

Freighting in the Desert

The "largest, most capacious, and most economical wagons ever built were manufactured on the Mojave Desert, for use in Death Valley."

The tourist among the deserts of Nevada and California will hear a good many curious statements from the scattered population he will find there — the one quoted above among the rest — and if he have any interest in horses or teaming, he will find the subject of desert transportation worth inquiry. There is probably nothing like it in all the world.

I got my first glimpse of desert transportation at the Nevada Salt & Borax Co.'s works, at Rhodes' Marsh, on the Carson & Colorado Railroad, Esmeralda County, Nev. The works for producing borax from the crude material, found in the marsh there, used nut-pine as fuel, and the wood was cut on a mountain-top, twelve miles away, piled up on a bench at the head of a canon, and drawn thence in wagons to the works. One of these wagons was standing empty in a wood-yard when I visited the marsh, and, although not the largest in use, it was a sight to make an Eastern teamster gasp. The tops of the wheels came just level with the eyes of a tall man.



Over the divide at Teels' Marsh, some nine miles away, I found more wagons of the same kind, and, finally, down at the mining-camp of Candelaria and the little village of Columbus, where there is another borax marsh, I saw what they called wood-trains — all loaded — trains, so to speak, of two great wagons coupled together and piled high with wood.

The woodsman of the East counts his load great when he has piled two cords on the easy-running bob-sleds in winter-time, but here the wood-hauler piles from five to six cords on each wagon, couples two of them together, and draws the train down the rocky defiles and winding canons of the mountain-side and across the sandy plains, where the wheels of an ordinary Eastern farm-wagon, with its load, would cut in six inches deep.

Of course, no one pair of horses, nor any combination of horses, known to Eastern teamsters, could move, let alone haul, such a load. The swell young gentlemen who handle the ribbons over two pairs of horses, in front of a Newport coach, and the dignified driver guiding four pairs of heavy grays before a New York City safe truck, think themselves drivers of rare skill, and so they are. But the fuel-hauler of the desert commonly drives twelve horses, with the aid of a single rope in place of reins, and never has less than ten before him.

And yet he is but "a raw-hide" driver, when compared with those who had charge of the Death Valley borax teams.

When, in 1883, the manufacture of borax was first undertaken at the marsh in Death Valley, one of the best-known men in the desert region was Charles Bennett. He had taken up a claim on an oasis in

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the Pahrump Valley, in Southern Nevada, and had made a ranch of it that he afterward sold for \$20,000. Here he lived, hundreds of miles from the nearest town, with the Piutes only for neighbors, unless, indeed, the scattered white Arabs of the desert — renegade whites and squaw wives — and one or two white families, who lived at springs, from twenty to 100 miles away, could be called neighbors.

But in spite of this curious taste in the selection of a home, Bennett thrived on his ranch, and accumulated plenty of horses, mules, and cattle, with money in the bank at Los Angeles, through furnishing supplies to prospectors and trading with the Indians. He learned about the doings in Death Valley, and before the fire was built under the pans, had made a contract to haul the product over the desert to Mojave Station, on the Southern Pacific Railroad, as well as to freight the supplies from the railroad to the workmen in Death Valley.

Before the end of the year, when his contract expired, the company making the borax concluded they could do the freighting more satisfactorily with their own teams than by contract, and, accordingly, J. S. W. Perry, now superintendent of the Pacific Coast Borax Company's borate mines in the Calico Mountains, and who had before that been employed in Mojave in the borax business, was put at work organizing a system of transportation over the desert, which should be adequate for the safe handling of all the product of the Death Valley region.



Some of the difficulties in the way of carrying out the company's plans may be mentioned, but scarce described so as to be fully comprehended by one who has not seen the desert to be crossed. Between Mojave and the valley proper there were but three springs of water. The road from the railway station led away over the sandy plain, in an easterly direction, toward a peak locally known as Granite Mountain, but called Pilot Butte in the reports of the California State Mineralogist, and by the early prospectors as well. It was just 50.5 miles across this desert — a desert where the sand-laden wind forever blows, and the sun pours down with intolerable fierceness in summer — to the first spring, which was called Black Water. Beyond Black Water, 6.5 miles away, was Granite Spring, at the foot of Pilot Butte, and the next spring was Lone Willow, twenty-six miles away, at the foot of one of the peaks of the Panamint Range. These last two spaces between springs were comparatively short distances between waters, but the next dry space was worst of all, for it was fifty-three miles to Mesquite Well, near the lower end of Death Valley.

And yet experience had demonstrated that a loaded team could only travel from fifteen to seventeen miles in a day. There was, of course, but one way in which those fifty-mile stretches could be crossed, and that was by hauling water for men and animals for the three days required in the passage between springs. Nor was that all. The desert does not produce a mouthful of food of any kind. Grain and hay had to be hauled as well as water.

There were other obstacles along the trail. It is a mountainous country. The road leaves Death Valley by what is known as Windy Gap. This gap is really what is known in that country as a wash. It is the bed of torrents that come pouring down after a cloud-burst on the mountain top. Volumes of water, in foaming waves twenty feet high, are said to be common enough, and others much higher are

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tuki about by the white Arabs. When a wave has passed, boulders are found scattered in all directions, gullies are cut out, and at the best only a bed of yielding sand is found for the wheels to roll over. Worse yet, this bed of sand rises on an average grade of one hundred feet to the mile for forty miles, while the grade for short distances is four times as much.

The entire length of this desert road between Death Valley and Mojave is 164.5 miles. There was, of course, in all that distance no sign of human habitation. In case of sickness, accident or disaster, either to themselves or the teams, the men could not hope for help until some other team came along over the trail.

The first thing done by Mr. Perry was to obtain, by inspection or correspondence, the dimensions of all varieties of great wagons used by Pacific coast freighters. With these and the load carried by each wagon spread out before him, he proceeded to design the wagons.

The task he had set for himself was the building of ten wagons so large that any of them would carry at least ten tons. The reader who is familiar with railroads, in fact any reader who has traveled at all by rail, must have seen these legends painted on the sides of freight cars: "Capacity 28,000 lbs." "Capacity 40,000 lbs." (rarely) "Capacity 50,000 lbs." With this in mind, consider that these wagons for hauling borax out of Death Valley were to haul ten tons, or half a car load each — that a train of two wagons was to carry a load, not for one of the old-style, but for one of the modern, well-built freight cars, and carry the load, too, not over a smooth iron 20 tramway, but up and down the rocky defiles and canons of one of the most precipitous mountain ranges in the world, the Panamint. Because these were probably the largest wagons ever used, and because they were and still are completely successful, space may well be given to their dimensions in detail. They were as follows:



The hind wheel was seven feet in diameter, and its tire was eight inches wide and an inch thick. The forward wheel was five feet in diameter, with a tire like that on the rear wheel. The hubs were eighteen inches in diameter by twenty-two inches long. The spokes were made of split oak, 5.5 inches wide at the butt, and four inches wide at the point. The felloes were made double, each piece being four by four inches large in cross-section, and the two being edge-bolted together. The forward axle-trees were made of solid steel bars, 3.5 inches square in cross-section, while the rear axles were 3.5 inches square. The wagon beds were sixteen feet long, four feet wide, and six feet deep. The tread of the wagon — the width across the wheels — was six feet. Each wagon weighed 7,800 pounds, and the cost of the lot was about \$9,000, or \$900 each.

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It is worth while to once more compare these wagons with the best modern freight car. The best freight car for use on a steel track weighs 27,000 pounds, and carries a load of 50,000 pounds. Note that the car weighs more than half the load. Two of these Death Valley wagons very often carried 45,000 pounds, and sometimes 46,000 pounds of cargo, exclusive of water and feed for men and team, while their combined weight was but 15,600 pounds, or about one-third of their load. Moreover, all of the ten were in constant use for five years without a single break-down. The works in Death Valley were then closed down, but two of the wagons have been in constant use since, and are at this date (1892) running from the Borate Mine in the Calico Mountains to Daggett Station on the Atlantic & Pacific Railroad, where they bid fair to have an experience equal to that of the wonderful one-horse shay.

The building of the wagons was but the beginning of the work, though it should be said here that the building was all done in Mojave Village by men working by the day — it was not a contract job. While the wagons were building, the road had to be divided up into what might be called days' journeys. The heavy loads were to be brought in from Death Valley, and since only supplies for the workmen were to be carried out, the wagons would have but light loads one way. Of course the teams would not travel so far in a day with a full load as with a light one. Moreover they could not travel so far on the long up-grades, like that in Windy Gap, as they could down the long grade from Granite Spring toward Mojave. So the matter was figured over, and ten stations were established at intervals along the whole route, where the teams could stop for the night when coming in loaded to Mojave, while certain other stations were established for resting places on the way out to Death Valley, these last being located with a view of making a team travel further when light than when loaded.



So far as possible these stations were established at the few springs found along the route. Elsewhere dry camps had to be made. Here the natural lack of water was overcome by a system of wheeled water-tanks, very much like the tanks of street sprinklers. These were made to hold 500 gallons each, and were towed by the teams from the springs to the dry camps, and from the dry camps back to the springs to be filled again when empty. They were necessarily made of iron, because a wooden tank would dry out and fall to pieces when partly empty.

Then, in the language of the desert Arab, the springs were developed. Some holes were cleaned out and enlarged. At others that were not easily accessible from the best trail to be followed by the wagons, pipes were put in and the water run down to convenient tanks. At all the stations from two to four feed boxes were built of lumber, each large enough to hold four bales of hay and six bags of barley, barley being the grain used on the desert as oats and corn are used in the East. The teams bound out to the valley filled the feed boxes, and then emptied them coming in. The greatest distance made by a team in cool winter weather, on a downgrade with no load, was twenty-two miles. The shortest run for hot weather was about fourteen miles.

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But it should be said here, that for the three months in the heat of the summer, from the middle of June until the middle of September, no teaming could be done at all. It was not possible for either man or beast to stand the terrific heat of even the Mojave Desert, not to mention Death Valley.

The teams consisted of eighteen mules and two horses. As was said, the man who handles four trained horses before a society coach, or eight huge Percherons before a safe-carrying track, may think himself a pretty good driver, but in the desert, to use the desert term, he would be a sick raw-hide beside the man who steers eighteen mules with a jerk-line. To compare the one with the other is like comparing a Corinthian yachtsman, or the deck-hand of a harbor scow, to the captain of a Black Ball liner, if we may use a nautical simile in a story of the desert.

In building the desert freight train, the front wagon receives a tongue of ordinary length, while from the rear axle projects a little wrought-iron tongue about three feet long. The second wagon has a tongue, say six feet long, with a stout vertical ring on the end of it, which, when the two wagons are coupled together, slides over the three-foot tail of the front wagon. Then, to hold the two wagons together, a stout chain runs from the front axle of one to the front axle of the other.

The horses and mules are harnessed up in pairs. The horses are attached to the wagon at the tongue, and a great handsome 2,800-pound team it is — gentle, obedient, and strong as a locomotive. Ahead of them stretch the mules, their double-trees geared to a chain that leads from a forward axle. The most civilized pair are placed in the lead and the next in intelligence just ahead of the tongue, while the sinful, the fun-loving, and the raw-hides fill in between. The nigh leader has a bridle with the strap from the left jaw shorter than the other, and from this bridle runs a braided cotton rope a half an inch in diameter, through fair-leaders on each mule to the hand of the driver, who sits on a perch on the front end of the wagon box just eight feet above the ground. That rope is known as the jerk-line, and its length is not far from 120 feet. The team that draws the desert freight train stretches out for more than 100 feet in front of the wagon.



If historians and poets have been justified in writing rapturously about the Arab and his steed, what may we not say of the Death Valley teamster and his mules? To see him soar up over the front wheel to his perch, tilt his hat back on a rear corner of his head, gather in the slack of a jerk-line, loosen the ponderous brake, and awaken the dormant energies of the team with "Git up, you; git up," is the experience of a tourist's life-time. And when at the end of a journey, the teamster pulls up beside the dump with the mules in a line so straight that a stretched string would touch the ear of every mule on either side of the chain, as has often been done, one wants to be introduced and shake hands, as with "one whom lesser minds make boast of having seen." And when one sees the mules settle forward in their collars, feeling gently of their load, until at last the chain stretches as firm as an iron bar, and with one accord start the train of well-nigh 60,000 pounds weight almost as though it was naught, he wants to be introduced and shake hands with the mules, too — that is, figuratively speaking. Their intelligence is such that he would be proud of a speaking acquaintance with them, but if he knew the mules he would be a little shy about getting within hand-shaking range.

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It is wonderfully interesting, too, to watch the mules as they turn a sharp corner in a canon, or on a trail where it rounds a sharp turn on the mountain side. Span after span, near the end of the tongue, often without a word from the driver, will jump over the long chain and pull away on a tangent that the heavy load may be dragged around. Even then the novice wonders how they succeed, for some of the curves are so sharp that the leaders pull in one direction while the wagons are traveling very nearly in an opposite one.

In their short journey after fuel, the drivers of the ten-horse teams often manage their outfits alone. It is but a day's trip from the village to the wood camp and back; but in freighting over the desert with a twenty-animal team, every driver has an assistant called a swamper. The swamper's duties are multifarious. On a down-grade, he climbs to a perch on the rear wagon and puts on the brake; on the up-grade, he reasons with and throws rocks at the indolent and obstreperous mules. As meal-time approaches he kicks dead branches from the grease-brush along the route, and pulls up sage-brush roots for fuel. When the outfit stops, he cooks the food while the driver feeds the animals, and when the meal is over, washes the dishes, which, with the food, are carried in a convenient box in the wagon.

The mules get their grain from boxes which are arranged to be secured to the wagon tongue and between the wheels, when feeding. They eat their hay from the ground. Beyond feeding and watering, the animals get no care — they curry themselves by rolling on the sand, and rolling with cyclonic vigor, at that. The cloud of dust raised when an outfit of mules starts in for a lark is suggestive of a Death Valley sand-storm, and there is nothing to compare with their cries of glee after the rolling is done. The work is not wearing on the animals. It is common and polite to say to a driver, when a thin or scrawny mule is seen in a big team: "Been getting a raw-hide, hey?" which, being interpreted, means: "Ah, I observe you have recently purchased an animal unaccustomed to the work."



Quite as interesting as the teams and the freight trains of the desert are the men who handle them. The drivers receive from \$100 to \$120 per month, and the swampers about \$75. They furnish their own food and bedding. The bill of fare served at a desert freight camp includes bacon, bread, and beans for a foundation, with every variety of canned goods known to the grocery trade for the upper strata. They carry Dutch ovens for their baking, pans for frying, and tin kettles for stewing. On the whole, however, they do not eat much fancy canned stuff, and a cobbler made of canned peaches serves for both pie and cake.

"We don't care much for gimcracks, but we're hell on grub. The gimcracks don't stay by ye," as one said. They rarely carry liquor for use on the road. I observed that empty bottles on some of the desert trails were as thick as good resolutions on the road to sheol, but the teamster did not empty or leave them there. They had served to cheer the road for gentlemen en route to inspect Breyfogle, Gunsight lead, and Peg-Leg mines, discovered by enthusiastic eaters of grub-stakes.

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This is not to say, however, that the teamster is a disciple of Neal Dow, or the Woman's Christian Temperance Union. While the five trains were running regularly between Death Valley and Mojave, the chief care of Superintendent Perry was to keep them moving regularly. He had the road so divided that the teams went out to the valley, got loaded, and returned to Mojave on the twentieth day at 3 o'clock with a precision that was remarkable. At Mojave the teamster was allowed to have the rest of the day and night to himself, and it usually happened that when the hour of starting came next day, he rolled in instead of soared to his perch, and then, as he blinked his eyes and pawed the jerk-line, said:

"Git hep-th-th-th-th yougithop."

It is a matter of record that the mules understood him, nevertheless — that, in fact, these long-eared, brush-tailed tugs of the desert never did but once fail to understand the driver, no matter what his condition. On that occasion the driver, instead of getting drunk, had gone to hear an evangelist preach, and had been converted. Next morning, it is said, when he mounted the wagon and invited the team to go on, the mules, with one accord, turned their heads over their shoulders, cocked forward their ears and stared at him. He had omitted the customary emphasis from his command.

It is a curious fact — a fact that a thoroughbred Kansas boomer will scarcely believe in — that the building of a railroad to a desert mining camp invariably decreases the life and activity seen on the streets and among the business houses. The railroad benefits the mine owners, but injures everyone else. The explanation is simple, however. Before the railroad reaches the active camp, all the supplies are brought by teams, and so are the mails and the passengers. When the railroad comes, the teamsters and swampers drive away to return no more, and the railroad brings none to take their place. In fact, it would take a pretty lively citizen to fill the place of a departed teamster, in any event.

"There was a faro bank running most of the time at Mojave. It was a good thing for us, for the teamsters could go broke in one night and be ready to go out over the road in the morning," said Supt. Perry.

That was by no means a heartless remark, as it seems to be at first blush, for if the teamster did not gamble away his money, he was sure to get drunk and spend it in ways more harmful, while if by any chance he got the wages of two months in his pocket at once, he would rush off to Los Angeles for a spree that would take a fortnight or more to recover from. The teamsters are, with rare exceptions, unmarried men.



The life of a teamster on the desert is not only one of hardship, it is in places extremely dangerous. Mention has been made of the grades up which the loads must be dragged. There are other grades down the mountains, like the one, for instance, on the road from Granite Spring toward Mojave, where the plunge is not only steep, but the road-bed is as hard as a turnpike. The load must go down, and so when the brink is reached the driver throws his weight on the brake of the front wagon, the swamper handles the brake on the rear one, and away they go, creaking, and groaning, and sliding, till the bottom is reached. If the brake holds, all is well, but now and then a brake-block gives way, and such a race with death as then begins cannot be seen elsewhere. With yells and curses, the long team is started in a gallop, an effort is made to swing them around up the mountain-side, a curve is reached, an animal falls, or a wheel strikes a rock or a rut, and, with thunderous crash, over go the great wagons, and the teamster

who has stuck to his post goes with them. There are many graves on the desert of men who died with their boots on, but some of them hold men who were killed while striving to guide a runaway freight-team in a wild dash down the side of a desert mountain.

As one may suppose, the effect of desert life upon the teamsters is almost every way deteriorating. The men who drove from Mojave were out twenty days for each half day in the settlement, and the settlement itself was but a collection of shanties on as arid a part of the desert as can be found outside of Death Valley. They were not men of education or very wide experience. Their topics of conversation were few. The driver and his swamper had very little to say to each other. To all intents and purposes each lived a solitary life. Being thus alone they grew morose and sullen. Their discomforts by night and their misery by day in the desert heat added to their ill nature. They became in a way insane. It was necessary whenever a team came in to inquire of each man separately whether he was perfectly satisfied with the other, and whether a change was desired or would be objected to. If the least ill will was displayed by one toward the other, a new swamper was provided, lest a fight follow on the desert and one kill the other. Even the greatest precaution could not prevent murder. The soil at Saratoga Springs, in the Amargosa Valley, is stained with blood, a human corpse once swung from a telegraph pole in Daggett, and a rounded pile of stones in Windy Gap is marked "Grave of W. M. Shadley," all because human flesh and human brain could not endure the awful strife of life on the desert. Because these are phases, and illustrative phases, of life on the desert, the stories of these crimes should be told.

Fortunately the stories are but brief. A team was coming in to the railroad from the borax works in the Amargosa Valley. At Saratoga Springs they stopped for the night. There the teamster and swamper quarreled, and the swamper hit the teamster on the back of the head with a shovel, as he sat by the camp fire, killing him at once.

Then the swamper buried the body close by the spring and lay down to sleep by the grave. In the morning he hitched up the team and started to drive in. But he was no teamster, and soon had the mules in a tangle, and the wagons, big as they were, overturned, the fall breaking the swamper's leg. In this condition he crawled about among the animals and turned them all loose save one horse, which he somehow mounted and rode away over the long, hot divide, with the broken limb swinging about and the broken bones grinding together, till he reached the works once more.

His terrible condition and untrue story of the trouble with the teamster awakened the deepest sympathy — a feeling which lasted until he had been sent in a buckboard, a journey of 105 miles over the desert, to a surgeon. When the workmen came to dig up the body of the teamster, that it might be removed to a healthful distance from the spring, they found he had been foully struck from behind, and they wanted to lynch the murderer. But they did not do it, and because of the discomforts and dangers of a trip over the desert, neither the coroner or the district attorney of the county would investigate the matter.

Daggett's only lynching was due to the murder of a teamster. His swamper, for some fancied wrong, was moping about the village, drowning his care in liquor. Another teamster advised him to kill the



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offender. Early next morning someone passing the blacksmith shop heard groans behind it, and there was found the offending teamster alive, but with his skull crushed. Beside him lay one of the huge spokes used in building wheels for desert wagons. One end was covered with blood and the hair of the dying teamster.

Two nights later, when it appeared that the Justice was about to turn the swamper loose for want of direct evidence of guilt, a masked mob took both the swamper and the teamster who had advised the crime, from the lock-up. The telegraph poles at Daggett have a single cross-arm. Two ropes were thrown over one of these arms, and nooses in the ends were put about the necks of the two prisoners. Both men had until this time thought the movement a bluff to frighten them into confession. Now they would have begged for mercy, but before the trembling lips could gasp half a sentence the tightening ropes lifted them from the ground.

However, it was really but a bluff on the teamster. He was soon lowered to the ground and advised to leave town. He left. The swamper now "holds down a six-foot claim on the mesa," just beyond the village limits.

