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A DAY AT SOUTH CROFTY MINE IN 1944.

by L.J. Bullen

The school week at Redruth County School (as it was then known) was organised so that we had Thursday afternoons free but attended school on Saturday mornings. This had been so since 1907 and it took the second World War and the clamour for saving of energy to change it! I cannot remember precisely when the new timetable was introduced, but going to school on Thursday afternoons and having the whole weekend free was welcomed by all the pupils. As far as I was concerned, it meant that I could spend all Saturday at South Crofty, provided that a considerable proportion of my homework was completed on Friday evening. My father and the Chief Engineer at the mine, Mr Henry Paull, were old friends and had both served their engineering apprenticeships with the Tuckingmill Foundry Company. Mr Jack Trounson was also a younger friend of my father, as was Mr N.K. Kitto, then Chief Surveyor and later to become Manager. Nevertheless, some of the places I visited and experiences I had would not have been approved by the aforementioned gentlemen.

My routine was to cycle to Robinson's pumping engine house, which was my base for the day. My favourite driver was Joe Buzza. His fireman was called Bray, but was always known by the nickname of 'West Coast' having spent part of his life in that part of Africa. Once my pasty was ordered from the canteen, I would wander around the



New Cookskitchen Shaft showing 90 inch pumping engine house.



Robinson's Shaft showing 80 inch pumping engine house.

Robinson's site. There was a morning shift working on Saturdays at this time, so hoisting of dirt went on apace. I recall standing on the bob plat of the pumping engine and listening to the headgear wheels singing with the speed. The double deck cage (with a waggon on each deck) would burst forth from the shaft collar and it seemed that it would not stop at the landing brace. The winder drivers had such consummate skill, however, that the cage came smoothly to a halt in the brace with the minimum ring of the landing bell. One could then hear the lander put in the 'keps', or chairs as they were called, and the cage descended the few inches and rested on them. Shaft gates were rapidly opened and the safety catch on the waggon released, then it was trammed out to the crushers. An empty waggon was then placed in the cage. The landing bell was rung and the cage rose slightly to allow the chairs to be disengaged. The cage then dropped a sufficient distance to allow the top deck to be dealt with. When all was ready, the knocker line bell was rung and the cage descended to the 335 fathom station once more. In less than two minutes, the other cage would arrive at the landing brace and the whole operation would be repeated.

The crusher station was a noisy place, with the jaw crushers making a loud 'hunk hunk hunk' sound as they reduced the oversize pieces of rock. The ore bins were situated immediately under the crushers and from them the horse drawn trains of ore were taken to the stamps on the side of the Tuckingmill valley. The tramway system once stretched from Palmer's and Bickford's Shafts, via Robinson's, to the stamps. At some time after the war, diesel locomotives were introduced. I often 'hitched' a lift on one of the little, horse drawn trains. As far as I can recall, there were three horses

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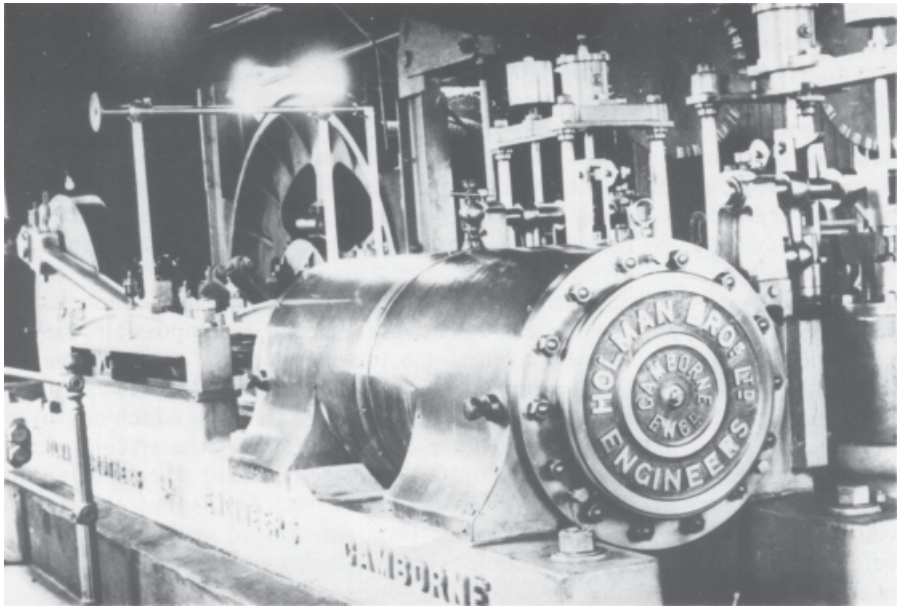
and drivers who were working on contract to the mine. The line was double track and was really quite busy. When loco's were introduced, it was reduced to single track. The horses pulled four waggons, but the diesel loco's were capable of greater loads and, of course, could make the journey to the mill and back much more speedily, hence the reason for dispensing with the second line. One little problem which the loco's had at Robinson's was shunting the waggons under the chutes. A long wire rope had to be employed because the loco was too wide to run by the ore bins. The horses never had any such trouble!

The South Crofty mill had sixty heads of Californian stamps. If one thought the crusher station was noisy, this place was bedlam. Speech was impossible, but the method of drawing attention was by hissing between your teeth. I also believe the stamps attendants became adept at lip reading. The gravity mill with a vast array of treatment tables was served by a very narrow gauge tramway which conveyed the concentrate to the calciners. The calciners 'burnt off' the arsenic which increased the value of the tin concentrate. The smelters paid a better price for clean ore and imposed 'penalties' for various impurities. At this time, the arsenic was a saleable by-product and the arsenic 'soot' was refined and sold. This was before the days of the modern insecticides and pesticides which caused the demise of the bulk sales of arsenic.

After leaving the mill, I walked up the long, wooden trestle to New Cookskitchen Shaft. This trestle carried the tramway from the shaft ore bins to the mill and was operated by men pushing waggons. They carried out this task in all weathers. At New Cook's Shaft, there was a 90 inch Cornish engine which had been installed in 1922. The previous history of this engine is well documented. One of the drivers was Billy House. At one time he had worked at the Carn Brea mine, where he drove the Old Sump 80 inch pumping engine. This was when my grandfather was the Chief Engineer of Carn Brea and Tincroft. I had many conversations with Billy and it was interesting to hear him talk about my grandfather who had died in 1914 - many years before I was born. Billy's stoker rejoiced in the name of Luther Martin. He was eventually one of the drivers after Billy retired. Billy House drove Fortescue's engine at Wheal Grenville from 1915 to the time it ceased work in 1920. He was involved in its removal to New Cook's Shaft when South Crofty purchased the engine in 1922 and drove it until he retired.



The "hotwell" of Robinson's pumping engine.



New Cookskitchen Shaft winding engine - left hand cylinder.

The winder on Cook's Shaft was a Holman drop valve type, but for some reason it was not as lively as Robinson's. The two engines bore the same family resemblance, but were of somewhat different design. Skip hoisting was employed at Cook's Shaft with automatic discharge skips. The skip frame continued upwards in the vertical skip road whilst lugs on the skip body engaged in a track which formed an inverted U, thus dumping the skip into the bin. After dumping, the skip returned to the vertical position and descended for the next load. At this time Cook's Shaft was 340 fathoms deep. The skill of the winder driver was again exemplified by this operation. One must bear in mind that the driver could not see these operations. He had to rely entirely on the use of the shaft depth indicators and marks on the circumference of the winding drums.

It was now time to retrace my steps and return to Robinson's for my pasty. This was consumed sitting in the 'settle' in the corner of the pumping engine house. The hand washing facilities were first class - a dollop of soft soap from the tin and step through the 'plug door' to the hotwell where an abundant supply of hot water was available. A cast iron kettle was boiled very quickly by opening the door of one of the boilers and just placing the kettle inside with one of the stoking tools. When boiled, the kettle was far too hot to handle, but this was overcome by the use of a 'jan luke' from the blacksmith's shop. This tool was a piece of metal with two hooks and a handle which exactly fitted the handle of the kettle. It hung on one of the boiler fittings and was thus always available at brew up time.

On Saturday afternoon the pitmen, i.e. the men who were responsible for the pumps etc. in the shaft, did a riding inspection of the pitwork. During the week they were

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obliged to climb through the shaft ladderways and carry out a very thorough examination. The riding inspection necessitated standing on top of the cage between the chains. If one rode inside the cage, the steel side prevented any sight of the pitwork, hence the need to ride on top. Having placed a canopy on the top shackle to prevent any falling object from dislodging them from their perch, the two pitmen descended the shaft. By prior arrangement with the winder driver, they were halted at each pump station (as opposed to shaft station). They shone their carbide lamps in the direction of the pitwork and carried out a visual inspection, looking for any obvious faults or leaks. The knocker line was then used to signal to the winder driver and the cage descended to the next station. In this way, station by station, the inspection continued until the job was completed. I often rode between these two men and was informed of the intricacies of Cornish pitwork. I might add that, in school holidays, I have also climbed the 2,000 feet with them.

If I was at the mine when Charlie Buzza, a brother to Joe Buzza, was on duty at Robinson's winder, I had a further treat in store. After the shaft inspection was completed, the winder was on standby and the winder driver and stoker had a relatively easy shift. It was during this quiet period on Saturday afternoons that



A new top main rod being hauled into place by the capstan engine at Robinson's Shaft.

Charlie Buzza taught me to drive the winding engine. He would have been dismissed on the spot if he were caught! In actual fact, not only was the shaft not being used, but there was no one underground. On no occasion did I drive the engine when there were men riding. However, when Charlie deemed me sufficiently proficient, I was allowed to bring up the cage when it was summoned to take some equipment underground. As soon as I applied the final brake, he stepped on to the platform and took over the controls. These days are recalled with great pleasure and many happy memories. As a matter of interest, Charlie's stoker, Bill Holloway, was also his brother-in-law. In fact, Robinson's pump and winder were almost a family concern. Bill Holloway had been one of the drivers of the small steam winder on Contact Shaft at the Cligga mine, Perranporth.

Robinson's winder was a very fast engine. It was one of a group produced by the Camborne Engineering Works of Holman Bros in 1907. Two more were installed in the county, one at the Phoenix Mine in East Cornwall on the then new Prince of Wales Shaft, and the other one at Botallock Mine, St Just, on the new Allen's Shaft. The Phoenix engine was sold 'up country' in 1914 and the Botallock winder was purchased by the East Pool & Agar Co. for their new Taylor's shaft in 1924. All these engines were originally fitted with friction clutches on the loose drum side. There was a near disaster at Botallock when a cage load of men was being hoisted on the clutch drum side. When nearing the surface, the clutch began to fail and, in a very short while, the drum began revolving the wrong way. The driver had the presence of mind to reverse the engine and 'chase' the descending cage. Fortunately he had the depth of the shaft in which to perform this manoeuvre and eventually was successful in arresting the descent not far from the shaft bottom. It was very clever driving, combined with a quick presence of mind, which undoubtedly saved the lives of the occupants of the cage. Following this incident, Holman Bros eventually carried out modifications to these engines and jaw clutches were fitted. It should be remembered that these winding engines were entirely in the charge of the driver. There were no safety appliances as are the 'norm' on modern electric winders, such as slack rope indicators, speed settings for men and dirt etc. The only safety device was on the cages, which were equipped with detaching hooks in the event of an overwind.

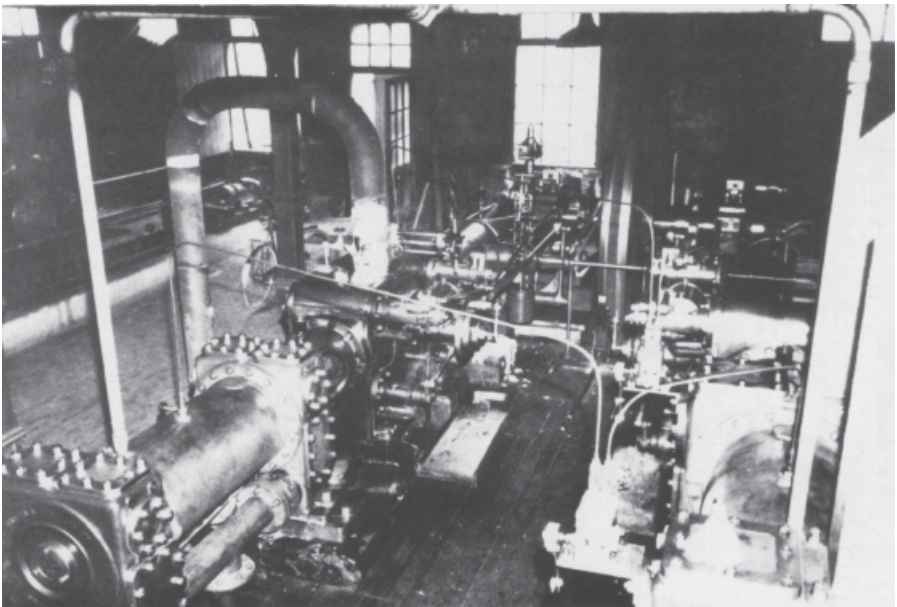
To return to Robinson's winder. It was capable of speeds in excess of 2,000 feet per minute. The noise level was very low - only the 'click' 'click' of the drop valves and the ropes coiling and uncoiling on the 8 foot diameter drums - intruding on the silence. In the same room as the winding engine was a Fraser & Chalmers air compressor. When the two engines were at work, they made a very impressive sight, the compressor moving at a stately gait with the ball governor rotating gracefully, and the winder working at high speed, punctuated at the end of each trip by the shaft signal bells.

One Saturday afternoon, a party of U.S. airmen arrived to be taken underground at Robinson's. It was arranged that the party would be split into two. One half was to descend in charge of a shaftman in the western cage to the 335 fathom station. They would then wait for the other group to descend in the eastern cage with the other shaftman. When all were assembled at the 335 fathom station, they were to be given

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a 'Cooks tour' and eventually return to grass. One of the shaftmen came in to the whim house to see Charlie Buzza to make these arrangements. After all was agreed, the shaftman said, "*There is a lot of 'bull' around outside, so give them a flying ride, Charlie!*" This type of ride was usually reserved for newcomers and unpopular persons! Anyway, Charlie replied, "*When you are in the cage, make sure that all is secure and tell Jimmy (the other shaftman) to give me the usual signal, but follow it with one bell.*" I walked with the shaftman to the shaft collar and saw the Americans getting into the cage. When the first bell rang on the knocker line, I quickly returned to the winder house. Charlie was slowly opening the steam valve and, when the final one bell rang, he released the brake and the engine leapt smoothly into life. The cage stopped at the 335 fathom level. Almost immediately, the bell signals rang from the 335 fathom level with the appropriate indication to come to grass or surface. Charlie commented, "*They haven't got out of the cage.*" At his request I went to the shaft top to see if the other group had entered the eastern cage.

They had not done so. When they had observed their comrades leave the surface so rapidly, they had decided the trip was not for them. I returned to the whim house to inform Charlie of the situation. He then brought the cage to the surface. By this time, I had returned to the shaft and witnessed their arrival. They were as white as sheets! With the usual American generosity, however, packs of cigarettes were handed to the shaftman and, amidst profuse thanks, they boarded their bus and departed. The shaftman who had ridden with the Americans came into the winder and told Charlie that the ride had even frightened him! Charlie's comment was, "*You wanted to get rid*



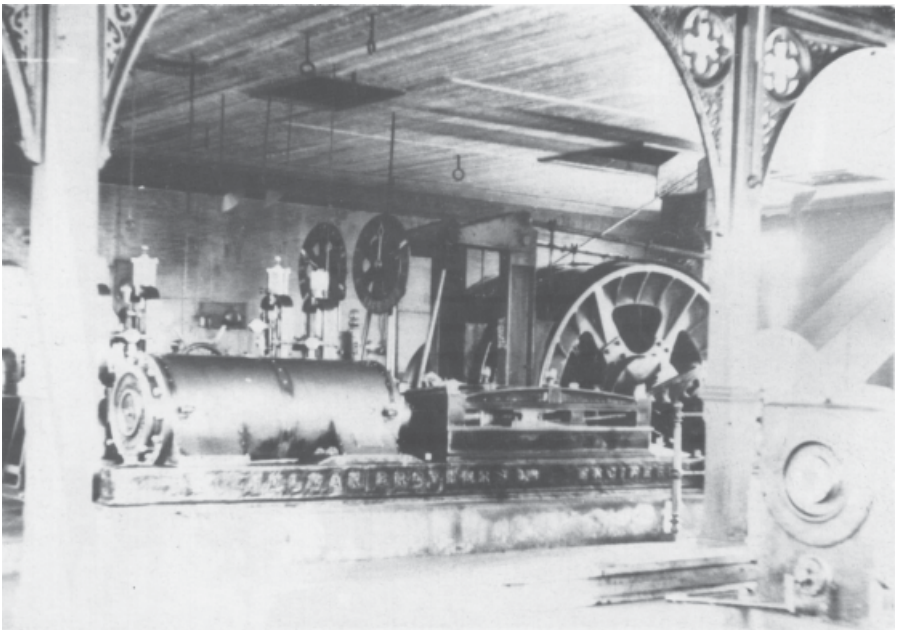
The Fraser and Chalmers compressor at Robinson's Shaft.

of them in a hurry - we have done so - we all have some extra cigarettes and you two shaftman will have an easy afternoon - some people are never satisfied!"

Robinson's winder worked for sixty years, before being replaced by an electric winder in 1967. Charlie Buzza as senior driver was the last man at its driving platform for the ceremonial closing down on May 23rd 1967. He died a few months later. It is estimated that the winder raised about 1,662,500 tons of rock during its long years of service.

Joe Buzza and all the other drivers were justifiably proud of their charge. Captain Samuel Grose's 80 inch engine was a joy to watch and listen to when it was working. Joe taught me the workings of the engine and allowed me to stop it and put it to work. When visitors came, he would permit me to conduct them over the house - especially if it was approaching his 'washing up' time before the shift change!

The casual visitor to the pumping engine house would observe that all was orderly and the driver would probably be sitting in the settle. One could be misled into thinking that he had a fairly easy job. His duties were many and varied. A most interesting time to be in the house was when work was being done on the pitwork in the shaft. The fine control exercised by the engineman in response to the bell signals from the pitman underground, all stemmed from the 'agreement' reached during discussion in the engine house before any work commenced. The engine driver and the pitmen talked



Robinson's Shaft winding engine.

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through the job to be undertaken so that everyone clearly understood the task in hand. Working on heavy pitwork in confined spaces does not allow for any mistakes. A man could be severely injured or killed by one false move. Incidentally, the bell signal system and codes operated in connection with the pumping engine were entirely separate to those used by the winding engine.

The term 'agreement' was also used by the shaftman (those responsible for all aspects of work in the shaft except the pump pitwork), but their discussion would be with the winder driver. On the occasions when everyone was involved in some complicated work in connection with the shaft and pitwork, it called for a fine degree of understanding. There were no radio telephones in those days!

The steam capstan was operated by the pumping engine driver as and when required. New pump rods (main rods as they were known) were kept in a pond of mine water adjacent to the tramway between Robinson's and Cook's. They had spikes driven into them and were periodically rotated so that a uniform immersion was achieved. This pond would 'steam' in frosty weather as the water supply was coming direct from underground. Over the years, I saw nearly every job involved in pitwork maintenance from changing a clack or replacing a sword piece to the renewal of a length of main rod. I was privileged to have accompanied such men as Arthur Jory, Senior Pitman, and Bill Harvey, Senior Shaftman, on their variety of duties.

The 'dry' or changing rooms at Robinson's and Cook's Shafts were very basic by modern standards. A boiler tube sufficed as the instrument for drying the miners' underground clothes. This was heated by a coal fire and the washing facilities were equally rudimentary. A good humoured banter always accompanied changing time in the dry - the more so at the end of the shift. Mining was a way of life, rather than a job. It is understandably difficult for those reading this account of events which occurred some 48 years ago to feel the camaraderie which existed. We were in the throes of World War II. The pay was poor by any standard but the spirit which pervaded the scene was quite remarkable.

At the top of the steps leading from Robinson's pumping engine house to the boiler house, there was a donkey pump. This took steam from the pumping engine boilers and pumped water to a cistern at the top of the crushers. This water was used to dampen the crushers, thus preventing excess dust. I used to keep this minor piece of machinery in spotless condition and looked upon it as 'my' engine.

My day at South Crofty ended around five o'clock when I would wash up with the driver. This ritual always took place between the cupboards under the stairs and the cylinder - pails of water being provided from the boiler house. Joe Buzza cycled a considerable distance over hilly country to and from work. After our final dish o'tay, I took my bicycle down the cylinder opening steps and headed for home.

During school holidays, my mine visits were more frequent. Just before the end of the European war, however, my mother died suddenly and other duties at home severely curtailed my leisure activities. Visits to South Crofty became less frequent, but we

never lost touch. Joe Buzza is, at the time of writing (1992), still living and as alert and interesting as ever. He is one of the few still alive whose companionship I so enjoyed all those years ago.

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