - 10' deep alcove
Chocolate High	The Balcony	NMA31	0	E		Surveyed with NMA32'-47'
Chocolate High	The Mezzanine	RUM9		SE		Surveyed with NMA32'-47'
Guadalupe Room Complex	Guadalupe Room	GB14	5	N		Surveyed with GB13A-B
Guadalupe Room Complex	Guadalupe Room	GB15	30	up		Climbed and thoroughly checked. No lead.
Guadalupe Room Complex	Guadalupe Room	GB19	10	N		Surveyed with GB23-31
Guadalupe Room Complex	Guadalupe Room	GB19	10	E		Surveyed with GB23-31
Guadalupe Room Complex	Guadalupe Room	GC14	60	up		Surveyed with GC14A-G
Guadalupe Room Complex	Guadalupe Room	GC31	20	N		Surveyed with GC48A-T
Guadalupe Room Complex	Guadalupe Room	GC36	40	SW, up	15Wx8H	Surveyed with GC36A
Guadalupe Room Complex	Guadalupe Room	GC46	20	N		Surveyed with GC48A-T
Guadalupe Room Complex	Guadalupe Room	GC48	20	NW		Surveyed with GC48A-T
Guadalupe Room Complex	Guadalupe Room	GC48O	20	NW, up	4Wx4H	Surveyed with GG1-8
Guadalupe Room Complex	Guadalupe Room	GRB55	20	NE		Surveyed with GRB55A
New Mexico Room	Kings Palace	NMA3	60	N	60Wx40H	Surveyed with NMD1-23
New Mexico Room	New Mexico Room	NMB1	80	W		Surveyed with NMC1-36

A list of new leads from the November and December, 2017 expeditions, and notes on the size, nearest tie-in station, and general observations, is shown in Table 2.

Table 2. New Leads

New Leads (Nov-Dec, 2017 Carlsbad Cavern Expedition)						
Section	Area	Nearest Tie-In	Directions from Tie-In		Dimensions	Comments
			Distance (ft)	Bearing		
Chocolate High	Chocolate High	CDA3	20	W	15Wx2H	Looks like it ends. Too delicate.
Chocolate High	Chocolate High	CDA5	8	W	2Wx7H	Clean/dirty mix
Chocolate High	Chocolate High	CDA5	5	NE	10Wx6H	Headed back towards known cave. Clean.
Guadalupe Room Complex	Guadalupe Room	GC14F	10	SE	2Wx4H	Extremely delicate. Appears to open up.
Guadalupe Room Complex	Guadalupe Room	GC14G	5	SW	4Wx6H	Extremely delicate. Continues.
Guadalupe Room Complex	Guadalupe Room	GC36	10	S	4x3, down	Hole down to large room below.
Guadalupe Room Complex	Guadalupe Room	GC48B	15	NE	12Wx6H	Lead in breakdown.
Guadalupe Room Complex	Guadalupe Room	GC48B	20	NW	6Wx2H	Lead in boneyard/breakdown.
New Mexico Room	Kings Palace	NMA7	15	SW	6Wx4H	Lower level.
New Mexico Room	Kings Palace	NMA8	15	S	6Wx20H	Technical climb.
New Mexico Room	Kings Palace	NMD1	12	N	6x6, down	Pit to lower level. Needs rope.
New Mexico Room	New Mexico Room	NMA13	10	W	12Wx6H	Room with leads.
New Mexico Room	New Mexico Room	NMA32	5	SE	12Wx2H	Into boneyard.
New Mexico Room	New Mexico Room	NMB5	20	SE	40Wx40H	To the Ranger Room.
New Mexico Room	New Mexico Room	NMB6	40	SW	8Wx20H	Down to the Wester Lower Maze.
New Mexico Room	Sand Passage	NMC10	20	up	8Wx15H	Technical climb. Rope toss to stal possible.
New Mexico Room	The Balcony	NMA27	20	E	6Wx4H	Upper level boneyard.
New Mexico Room	The Balcony	NMA32'	6	NW	4Wx3H	Headed back towards known cave.
New Mexico Room	The Balcony	NMA32'	12	N	6Wx3H	Headed back towards known cave.
New Mexico Room	The Balcony	NMA33'	8	SE	10Wx6H	Connects to NMA36. Needs survey.
New Mexico Room	The Balcony	NMA33'	8	S, up	4x4, up	Upper level boneyard.
New Mexico Room	The Mezzanine	NMA46'	10	SE	4Wx10H	Boneyard

Conclusions

The expedition was very successful in working towards completion of high quality maps of both the New Mexico Room/Chocolate High and Guadalupe Room section maps. More than a third of a mile was added to the length of the cave by a single survey team in only four days of work while also completing three technical climbs. All of this was made possible through the efforts of highly skilled and experienced cavers/surveyors and careful pre-planning of survey objectives and logistics. These goals were accomplished while maintaining the priorities of safety and resource protection.

Thanks to all of the expedition team members for their drive, humor, flexibility and hard work.

Finally, thanks to Rod Horrocks, Ellen Trautner, and Erin Lynch in the Cave Resources Office for providing information, training, housing arrangements, and gear preparation. Without their support none of this would be possible.

Sincerely,
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