Nomination to the Queensland Heritage Register under the provisions of the *Queensland Heritage Act 1992*

Place	Mount Molloy sawmill remnants
Former or other name	Polenz & Johnson's sawmill
	J.M. Johnson Pty. Ltd. sawmill
	Molloy Sawmills Pty. Ltd.
	Rankine's sawmill
Location	Lot 1, Santowski Crescent, Mount Molloy 4871
	(corner of Santowski Crescent & Peninsula Development Road
	(Mulligan highway))
RPD	Lot 1,2, 4, 5, & 100 on SP237062
Local government	Tablelands Regional Council
Heritage boundary	Refer to attached map

Statement of cultural heritage significance

J. M. Johnston's sawmill at Mount Molloy is a place of cultural heritage significance for its historical, scientific, aesthetic and social significance and satisfies one or more of the criteria in s34(1) of the Queensland Heritage Act 1992 as evidenced by, but not exclusive to, the following statement of cultural heritage significance, based on criteria (a), (b), (c), (d), (e), (f), and (g).

Figure 1 General view (left to right) of the chimney base, Stirling boiler, Walkers steam winch, blowdown tank, and Marshall steam engine at the Mount Molloy sawmill site (September 2010)

Criterion (a) the place is important in demonstrating the evolution or pattern of Queensland's history

The Mount Molloy sawmill is important in demonstrating the pattern of Queensland's history. The sawmill was a significant supplier of logs and sawn timber in Northern Queensland. The sawmill operated on the site between 1913 and 1963 and was the major employer in town making a significant economic contribution. The sawmill was built in 1913 by J. M. Johnston & R. Polenz in the township of Mount Molloy, next to the railway line. The remaining elements of the boiler, chimney, main steam engine and steam winch provide tangible evidence of the presence of a sawmilling industry in the town.

The sawmill is important for its ability to demonstrate the transition from the first pattern of regional settlement associated with a relatively short period of mining activity to a longer term pattern of settlement based on sawmilling of local natural timber resources, and its facilitation of agricultural settlement through land clearing. The proximity of the sawmill to the stands of timber demonstrate the pattern of establishing sawmills in close proximity to their source of timber. This is reflective of the transport methods of the period starting with logs hauled by animals, and later by trucks, and the need to keep the haul distances to a minimum. The sawmill was also located next to the railway line and demonstrates the efficiency and method of shipping sawn timber and logs from the sawmill to their markets.

The sawmill is significant because the surviving fabric is associated with a historic method of providing power. The boiler and associated steam engine demonstrate how steam was generated and then used, and the self sufficiency of the mill prior to the widespread use of electricity and motors to drive the saws. These ruins alone do not tell the whole story of sawmilling on the site, but their location, the relationship between the boiler, steam engines, and tramway formation, combined with photographic and documentary evidence, contribute to a greater understanding of an important phase in the evolution of Queensland's timber industry. The Stirling water tube boiler demonstrates a boiler constructed with bricks used to form an integral part of the structure.

Criterion (b) the place demonstrates rare, uncommon or endangered aspects of Queensland's cultural heritage

The steam plant at the Mount Molloy sawmill site is a rare example in Queensland of a steam driven sawmill. It provides rare surviving physical evidence of early 20th century boiler design and construction. Stirling water tube boilers were relatively uncommon, with their use generally confined to larger boiler installations at mines, factories, or hospitals. The design of this form of boiler was distinctly different to other manufacture's at the time. The Stirling water tube boiler at Mount Molloy is thought to be the only surviving example in Queensland.

The Stirling water tube boiler, Marshall cross-compound horizontal steam engine, and Walker steam winch are all substantially intact, and retain a high degree of integrity. No sawmill machinery or buildings remain, and all timber elements have gone. Steam powered sawmills were once common throughout Queensland. There are no known surviving sawmill sites in Queensland comparable to the Mount Molloy sawmill which demonstrate the use of a large Stirling water tube boiler, or the use of a compound steam engine for powering the sawmill.

Criterion (c) the place has potential to yield information that will contribute to an understanding of Queensland's history

The Mount Molloy sawmill site has the potential to yield information about the technology, layout, construction, and materials of the steam boiler and associated steam engines. The site also has archaeological significance in relation to the associated sawmilling buildings which are no longer extant. The site has the potential to contribute knowledge that will assist in comparative analysis of similar places and machinery.

The Mount Molloy sawmill site is an early 20th century example of a substantial town based sawmill, and a rare surviving example with significant interpretative potential.

Criterion (d) the place is important in demonstrating the principal characteristics of a particular class of cultural places

The Mount Molloy sawmill boiler and steam engines are an exceptional example of steam plant associated with a sawmill operation. The mill is located in the Mount Molloy township, next to a railway siding, and in proximity to well timbered areas. The boiler, and the steam engines remain in their original positions, and the railway formation is visible. This allows allow interpretation of the site in relation to the movement of logs into the sawmill precinct, their processing through the mill, and despatch to customers via the railway.

The sawmill site demonstrates a way of life that has made a noticeable contribution to the pattern or evolution of Queensland's history. The place is important in illustrating a type of local power generation for a process significant in Queensland's history.

Criterion (e) the place is important because of its aesthetic significance

The Mount Molloy sawmill site is important because of its aesthetic significance. The site possesses an evocative quality generated by the strong visual impact of the dominant boiler structure on an otherwise cleared site. It is a large and striking feature prominent in a relatively small town settlement, and constitutes a local landmark, visible from the main road through the town.

Criterion (f) the place is important in demonstrating a high degree of creative or technical achievement at a particular period

The Mount Molloy sawmill is important in demonstrating a high degree of technical achievement. Many sawmills were built in the forests and were transient in nature and were moved on a regular basis as the forest was logged. The Mount Molloy sawmill was a substantial and permanent town based sawmill. The layout of the sawmill demonstrated a practical approach to the flow of logs through the mill to maximise efficiency.

Criterion (g) the place has a strong or special association with a particular community or cultural group for social, cultural or spiritual reasons

The Mount Molloy sawmill ruins are important to the local community as a symbolic representation of the history of the town, and are a dominant and noteworthy landmark within the township. They provide a tangible link and explanation of the reason for the presence of the town.

Criterion (h) the place has a special association with the life or work of a particular person, group or organisation of importance in Queensland's history

History

There were several sawmills in the Mount Molloy area, and several publications associate the Mount Molloy sawmill with the Mount Molloy copper mine and smelter. There were actually two different sawmills, built at different times at different locations. The *Mining Heritage Places Study: Northern & Western Queensland* report, p.415 associates the Mount Molloy sawmill with the copper mine, which is incorrect. There was a small sawmill at the mine servicing their needs, the mine built a sawmill at Mareeba in 1909, and the Mount Molloy sawmill was built around 1914. The following provides the background to the copper mine sawmill, followed by a history of the Mount Molloy sawmill.

Mount Molloy Mine & Railway Development

The Mount Molloy Copper Mine syndicate was formed in 1902 taking over an earlier claim mined by James Forsythe and James Mulligan. A smelter was erected at the site after it was found the ore was unsuitable for smelting at the Chillagoe smelters. A sawmill, built c.1904, was used by the Mount Molloy Copper Mine on their mining lease and supplied all the timber requirements for the mine shafts and buildings.[1]

Figure 2 Sawmill at Mount Molloy Copper Mine, May 1905. The sawmill is to the right of the photo and shows a boiler and steam engine inside an open sided building. Logs waiting to be sawn are outside the building and to the right are off cuts and sawn timber (Queensland Government Mining Journal, 15 May 1905, p.220)

[1] *Queensland Government Mining Journal*, 15 June 1905, p.273

The smelters commenced operation in November 1904[2], and temporarily closed in February 1906 due to a lack of ore. A railway line was built to Mount Molloy from Biboohra under the mineral tramway provisions of the Mining Acts and this was completed in August 1908. It was built primarily to serve the Mount Molloy mine.[3]

To better utilise the railway, the mining company secured a timber concession from the government to harvest ten million super feet of timber within a five mile radius of Mount Molloy. The small sawmill at the mine was not big enough to handle this amount of timber. The company built a new sawmill at Mareeba. The mine commenced building the sawmill in September 1908, and spent £5,000 on its construction. They already had orders for 1,000,000 feet of timber.[4] By September 1909 the Mareeba sawmill was working full time.[5] The Mount Molloy mine closed by early 1911 due to a lack of suitable ore.[6]

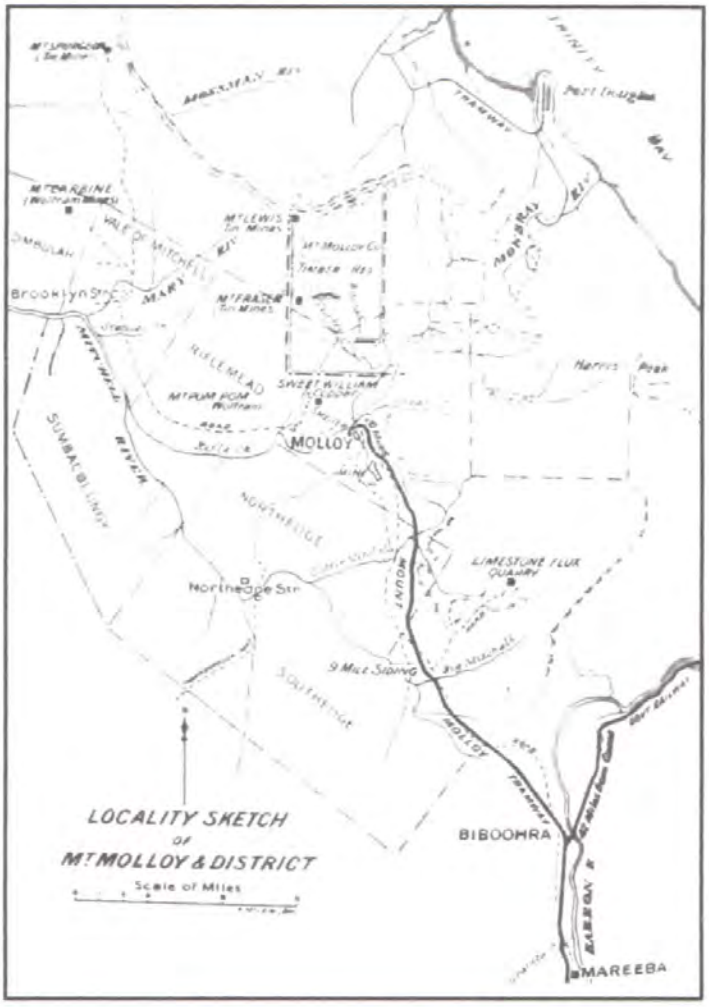

Figure 3 Map of the Mount Molloy railway & timber concession (Queensland Government Mining Journal, 15 September 1908, p.456)

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[2] *Queensland Government Mining Journal*, 15 May 1905, p.222
[3] *Queensland Government Mining Journal*, 15 September 1908, p.456
[4] *Queensland Government Mining Journal*, 15 September 1908, p.446
[5] *Queensland Government Mining Journal*, 15 September 1909, p.476
[6] *Queensland Government Mining Journal*, 15 March 1915, p.108

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Sawmill at Mount Molloy

John Michael Johnston was known to John Moffat, an investor in mines in the region, and he came to Mount Molloy around 1913 to set up a sawmill. Rolley Polenz who was the manager of the Mount Molloy smelter helped J. M. Johnston to start a sawmill in town. Prior to this the only timber available was pit-sawn timber from Santowski's property at Rifle Creek.[7]

The sawmill was purchased by Johnston & Polenz in January 1914.[8] The previous owner is not mentioned and it's not clear if the boiler and engine were already there. Later references suggest Johnson built up the mill suggesting the boiler could have been installed at this time. It's also not clear how long the mill had been in business prior to its purchase. The *Cairns Post* commented that at the time of purchase the mill was only a small concern, and Johnston was to build it up into one of the most important sawmills in the north.[9] J.M. Johnston was the owner of a number of sawmills including one at Stratford and was a significant influence in the ~~in~~ timber industry in the region.

The sawmill was a regular advertiser in the Cairns Post during between 1914 and 1916, advertising as sawmillers and timber exporters.[10] The sawmill processed many of the local timbers including hickory, and kauri pine trees. Johnston had improved and added to the mill up until 1926.[11]

Figure 4 Bullock team hauling logs to the Mount Molloy sawmill. The stack of the boiler can be seen in the distance (Cairns Historical Society, P05163)

Logs were originally hauled to the sawmill by bullock or horse teams, and these teams were still being used in the 1930s along with more modern practices. The sawmill was using three motorised lorries as well as Caterpillar crawler tractors in the bush by 1930.[12] Animal teams could often get back into the forest earlier than motor vehicles after the wet season. Timber was despatched to customers via rail. Often after rain it was difficult to cart logs to the mill, and the mill then relied on

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[7] Little, p.24
[8] *Cairns Post*, 15 January 1914, p.6
[9] *Cairns Post*, 8 May 1943, p.6
[10] *Cairns Post*, 18 January 1916, p.3
[11] *Cairns Post*, 21 April 1934, p.12
[12] *Cairns Post*, 16 August 1932, p.7

logs stockpiled at the mill. Once these ran out the mill would close until local roads became passable again.

Figure 5 Mount Molloy township, 1919. The stack from the boiler and the log yard of the sawmill are visible to the left of the photo (Little, p.62)

Up until around 1927 the mill employed more than one hundred workers, with an average output of four to five train loads per week. After this, output of the mill declined with only two to three train loads per week being sent, and only 60 workers.[13]

When Johnston went to manage his mill at Stratford near Cairns in 1929, he appointed Walter Colley to manage the Mount Molloy mill. Colley managed the mill for many years, and was followed by Jack Hunter. Jack Hunter was killed when crushed between two railway trucks while the train was shunting. By 1934, ~~John~~ William (Bill) Santowski ~~snr~~ was the manager.[14]

The sawmill was vulnerable to fire, and parts of the mill were burnt on several occasions. The first recorded time was on 14 June 1932. Fortunately it was a still night, and when the fire started at midnight near the boiler, the mill workers were soon able to contain the fire. The fire was largely confined to the repair workshop and the boiler and engine were saved along with the stock of timber.[15]

In August 1932 it was reported by the *Cairns Post* that the Mount Molloy sawmill had been sold by J. M Johnston to Mr. Colley, and all employees were notified of their termination, and to reapply to Mr Colley for their re-employment.[16] J. M. Johnston had also provided housing in the town for mill employees and concurrent with the sale of the mill, he sold the properties to the employees.[17] The report of J. M. Johnson completely selling out his interest in the mill was contradicted in the *Cairns Post* several weeks later. The paper reported that the sawmill had been registered as the Molloy Sawmills Pty. Ltd., a private company under the directorship of Messrs J. M. Johnston, W. Marlay, and W. J. Colley. The paper also reported that the mill was working again after the fire, and the

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[13] *Cairns Post*, 16 August 1932, p.7
[14] Little, p.33, *Cairns Post*, 7 February 1934, p.12
[15] *Brisbane Courier*, 15 June 1932, p.7 & *Cairns Post*, 14 June 1932, p.5
[16] *Cairns Post*, 16 August 1932, p.7
[17] *Cairns Post*, 26 August 1932, p.14

engineers workshop had been rebuilt, and a good stock of logs were on hand to carry the mill through the wet season.[18]

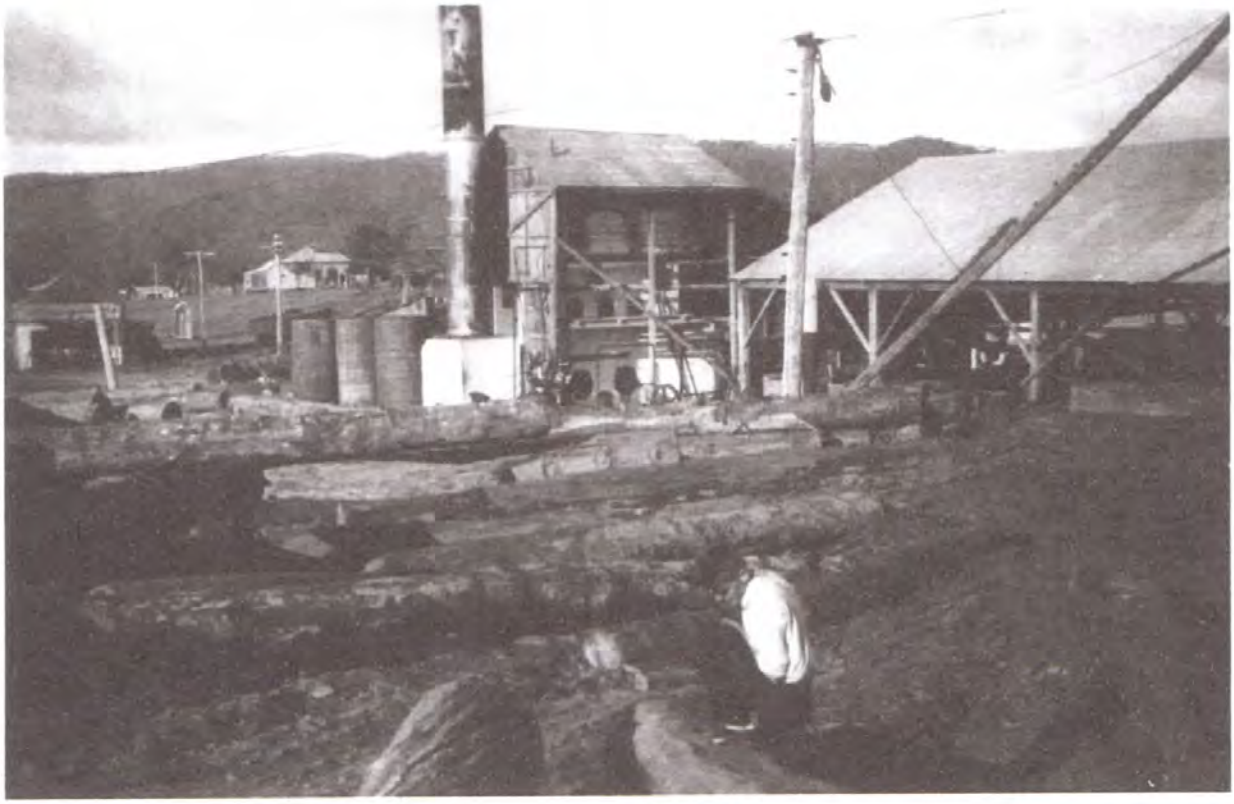

Figure 6 Mount Molloy sawmill, c.1938. The original chimney was on a shorter brick base immediately behind the Stirling boiler, and the three tanks next to the chimney held water for the boiler. The boiler was housed in an open sided building with the brickwork painted white. The flywheel of Marshall engine is visible in shed on the right the Walkers winch is visible in front of the boiler along with associated stiff leg derrick crane. Wagons on the railway line are visible to the left of the boiler house (Cairns Historical Society, P12831)

The mill caught fire again on 31st January 1934. This time there was a breeze which fanned the fire quickly through the main building. The boiler, main steam engine, and planing machine were gutted. Closer inspection showed the boiler and steam engine to only have superficial damage. All of the sawbenches were destroyed. Fortunately the drying and stock sheds were not damaged.[19]. W. J. Santowski was the mill manager at the time, and he had worked for Johnston since the mill opened in 1914. Johnston had formed the Molloy Sawmill Pty. Ltd. with the objective of giving leading employees a share in the business. As Johnston did not live at Mount Molloy he considered that the leading employees would better look after the interests of the business if they had a share of it. Johnston owned the mill, and the shareholders assets consisted of stock in trade, book debts, and general goodwill of the business. The Coroners inquiry provided a good description of the extent of the machinery. The sawmill was considered to be a modern, well maintained, and profitable mill. At the time of the fire, one planing machine in the main building was destroyed, and two others in a separate building were saved. The boiler was recorded as being destroyed (superficially damaged and able to be repaired), along with a Sandycroft steam engine, one twin circular log breaking down plant, four saw benches, one planing machine, sawdust carriers, belting, shafting and pulleys and

[18] *Cairns Post*, 23 September 1932, p.8
[19] *Cairns Post*, 1 February 1934, p.6

other tools, 29 circular saws, one log rolling winch, two saw sharpening machines, and three cross cut sawing machines. The Mount Molloy mill was important to Johnston's company as most of the hardwood timber came from this mill. Johnston had purchased machinery he intended to take to Cooktown with plans to build a sawmill at Shipton's Flat. After the fire he redirected some of this machinery to Mount Molloy so he could get the mill running again as soon as possible. The fire caused losses around £5,000.[20]

A third fire occurred at the sawmill on the night of 12 September 1938. This time it was confined to the planing building. Johnston used the planing facilities at his Stratford sawmill to keep up with ordered while the Mount Molloy sawmill was repaired.[21] The sawing section of the mill was unaffected, and the planing section was working again by mid October.[22]

The Mount Molloy township was saddened by the new of J. M. Johnston's death in May 1943, and many employees made the trip to Cairns to attend his funeral.[23]

Figure 7 Aerial view of the Mount Molloy sawmill, c.1954, the chimney of the boiler had been moved and extended by this time (Cairns Historical Society, P18380)

Bunning Bros. purchased Johnson's mills at Stratford and Mount Molloy in the late 1940s or early 1950s. In 1953 the RSL hall was built in Mount Molloy dedicated to the memory of soldiers killed in the war. Darby Edwards donated the timber from his land, and Jack Crothers carted it to town. Bunning Bros. allowed the mill to be used on Saturdays with the workers donating their time to cut the timber for the hall. Bunnings Bros. sold the mills to Rankine Bros. who were sawmillers from

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[20] *Cairns Post*, 21 April 1934, p.12
[21] *Cairns Post*, 13 September 1938, p.5
[22] *Cairns Post*, 14 October 1938, p.6
[23] *Cairns Post*, 8 May 1943, p.6

Peeramon on the Atherton Tablelands in the early 1960s. Electricity from the grid came to Mount Molloy in 1956. The sawmill was destroyed by fire in 1963, and only the planing shed was saved.[24]

The old steam powered sawmill was not rebuilt. The railway was closed on 30 April 1964.[25] By around 1968 Rankine Bros. transferred to Mount Molloy the Cooktown sawmill which they had purchased. This was an all electric mill which operated until 1986.[26]

Figure 8 Mount Molloy sawmill in 1973, Marshall engine in the foreground, Walkers winch to the left in the background, and the boiler which was still protected by a building (Geoff Green, 1973)

Figure 9 Mount Molloy sawmill in 1973, boiler buildings, and water tanks present (Geoff Green, 1973)

[24] Crothers, pers. comm.
[25] Little, p.47
[26] Justice, p.3

Description

The Mount Molloy sawmill site is located at the corner of Santowski Crescent, and the Peninsular Developmental Road, Mount Molloy. The site comprises a Stirling water tube boiler, Marshall steam engine, Walkers steam winch, boiler blowdown tank, chimney base & flue, and miscellaneous steam piping. The sawmill buildings, saws and planing machines have all been removed.

Further up the hill along Santowski Crescent is one of the oldest houses in the area. Nearby there is also a large and now empty open sided building which housed the later Rankine Bros. electric sawmill. The house, and later electric sawmill are not considered part of the extent of designation.

No physical inspection of the site was undertaken by the author, there may be other smaller items of significance in the vicinity.

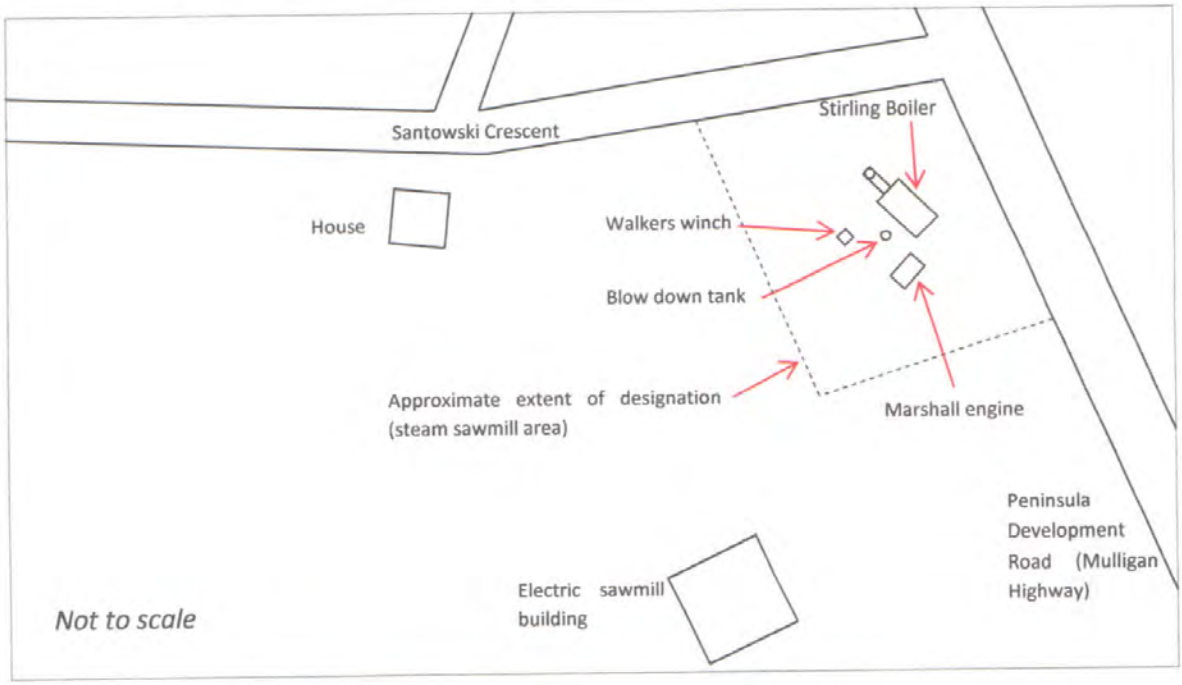

Figure 10 Map of Mount Molloy sawmill site (Google Earth)

The following description relates to the major elements left on the site of the boiler, steam engine and steam winch. The site also has miscellaneous steam pipework and other fittings spread around near the boiler.

Dates of Manufacture & Installation

It is not entirely clear when the boiler and Marshall steam engine were installed at the Mount Molloy sawmill site. It is uncertain the extent of the sawmilling operation on the site in 1914 when Polenz & Johnston took over the site. If it is assumed it was relatively small, and that the new owners developed the mill, then the boiler and engine were installed around 1914. The Marshall engine may have been secondhand to the site, and may have come from a mine site. In both cases the engine and boiler were made in the period 1900 to 1914. Queensland Inspector of Machinery records, if they survive, may provide further details.

Steam Engines No Longer On Site

Two other steam engines were recorded at the Mount Molloy sawmill site in 1973. They were a Tangye, Birmingham single cylinder vertical engine, and a Thompson & Co., Castlemaine, Victoria, single cylinder horizontal engine, no.242. This engine was secondhand to the area, having originally been ordered in September 1897 by the Mount Lyell Mining & Railway Company, Tasmania as one of a pair of pumping engines.[27]

Figure 11 Tangye vertical steam engine, no longer present on site (Geoff Green, 1973)

[27] Thompson & Co., order book.

Marshall Steam Engine

The large steam engine located near the boiler was used to drive the saws by a flat belt from the flywheel. It was originally inside an open sided shed which has since been removed, and was the main driving engine. Several other stationary steam engines were also in the shed. The name of the manufacturer was not found on the engine. It has been referred to as a Marshall steam engine in several published sources.[28] The engine has the characteristics of an engine built by Marshall, Sons & Co., Gainsborough, England (refer to Figure 12 for comparison), and it is therefore accepted as being built by Marshall.

The engine is a horizontal cross-compound stationary steam engine. Marshalls used letters to refer to their different steam engine designs, and this engine has the characteristics of their class C model. It was fitted with a Hartnell's Patent automatic expansion gear governor (refer Figure 16). This governor is still present, and it is this feature which confirms the engine was built by Marshalls. The engine was fitted with a second governor which was recorded on the engine in 1973 (refer Figure 14). This Pickering type governor has since been removed.

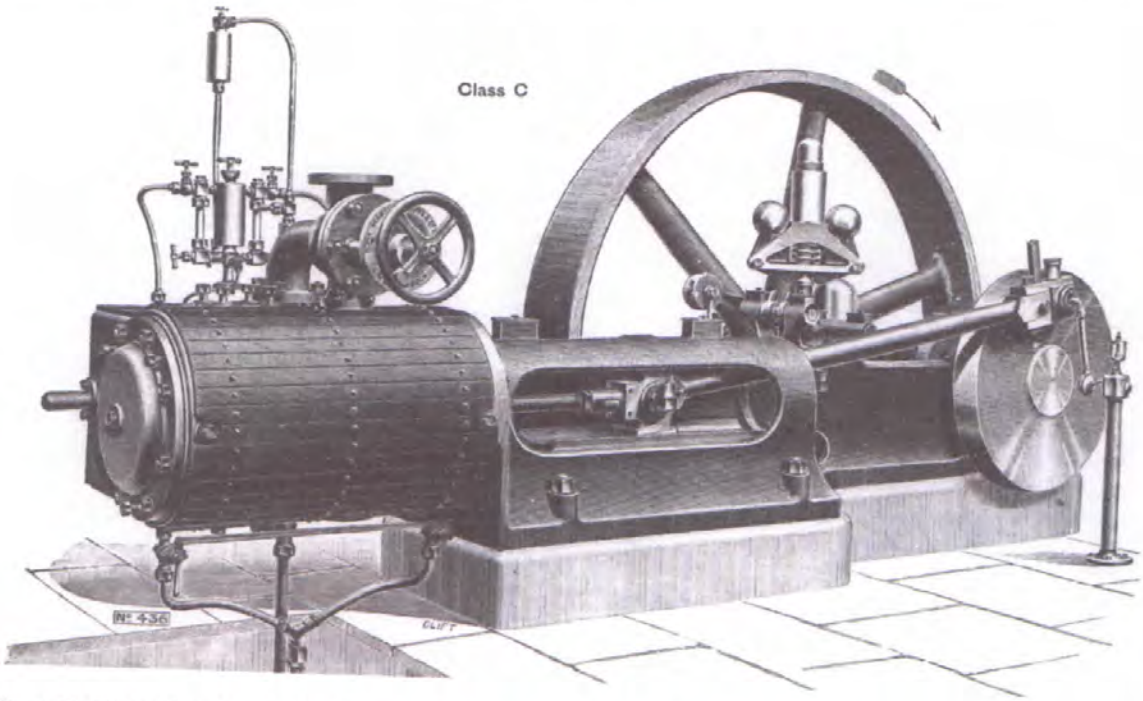

Figure 12 Illustration of a single-cylinder Marshall, Sons & Co., Gainsborough, England, class C type stationary steam engine. This shows the flat base to the engine frame, and the Hartnell type governor (Lane, p.43)

The engine was fitted with a tailrod extension on the low pressure cylinder. This was often done on larger engines to support the weight of the piston, and could also be used to drive a condenser. It is not known if the engine was purchased new for the sawmill, or was secondhand. Many sawmills were able to purchase steam engines secondhand from closed mines in the region. It is possible this engine was originally fitted with a condenser, and this feature was not installed at the sawmill.

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[28] Lennon, Jane & Associates, p.417 & EPA, p.43

Figure 13 Marshall steam engine low pressure cylinder side. Note the tailrod crosshead guide at the left, and the bands on the cylinder body for retaining the wooden lagging (September 2010)

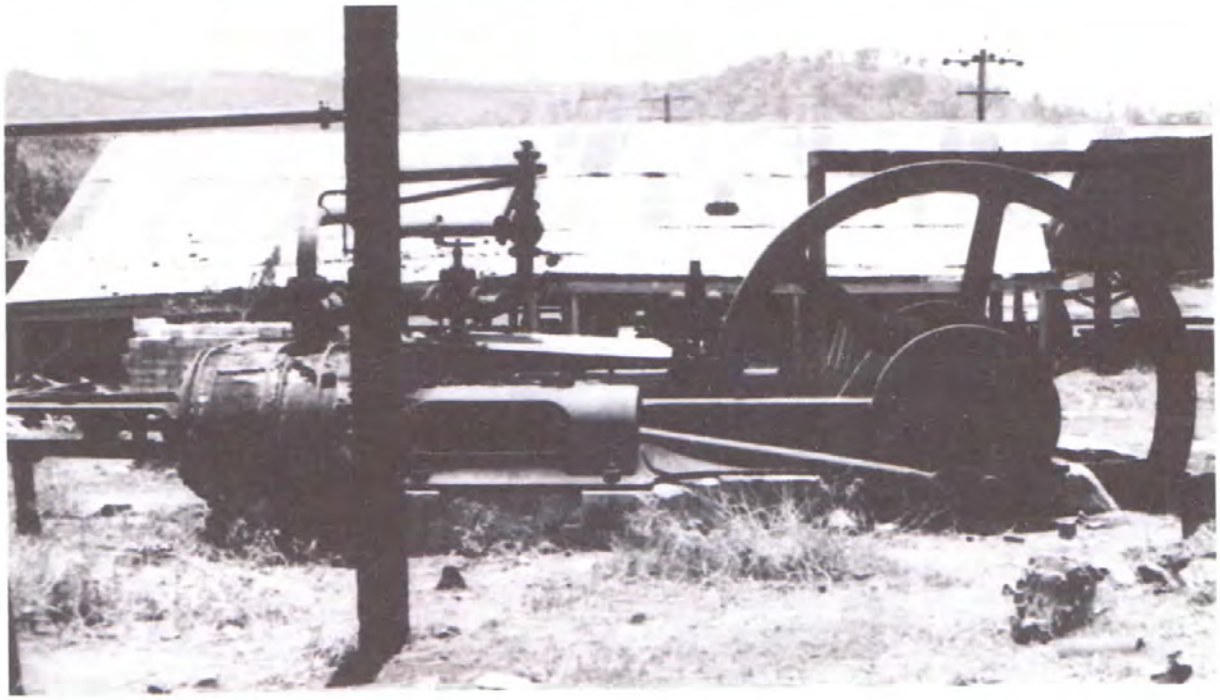


Figure 14 Marshall steam engine photographed in 1973. Note the presence of the tailrod crosshead casting which has since been broken off. The Pickering governor is also visible to the right of the pole, which has since been removed. (Geoff Green, 1973)

The cylinders were originally lagged with timber strips held onto the cylinders by brass bands. The timber has rotted away and only the brass bands remain.

Marshall's generally fitted a nameplate with the name and the serial number of the engine. This is missing and Marshall's were not known for stamping the serial number on any other parts of the engine, so the opportunity to identify the date of manufacture, and possibly the first owner is lost.

Figure 15 Marshall steam engine viewed from cylinder end, high pressure cylinder on the left, and low pressure cylinder on the right (September 2010)

The size of the engine can only be estimated. The high pressure cylinder bore is approximately 15 inches (381mm) in diameter, and the low pressure cylinder bore is approximately 24 inches (610mm) in diameter. The stroke of both cylinders was 36 inches (914mm). The flywheel is 10 feet (3048mm) in diameter, and 21 inches (533mm) wide.

Figure 16 Hartnell's Patent governor (September 2010)

Figure 17 Marshall engine high pressure cylinder side, note the brass bands on the cylinder to retain wooden cylinder lagging (September 2010)

This engine is a rare surviving example of a steam engine used at a sawmill still in situ. It is also a rare example of compound engine being used at a sawmill, when single-cylinder engines were more often used. There is a Marshall single cylinder steam engine in use at the Grandchester sawmill.

Figure 18 Marshall engine low pressure cylinder side, overhung disc crank design and flat rimmed flywheel (September 2010)

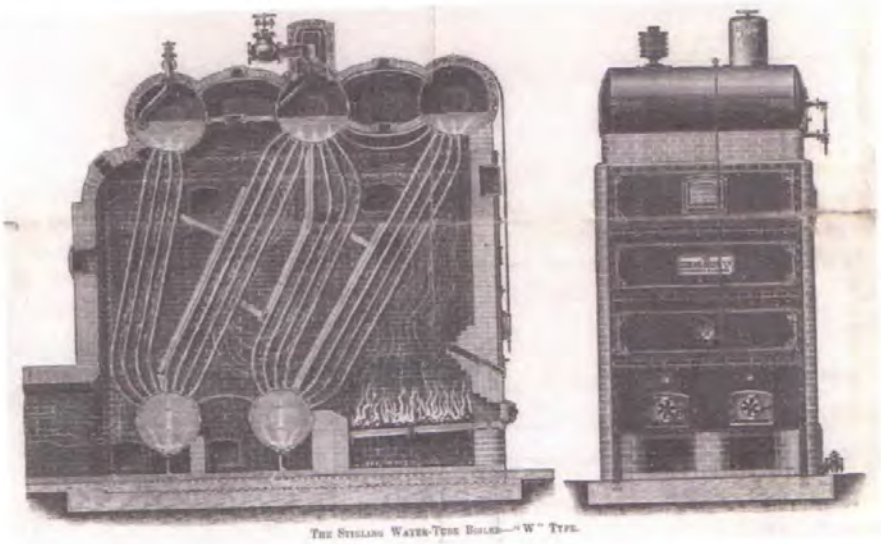
Stirling Water Tube Boiler

The engines at the sawmill were supplied steam from one large central boiler. This boiler was made by The Stirling Boiler Co., Ltd., at their works at Motherwell, Scotland, and the company had offices in London and Edinburgh. The boiler is referred to as a Stirling water tube boiler. It has five drums, comprising three steam drums at the top, and two water drums at the bottom which are joined by tubes between them. The makers name is cast into the various access doors. It would also have been on a plate on the front of the boiler which has been removed. The boiler was fired on wood off cuts from the sawmilling operation.

Figure 19 Left side of the Stirling boiler. Visible are the access doors to allow the tubes to be cleaned of soot, and to allow inspection of the boiler. Obscured by the tree growing at the back of the boiler is the additional steam drum, and the main steam pipe is also visible to the left. In the foreground is the access ladder which original stood by the boiler allowing access to a platform (no longer present) (September 2010)

Figure 20 Left: Makers name cast into one of the access doors. Right: The original location of the centrally located oval nameplate above the furnace doors is visible (September 2010)

The maker referred to this design as a W type boiler, and they were built in various sizes. At the inquest to the 1934 sawmill fire, the boiler was identified as 350 horsepower.[29] This was found to be consistent with the maker's catalogue when compared with the overall dimensions of the boiler. There were three grouping of boiler sizes based on their height and length, and within each group the size can be identified because the width of the boiler was unique to each size. The boiler was measured and found to be approximately 8'10" wide (2700mm), and 20'11" long (6300mm). The height was estimated by counting the number of courses of bricks and calculating a height which was approximately 19'0" tall (5790mm). This corresponded with the Stirling boiler size no.1W which had dimensions of 20'6" long (6248mm), 19'8" height (5994mm), and 8'9" width (2667mm).[30]



THE STIRLING WATER-TUBE BOILER—"W" TYPE.

Figure 21 Stirling W type five drum water tube boiler. The steam take off valve is fitted to the middle steam drum at the top in this example. The flow of gases past each bank of tubes is illustrated (Machinery Market, 7 November 1901).

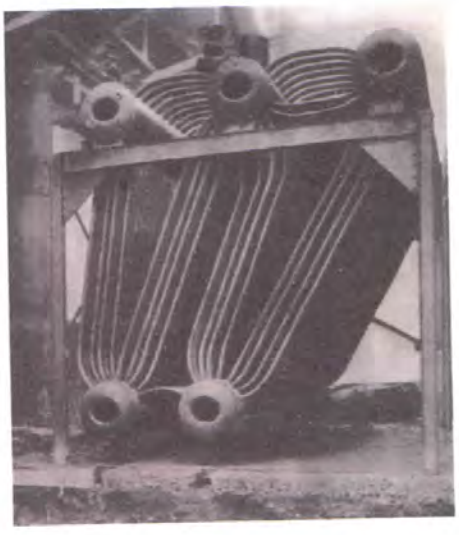


Figure 22 View of the water tubes and drums before the brickwork setting is commenced. This example was at the Glasgow Exhibition, 1901. The drums are support on the iron frame and connected at the top. The bottom two water drums are free to move with the expansion of the tubes. (The Stirling Boiler as used on Sugar Estates, p.6)

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[29] *Cairns Post*, 21 April 1934, p.12
[30] The Stirling Boiler Co., undated, *The Stirling Boiler as Used on Sugar Estates*, p.13

was a contemporary description for this boiler configuration. This additional drum may have been specified due to the nature of working a sawmill where the engine requires the maximum amount of steam while a cut is being made along the log, and the steam pressure can recover while the log is returned for the next cut. The drum allowed for a greater reservoir of steam to be available when the engine needed it the most.

Figure 25 Right hand side of Stirling water tube boiler. The boiler furnace doors are to the left. To the right the flue exits the base of the boiler and passes to the base of the chimney. Two of the steam drums are visible at the top of the boiler. (September 2010)

Figure 26 The blowdown tank for the boiler. The blowing down of the boiler involved opening a valve at the bottom of the boiler while under pressure allowing any mud or sediment to be discharged before it could form scale inside the boiler. The tank diffused the energy in the water by allowing steam to flash off up the vent pipe and for the remaining hot water to drain away safely. (September 2010)

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Figure 25 Right hand side of Stirling water tube boiler. The boiler furnace doors are to the left. To the right the flue exits the base of the boiler and passes to the base of the chimney. Two of the steam drums are visible at the top of the boiler. (September 2010)

Figure 26 The blowdown tank for the boiler. The blowing down of the boiler involved opening a valve at the bottom of the boiler while under pressure allowing any mud or sediment to be discharged before it could form scale inside the boiler. The tank diffused the energy in the water by allowing steam to flash off up the vent pipe and for the remaining hot water to drain away safely. (September 2010)

Figure 27 The steel stack from the Stirling boiler laying in the nearby scrap pile (September 2010)

A comparison of the existing chimney structure with the earlier 1938 photograph (see Figure 6) shows the chimney was moved away from the boiler, and the brick base increased in height. This was possibly built while the existing base was still in use, hence why it is further away from the boiler, and then when it was ready, the steel stack was moved across, and the flue built. This may have been done to increase the height of the chimney to improve the natural draft and hence efficiency of the boiler. Alternatively the existing stack may have been damaged and it was rebuilt differently than the original. The steel chimney is thought to be in the scrap pile near the electric mill building.

The brickwork was originally painted white (see Figure 6) and remnants of this are still visible on the brickwork.

Figure 28 The water drums were suspended from above to allow for expansion, and therefore could not touch the brickwork. They were originally covered with air sealing doors (left) which are no longer present (right). These doors are visible in Figure 6. (The Stirling Boiler as used on Sugar Estates, p.12)

There were two companies building Stirling boilers, one in America called The Stirling Co., and the other in Scotland, called The Stirling Boiler Co., Ltd. The design first appeared in America, It was invented and patented by Allan Stirling in 1892. It utilised four drums connected by tubes, with three at the top referred to as steam drums, and one at the bottom referred to as the water drum. These were connected by tubes which had a bend in them which allowed for expansion. The Scottish company built different designs of the boiler comprising either five or seven drums. In 1906, another water tube boiler manufacturer, Babcock & Wilcox purchased The Stirling Co., USA.

There did not appear to be a commercial relationship between the Scottish firm, and the American firm, and they were in direct competition. When one of the American boilers exploded in America, the local Australian agent for the Scottish made boilers was forced to place advertisements in newspapers distancing the Scottish design from the American one.[31]

Most boilers can described as either water tube or fire tube boilers. In water tube boilers, the water to be heated in contained in the tube, and the fire passes around the outside. Fire tube boilers have the fire passing through the tube which is surrounded by water. For larger sizes of boilers the water tube became favoured as the amount of water to be heated was less, and the design was generally safer. Stirling water tube boilers were most popular during the early 1900s. A review of the Victorian Government boiler inspection records shows approximately 30 new Stirling boilers installed between 1904 and 1912. Many of these were large boilers installed for electricity power generation, along with boilers for larger manufacturers. A review of newspapers also shows the most activity relating to new installations of Stirling boilers in Queensland occurred between 1900 and 1914.[32] John Toder was the chief agent for The Stirling Boiler Co., Ltd. in Australia, and was based in Sydney. Norman M. Bell was the sole agent for Queensland, who advertised in *The Queenslander* (see Figure 29).

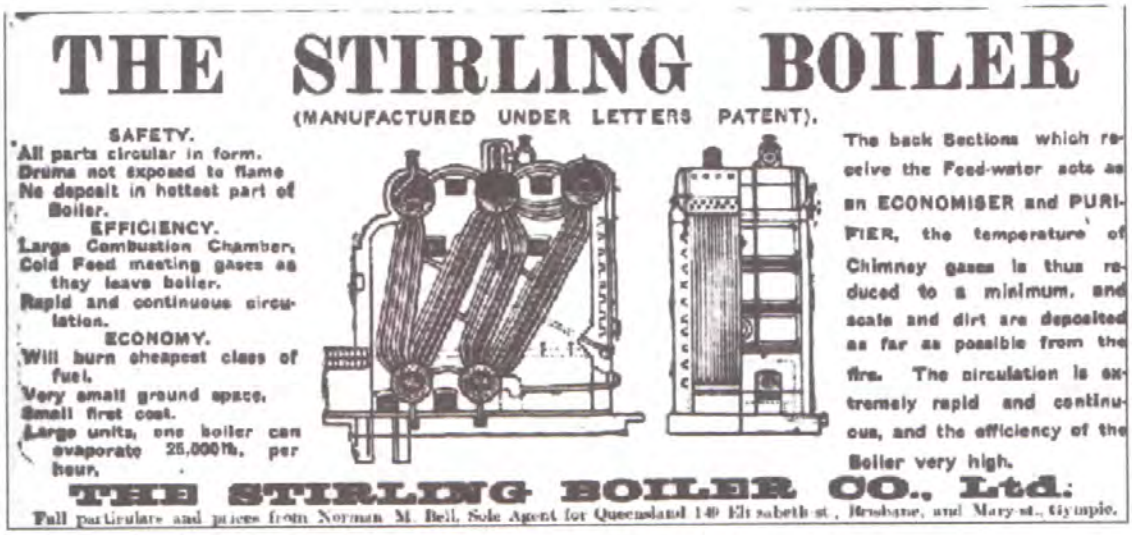

Figure 29 Advertisement for the Stirling water tube boiler (The Queenslander, 21 November 1903, p.32)

[31] *Sydney Morning Herald*, 14 July 1903, p.4
[32] Search of National Library of Australia's newspaper digital collection

Walkers Ltd., Steam Winch

Near the boiler is a steam winch which was used in conjunction with a stiff leg derrick crane to move logs about the yard. The winch was locally made by Walkers Ltd., Maryborough, Queensland. It is a twin-cylinder horizontal reversing single-drum second-motion steam winch. The steam cylinders are approximately 8 inches (203mm) in diameter, and the stroke is 14 inches (356mm). The makers name is cast into the winch frame, as well as the steam chest covers. The associated crane is no long present.

Figure 30 Walkers Ltd., Maryborough, Queensland, twin-cylinder steam winch (September 2010)

Figure 31 View of the sawmill site in 1973. The Walkers winch is visible in the centre of the photo, and the crane is still present. In the background are the boiler and Marshall steam engine (Geoff Green, 1973)

House

The house on the hill was originally built for the Mount Molloy smelter manager, Rolley Polenz. It was later occupied by the sawmill manager of the Mount Molloy sawmill.

Figure 32 Mill managers house (September 2010)

Electric Sawmill Building

The electric sawmill building was built in the late 1960s by Rankine Bros. to house a more modern electric sawmill. The building still stands, most of the machinery has been removed.

Figure 33 Electric sawmill building (September 2010)

Further Research

Opportunities exist for further research with a site inspection, and gathering oral history from former employees of the mill.

Forestry records and title records may also provide further details of development of the site and ownership dates.

The Queensland Inspector of Machinery Department may still hold records relating to the inspection of the boiler.

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Geoff Green, for assistance with research and providing photographs of the mill taken in 1973.

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Cairns Historical Society for providing photos of the sawmill and Mount Molloy

Report written by Rohan Lamb, Melbourne, 13 December 2010

Mrs Crothers

Sawmill at Mount Molloy

John Michael Johnston was known to John Moffat, an investor in mines in the region, and he came to Mount Molloy around 1913 to set up a sawmill. Rolley Polenz who was the manager of the Mount Molloy smelter helped J. M. Johnston to start a sawmill in town. Prior to this the only timber available was pit-sawn timber from Santowski's property at Rifle Creek.

The sawmill was purchased by Johnston & Polenz in January 1914. The previous owner is not mentioned and it's not clear if the boiler and engine were already there. Later references suggest Johnston built up the mill suggesting the boiler could have been installed at this time. It's also not clear how long the mill had been in business prior to its purchase. The *Cairns Post* commented that at the time of the purchase the mill was only a small concern, and Johnston was to build it up into one of the most important sawmills in the north. J.M. Johnston was the owner of a number of sawmills including one at Stratford and was a significant influence in the timber industry in the region.

The sawmill was a regular advertiser in the Cairns Post during between 1914 and 1916, advertising as sawmillers and timber exporters. The sawmill processed many of the local timbers including hickory, and kauri pine trees. Johnston had improved and added to the mill up until 1926.

Logs were originally hauled to the sawmill by bullock or horse teams, and these teams were still being used in the 1930s along with more modern practices. The sawmill was using three motorized lorries as well as Caterpillar crawler tractors in the bush by 1930. Animal teams could often get back into the forest earlier than motor vehicles after the wet season. Timber was dispatched to customers via rail. Often after rain it was difficult to cart logs to the mill, and the mill then relied on logs stockpiled at the mill. Once these ran out the mill would close until local roads became passable again.

Up until around 1927 the mill employed more than one hundred workers, with an average output of four or five train loads per week. After this, output of the mill declined to only two to three train loads per week being sent, and only 60 workers.

When Johnston went to manage his mill at Stratford near Cairns in 1929, he appointed Walter Colley to manage the Mount Molloy mill. Colley managed the mill for many

years, and was followed by Jack Hunter. Jack hunter was killed when crushed between two railway trucks while the train was shunting. By 1934, William John (Bill) Santowski was the manager.

The sawmill was vulnerable to fire, and parts of the mill were burnt on several occasions. The first recorded time was on the 14 June 1932. Fortunately, it was a still night, and when the fire started at midnight near the boiler, the mill workers were soon able to contain the fire. The fire was largely confined to the repair workshop and the boiler and engine were saved along with the stock of timber.

In August 1932 it was reported by the *Cairns Post* that the Mount Molloy sawmill had been sold by J.M. Johnston to Mr. Colley and all employees were notified of their termination, and to reapply to Mr. Colley for their re-employment. J.M. Johnston had also provided housing in the town for mill employees and concurrent with the sale of the mill, he sold the properties to the employees. The report of J.M. Johnston completely selling out his interest in the mill was contradicted in the *Cairns Post* several weeks later. The paper reported that the sawmill had been registered as the Molloy Sawmills Pty. Ltd., a private company under the directorship of Messrs. J. M. Johnston, W. Marlay, and W. J. Colley. The paper also reported that the mill was working again after the fire, and the engineer's workshop had been rebuilt, and a good stock of logs were on hand to carry the mill through the wet season.

The mill caught fire again on 31st January 1934. This time there was a breeze which fanned the fire quickly through the main building. The boiler, main steam engine, and planning machine were gutted. Closer inspection showed the boiler and steam engine to only have superficial damage. All of the saw benches were destroyed. Fortunately, the drying and stock sheds were not damaged. W. J. Santowski was the mill manager at the time, and he had worked for Johnston since the mill opened in 1914. Johnston had formed the Molloy Sawmill Pty. Ltd. with the objective of giving leading employees a share in the business. As Johnston did not live at Mount Molloy, he considered that the leading employees would look after the interests of the business if they had a share in it. Johnston owned the mill, and the shareholders assets consisted of stock in trade, book debts, and general goodwill of the business. The Coroners inquiry provided a good description of the extent of the machinery. The sawmill was considered to be a modern, well maintained, and profitable mill. At the time of the fire, one planning machine in the main building was destroyed, and two others in a separate building were saved. The boiler was recorded as being destroyed (superficially damaged and able to be repaired), along with a Sandycroft steam engine, one twin circular log breaking down plant, four saw benches, one planning machine, sawdust carriers, belting, shafting and pulleys and other tools, 29 circular saws, one log rolling winch, two saw sharpening machines, and

three cross cut sawing machines. The Mount Molloy mill was important to Johnston's company as most of the hardwood timber came from this mill. Johnston had purchased machinery he intended to take to Cooktown with plans to build a sawmill at Shipton's Flat. After the fire he redirected some of this machinery to Mount Molloy so he could get the mill running again as soon as possible. The fire caused losses around 5,000 pounds.

A third fire occurred at the sawmill on the night of 12 September 1938. This time it was confined to the planning building. Johnston used the planning facilities at his Stratford sawmill to keep up with orders while the Mount Molloy sawmill was repaired. The sawing section of the mill was unaffected, and the planning section was working again by mid-October.

The Mount Molloy township was saddened by the news of J. M. Johnston's death in May 1943, and many employees made the trip to Cairns to attend his funeral.

Bunning Bros. purchased Johnston's mills at Stratford and Mount Molloy in the late 1940s or early 1950s. In 1953 the RSL hall was built in Mount Molloy dedicated to the memory of soldiers killed in the war. Darby Edwards donated the timber from his land, and Jack Crothers carted it to town. Bunning Bros. allowed the mill to be used on Saturdays with the workers donating their time to cut the timber for the hall. Bunning Bros. sold the mill to Rankine Bros. who were sawmillers from Peeramon on the Atherton Tablelands in the early 1960s. Electricity from the grid came to Mount Molloy in 1956. The sawmill was destroyed by fire in late 1963, and only the planning shed was saved.

The old steam powered sawmill was not rebuilt. The railway was closed on 30 April 1964. By around 1968 Rankine Bros. transferred to Mount Molloy the Cooktown sawmill which they had purchased. This was an all-electric mill which operated until 1986.