A Short Technical Glossary of Cornish Mining Terms

ADIT	A level tunnel (usually driven into a hillside) in order to give access to a mine, and used for drainage or the hauling of broken ore. Deeper adits did not necessarily connect to surface, and were used to carry water back from distant workings to a pumping shaft.
ANGLE BOB	A simple lever-based device using which the direction of a reciprocal motion (of pump rods, flat rods) could be changed (for example from horizontal to vertical).
ASSAY HOUSE	The mine laboratory, where samples or ore were analysed for their mineral content.
BAL or BALL	From Cornish "*Pal*" a shovel, and hence "a digging" = a mine. Generally applied to earlier mines. See also WHEAL.
BALANCE BOB	A large counterweighted lever attached to the shaft pump rods and used to offset their weight and thus reduce the work of a pumping engine to lifting water alone. A surface balance bob would be mounted adjacent to the shaft on a pair of plinths or on a masonry support at ground level (balance bob mounting), the attached counterweight - a large box filled with scrap iron or rocks - working in an adjacent stone-lined pit. Other balance bobs would be installed in chambers cut into the rock adjacent to the shaft wall as needed to counterbalance the weight of the pump rods, especially on a deep shaft..
BAL-MAID	A woman or girl employed at surface on a mine, generally in the dressing of ore.
BEAM-ENGINE	A type of steam-engine much favoured in Cornwall for use in pumping, winding, and providing the power to crush ores preparatory to dressing on Cornish mines. The power from a large cylinder set vertically in an engine-house was transferred via a massive rocking beam or bob to the pumps in the shaft outside. For winding and crushing, the bob was instead attached to a flywheel and crank on a LOADING next to the BOB-WALL (or in the case of all indoor engines, the side wall). In most cases, the engine house formed an integral part of the framing of the engine.
BEDSTONE	The granite slab which formed the foundation for the cylinder of a Cornish Engine.
BLOWING-HOUSE	An early form of tin smelting furnace, small in scale and using charcoal as a fuel.
BOILER HOUSE	A generally lightly-built structure attached to an engine house, and designed to contain the horizontal boilers for a steam engine; the associated chimney stack may be attached to this structure, or built into one corner of the engine house.
BRATTICING	Timber partition work in a mine, for instance the LAGGING BOARDS which lined the upper section of a shaft where it ran through soft ground.

BUCKING	The breaking down of copper ore on an anvil to about 10mm in diameter by bal-maids using small hammers, after which the ore was separated from the waste by hand. This process followed cobbing, in which it had been broken down to about 25mm in diameter, the waste again being hand removed. These processes, through which the majority of the highest quality copper ore was recovered, took place within roofed structures called bucking houses.
BUDDLE	A device for concentrating tin ore. In the mid-19th century these most usually took the form of a circular pit with rotating brushes; the tin from the stamps was fed into the centre or side of the pit and was graded by gravity, concentrating the heavy ore near the inlet point. These were often mechanically worked. Earlier buddles were trapezoidal in shape, and manually operated. A variation used in tailings works to treat sands and slimes was the ROUND FRAME: a free-standing, all wooden, mechanically-actuated buddle, whilst a further variation was the dumb buddle or dumb pit, which were not mechanically operated.
CALCINER	A furnace and heating chamber in which ores were roasted to drive off impurities such as sulphur and arsenic. These were also known as Burning Houses, later patterns being of REVERBERATORY design. The Brunton pattern calciner, introduced in the mid-19th century, was mechanically powered, and operated on a continuous basis, unlike earlier designs. Other patterns of calciner were also devised, the majority named after their designers (eg Oxland, Hocking and Loam).
CAPSTAN	A manually or steam-operated winding drum, usually installed on a mine to raise pitwork from the shaft for maintenance or repair.
CATARACT PIT	(or cock pit) A sub-floor area within the foundation levels of an Engine house between the Cylinder Plat and the Bob Wall, containing the regulating apparatus, and giving access to cylinder hold-down bolts.
CILL	The base of a window or other wall opening.
COFFIN or GOFFEN	The narrow excavation resulting from stoping on a lode being carried to or from surface on part or all of a lode. See also GUNNIS, STOPE, OPENWORK.
CONDENSER	The cast-iron cylinder set in a tank of cold water immediately in front of the bob wall of an engine house in which the exhaust steam was condensed, creating a vacuum which greatly increased the efficiency of a steam engine. For a pumping engine this equipment was often contained within a pair of masonry walls projecting from the bob wall towards the shaft.
COUNT HOUSE	Properly ACCOUNT HOUSE, but generally shortened. The mine office, sometimes incorporating accommodation.
CULVERT	A small tunnel constructed to carry a channel of water.
CYLINDER OPENING	The often large, arched opening in the rear wall of an engine through which the steam cylinder was brought into an engine house during the erection of the engine. This opening was generally subsequently closed

	off with a timber partition and usually incorporated the principal doorway into the engine house.
CYLINDER PLAT	The massive masonry base on which the cylinder of a Cornish Engine was bolted down (see also BEDSTONE).
DRESSING	The concentration of the tin (copper or other ores) contained in the rock excavated from the stopes of a mine. Carried out on DRESSING FLOORS.
DRESSING FLOORS	An (often extensive) area at surface on a mine where the various processes of concentration of ore took place - these consisted of crushing or stamping to attain a uniform size range, sizing (particularly on later mines), separation of waste rock, concentration (generally mechanically and hydraulically on tin mines, manually on copper mines), the removal of contaminant minerals (by calcination, flotation, magnetic separation), and finally drying and bagging for transportation to the smelter. Tin floors in particular were generally laid out down a slope to reduce mechanical or manual handling between stages in the process.
DRIVE	(alternatively lode drive or heading). A tunnel excavated on the line of a lode as the first stage of the development of a STOPE.
DRY or CHANGE HOUSE	(earlier MOOR HOUSE) The building within which miners changed their clothes before and after going underground. Some were heated by steam pipes connected to the engine boilers. Where there were large numbers of women or children employed on a mine, there might be two drys - one for men, the other for women and children. The pithead baths or showers found in collieries were rarely found in Cornwall.
DUMP or BURROW (alternatively spoil dump, spoil tip).	A pile of waste material, usually from a mine or quarry. May contain primary waste (where this could not be disposed of underground) or waste from various stages in the dressing process. TAILINGS LAGOONS stored the extensive slimes from the final stages in the process; in earlier mines these were flushed over cliffs or allowed to wash away in streams or rivers.
EDUCTION PIPE	The large diameter pipe through which exhaust steam was drawn into the condenser set outside the bob wall.
ENGINE HOUSE	A building designed to contain steam, gas, oil or electric engines on a mine or other works. When forming part of the framework of a beam engine, these were particularly strongly constructed.
FINGER DUMP	A linear dump of waste material from a mine or quarry, flat-topped to allow material to be barrowed or trammed along it, and often equipped with a temporary tramway track.
FLAT RODS	Reciprocating (or very occasionally rotative) iron rods used to transfer power from a steam-engine or water-wheel to a remote location.
FLUE	A masonry-constructed tunnel or conduit connecting a furnace to a chimney stack

GIRDER	The massive timber beam set across an engine house just below top floor level to which the parallel motion was attached and on which the spring beams sat.
GUNNIS	A narrow linear excavation left where a lode has been worked, most commonly used when open to surface. See COFFEN
HEAD or CROP	The richest part of material in a buddle - nearest its feed point.
HEADFRAME	The tall construction set over a winding shaft which carried the sheave wheels over which the winding ropes ran. Headframes usually contained ore bins or ore chutes to allow the broken rock in the skips or kibbles to be tipped into trams at surface.
HORIZONTAL ENGINE	A steam engine where the cylinder(s) are set on a horizontal bed and the piston rods are attached via a cross-head to a crank and flywheel.
HORSE WHIM	Similar to a capstan, but in this case power supplied by a horse walking around a circular platform (PLAT) was applied to an overhead winding drum; frequently used for winding from small shafts on Cornish mines, especially during exploratory work and shaft sinking. The smaller under-gear whims found in some 19th century farms were little used on mines.
JIG	A large mechanically or hand-operated sieve set in a tank of water using which ore could be separated by waste. Sometimes constructed in groups within jigging houses.
KIBBLE	A large, strongly-constructed, egg-shaped, iron container used for ore and rock haulage in earlier shafts. Superseded by SKIPS.
LAGGING BOARDS	The timber planks lining the upper part of a shaft, or where it ran through soft ground.
LAUNDER	A wooden or steel trough used to carry water or other liquids; often used to feed water or finely-divided material in suspension around a dressing floor.
LABYRINTH (colloquially "lambreth")	A series of interconnected masonry-constructed chambers set adjacent to one another on whose walls the arsenic vapourised in a calciner or arsenic furnace was condensed out. The gas followed a zig-zag path through such groups of chambers, and one end of each chamber would be closed off with a door through which the condensed arsenic could be collected.
LEAT	An artificial water-course, built to carry a supply of water to a mine.
LINTEL	The horizontal timber or stone support above an opening in a wall or structure.
LOADING	The masonry platform in front of an engine-house (or elsewhere on a mine) on which machinery such as cranks, flywheels or winding drums were mounted and on which the reciprocal motion of the sweep rod attached to the beam was turned into a rotative motion.

LOBBY	The excavated cutting running up to an adit portal.
LODE	A linear area of mineralisation underground. In other parts of Britain a VEIN, or SEAM. Generally vertical or near-vertical, and often extending for considerable distances along its strike.
LODE-BACK PIT	A shallow shaft dug from surface into shoad or the upper part (backs) of a lode, from which ore could be extracted from shallow stopes to the depth of the water table or just below. Waste material was generally dumped adjacent to the shaft mouth.
MAGAZINE	Small strongly built store containing explosives (gunpowder or dynamite); often circular, sometimes with additional enclosing walls to contain the blast of an accidental explosion.
MELLIOR STONE	The granite bearing stone in which the upright shaft of a HORSE WHIM ran.
MIDDLES	The material in a buddle found between the crop and the tailings, this generally containing enough ore to warrant its re-treatment.
OPENWORK or BEAM.	A mineral extraction site open to the surface, and similar to a quarry but usually distinguished by its elongated shape, and steep sides. Generally applied to features broader in extent than a GUNNIS OR COFFIN. A variety is a STOCKWORKS, where an area of ground containing a large number of small parallel lodes was removed wholesale.
OVERBURDEN	The topsoil and subsoil removed in the process of opening or extending a quarry, streamworks or mine.
PELTON WHEEL	A small enclosed water turbine, working at high pressure and rotational speeds. In use from the later 19th century.
PITWORK	The term used to describe the pump rods, rising main, shaft guides (buntings) etc. within a shaft.
PORTAL	The entrance to an adit beyond its LOBBY. Often timbered or stone vaulted.
PROSPECTING PIT FOSSICKING PIT OR COSTEANING PIT	A small pit dug in search of minerals, and almost always found in linear groups, often arranged cross-contour, or at right angles to the projected strike of known lodes or deposits of shoad. A COSTEANING TRENCH is a linear excavation cut for prospecting purposes.
RAG FRAME or RACK FRAME	A mechanically vibrated inclined table-like surface on which very fine slimes in slurry form were treated to recover their tin. Large mines would have hundreds of such frames arranged in groups.
REVERBERATORY KILN	A design of furnace in which there was indirect contact between the heat from a hearth and ore to be roasted, usually by incorporating a baffle flue.
ROSE	The cast-iron strainer attached to the bottom lift of pumps.

ROTATIVE ENGINE	A beam engine in which the reciprocating motion of the beam was converted to rotary motion via a sweep rod, crank, and flywheel.
SETT	The legal boundary within which a mine could extract minerals.
SETT	One of a series of stone supports for a tramway, performing the same function as sleepers.
SETT	One of the components of timber framing of an adit where it ran through loose ground; also the timber framing of a shaft to which the shaft guides and LAGGING BOARDS were attached.
SHAFT	A vertical or near-vertical tunnel sunk to give access to the extractive areas of a mine.
SHAKING TABLE	An inclined, mechanically vibrated table on which fine tin (as sands or slimes) in suspension in water was concentrated by relative density.
SHEARS or shear legs.	A tall timber frame carrying a pulley or sheave wheel erected in front of an engine house over a shaft and used for the installation and maintenance of PITWORK.
SHOAD or SHODE	Ore weathered from the load and moved (in geological time) downslope under the force of gravity. Material reaching a river valley would be to some degree concentrated before redeposition in horizontal beds. These beds of detrital material (placer deposits) were exploited in streamworks.
SKIP	A (generally elongated) iron or steel container equipped with small wheels or brackets running on the shaft guides (buntings) and used for rock and ore haulage in later mines.
SPRING BEAMS	The pair of longitudinal timbers extending from the rear of an engine house parallel to and on either side of the BEAM at top floor level. These served to arrest any unwanted excess indoor motion of the beam via catches set onto its rear and were extended out from the front of the house to form the foundation for the bob-plat (the timber platform from which the bearings on the outdoor section of the beam could be serviced).
STACK	A chimney on an industrial site, used to carry away smoke or fumes from boilers, furnaces and calciners. Often situated at the end of a Flue.
STAMPS	A mechanical device for crushing ore-bearing rock to a fine sand. Heavy vertically-mounted beams (or later iron rods) carrying cast or forged iron heads were sequentially lifted and dropped onto the prepared ore beneath them by a series of cams mounted on a rotating drum; this usually being driven by a water-wheel or rotative steam engine.
STOPE	Excavated area produced during the extraction of ore-bearing rock. Often narrow, deep and elongated, reflecting the former position of the lode. Where open to the surface, these form GUNNISES or COFFENS.
STREAMWORKS	An area worked for detrital (redeposited) tin deposits by shallow

	excavation. Often characterised by linear dumps, river diversion, and evidence for leats. Some streamworks (dryworks) exploited deposits of shoad in now dry valleys and on hillsides, where concentrations of this material were economically workable. Leats and reservoirs were necessary to work these sites, and are characteristic of them.
STRIPS (settling strips)	Elongated shallow tanks in which the primary settlement and subsequent separation of tin ore from waste took place after it had been stamped.
SWEEP ROD	The elongated iron rod which connected the beam of a Cornish engine to a crank and fly wheel.
TAILINGS	The waste sand and slime from a mine dressing floor, not containing workable quantities of mineral.
TAILRACE	The channel along which water flows after having passed over or under a water-wheel and is then generally returned to the water course.
TRIBUTE	A system of payment in which groups of miners bid against one another for contracts to work sections of the mine for a percentage of the value of the ore raised from that area.
TUTWORK	A system of payment whereby groups of miners contracted to work on a "payment by results" system at previously-agreed rates, usually for shaft sinking or driving levels.
VANNER	A mechanically-driven, laterally vibrated, inclined rotating belt on which fine tin-containing material in suspension in water was treated by relative density. A VANNING SHOVEL was used to test the relative concentration of ore in a sample of finely crushed ore or partially dressed ore.
WATER-WHEEL	Wheel fitted with buckets or paddles around its periphery, and driven by the weight or force of a stream of water directed onto them.
WHEAL also WHELE, WHILE, HUEL.	A mine.
WHEELPIT	A structure built to house a water-wheel, often excavated and stone-lined, but sometimes free-standing.
WHIM PLATFORM	The level and usually circular platform on which a horse-whim was sited.
WHIM	The winding gear used for hauling from a shaft; consists of a power source and a winding drum. See Horse-Whim