NOTES ON EARLY C.P.R. ENGINES

Andrew Merrilees

As the C.P.R., as originally projected, was a Dominion Government enterprise, having been partially built by the government under Sandford Fleming, C.E., the earliest locomotives of the railway were those employed on government construction.

Many of these were new, others second-hand. Most of the new engines were Baldwins built for Joseph Whitehead, contractor for the Pembina branch, from Emerson(on the U.S. border) to Winnipeg. Among these was the Countess of Dufferin, which was Whitehead's No. 1. Other contractors bought second-hand 4-4-0's from the Grand Trunk and Intercolonial, among those from the latter railway being the famous four Hiawatha, Blomidon, Gabriel and Basil which mere converted broad-gauge engines from the Windsor and Annapolis Railway of Nova Scotia. These were rebuilt from 4-4-0 to 0-6-0 types and were in service in Vancouver, Winnipeg and Brandon yards until 1907.

An interesting group of other construction locomotives, those used by D.O. Mills Construction Co. to build from Port Moody (near Vancouver) eastward to a point in the Rocky Mountains, were bought from the Virginia and Truckee Railroad of California, with the exception of one, popularly known as the Curly, which is now on exhibition in Hastings Park, Vancouver. This locomotive was first used by Mills to build the San Francisco breakwater, and then was sent to Callao, Peru, for harbour construction. On the completion of this job, Mills landed it at Port Moody, for use on C .P.R. construction. None of the Mills engines were taken over by the C.P.R. on the completion of the work, as were those of other contractors. They were, with the exception of the Curly, bought by the Intercolonial Railway, and were all running on that road until the end of the first Great War. The last one, which became C.N.R. 7083, mas scrapped at Moncton in 1924.

So much has been written about the Countess of Dufferin that is incorrect that a true statement of her history in indicated. While this engine was painted Canadian Pacific Railway No. 1, there were actually at that time several C.P.R. No. 1's on the several disjointed sections of the line which were in the hands of the contractors and not yet completed. When the Canadian Pacific Railway Company mas formed in Montréal in 1882 and the undertaking turned over to private interests, the Countess of Dufferin mas bought by the C.P.R. Company, and thereafter became C.P.R. No. 151. She was used in passenger, freight and switching work in the west and in April, 1897, was sold to the Golden Lumber Co. of Golden, B.C., with a sloped tender and footboards, and diamond stack. This firm later became the Columbia River Lumber Co., and one day in 1909 a mayor of Winnipeg on a visit to Golden saw the old engine on the company's scrap heap, made inquiries, and learned that it was the Countess of Dufferin. As a result of his interest, the engine was formally presented to the City of Winnipeg by the lumber company, and was repaired gratis in the C.P.R. Winnipeg shops with a regulation tender and sunflower stack, which it actually never had had before. In 1910 it was placed in Whyte Park, Winnipeg, and is the property of the city.

Sandford Fleming, engineer-in-chief of the C.P.R. during government construction, commissioned the then superintendent of motive power of the other government line, the Intercolonial, to make a survey of the railways of Canada and the United States to ascertain the best dimensions and data for a group of standard locomotives for the C.P.R. His

recommendations to Fleming (vide p. 310, C.P.R. Report , 1880) were that the road adopt one standard type of engine to simplify operations and repairs, and that in his opinion this type should be that of Class C of the Pennsylvania Railroad, i.e., an engine with 17x24 cylinders and 62" drivers of the 4-4-0 wheel arrangement. This, it vas contended, would make an ideal locomotive for both freight and passenger service. Plans for this engine were drawn up and sent to the various locomotive builders who turned them out. Among these were Dubs & Co., of Glasgow, Scotland (now North British Locomotive Co.), Baldwin, Danforth, Pittsburgh, Rogers and others. The first locomotive built by the C.P.R. was one of this class, known as SA (Standard 'A') number 285, built in 1883 at the old Delorimier Avenue Shops, Montréal, which produced 383 locomotives up until the removal to Angus Shops in January, 1905.

In ensuing years the C.P.R. built a goodly percentage of its own motive power. As time went on, a series of Baldwin Consolidations for freight were added to the equipment list, and these were first employed as pusher engines in the Rockies. These engines had sloped back tenders originally. The first yard engines mere built by Rhode Island Locomotive Works and were of the 0-6-0 type.

The few large railroads which the C.P.R. absorbed in the years that followed supplied the parent system with considerable unstandardized motive power. A story in itself could be told about the various unusual units acquired from such roads as the Toronto, Grey and Bruce; Credit Valley; Québec, Montréal, Ottawa and Occidental; New Brunswick Railway System; and the North Shore Railway. The original numbering series was adhered to until 1905, when a general renumbering took place. Again in 1913 another general renumbering brought the motive power to its present series. The oldest unit on the system today is one of the original Dubs SA type, No. 105, in service between Norton and Chipman, N.B. Other 4-4-0's still in service are Nos. 29, 30, and 144 built at Delorimier Shops in the late eighties, and No. 136, built by Rogers at the same time.

Throughout its history the C.P.R. has built in its own shops 1055 locomotives, the last of which was No. 8000, huge, multi-pressure engine recently scrapped. Several odd, experimental, short-lived types make interesting the otherwise extremely standardized motive power history of the company. There were, for instance, the five Mother Hubbard D-11 type 4-6-0's, equipped with Wootten fireboxes. These were removed in 1910 and the engines rebuilt and reboilered to the conventional type. There was also one Mother Hubbard Consolidation, No. 1026, which later became 3230, shortly afterwards being rebuilt. The 1950-55 series 0-6-6-0 Mallets are well-known. They were rebuilt in 1917-18 to Nos. 5750-55 Class R-2 Decapods. Some interesting, suburban, tank-type locomotives were built in Delorimier and Angus Shops, the first being No. 624 (later 5990) which was used in the Montréal-Point Fortune local service. No more of this class were built but later on three light suburban engines, Nos. 5991-93, and two tank switching (0-6-4T) locomotives were built. A11 of these are now scrapped except one of the latter, 5997, now in service at Ottawa. An experimental steam car, number 83, was built and placed in Montréal-Vaudreuil service early in the century, but mas rebuilt into a conventional combination car and is still in service as such today.

Compounding of locomotive cylinders by the Richmond, Vauclain and Balanced methods was popular on the C.P.R., as on all roads, after the turn of the century; but this practice gradually entered into disfavour and was replaced by superheating the locomotives by the Vaughan and Horsey method, devised by H.H. Vaughan and A.W. Horsey, two officials of the C.P.R. motive power department in 1912-13.

CANADIAN PACIFIC MOTIVE POWER TODAY

Frederick Harold Howard

(This paper has been inspected and approved by the Canadian Pacific Railway Company.)

Perhaps the clearest conception of the trend in locomotive design in this company may be drawn from a presentation of the existing classes in the order in which they have been built. A certain amount of standardization is to be detected after 1900 in the consistent application of new characteristics to several contemporary types. For instance, 58" and 63" drivers are used for freight and 70" and 75" drivers for passenger engines with few exceptions. Boiler pressures have increased regularly from 180 to 230, 250, 275 and 300 lbs. and many classes of engines have the same cylinder dimensions.

The oldest engine of the 1694 which were listed on January 1, 1941, is No. 105 a 4-4-0, the number, incidentally, being the fourth that it has borne. It 13 one of the remaining four of the A2 Class, built from 1882 to 1886, accompanied by Nos. 136, 144 and 158. With 63" drivers these engines run on the Eganville, Ont. and Chipman, N.B. subdivisions and are, apparently, the only power permitted on the light iron of these lines. The other two eight-wheelers left are of the A1 Class—strangely enough, as they were built in 1887, five years after the A2's. They are Nos. 29 and 30 and serve the Waltham run, out of Ottawa.

Two Moguls, 3011 and 3063, built in 1888, are listed; specially cut down for service through the Brockville Tunnel, they comprise the entire complement of this type, together with the 1912-built 3051, which was bought along with the rest of the Algoma Eastern, and running into Temiskaming.

356, a relic of the D3 ten-wheeler class was built in 1897 and was reported repaired at West Toronto a few months ago, but is now in the vicinity of Ottawa.

The oldest eight-coupled locomotives in existence are nine Ml's, the 3200 series Consolidations dated 1898 to 1900 and three Vl's, the 6800 series switchers rebuilt from them. The former c1ass are 'deckless' in that the engineer is unable to see the fireman; until last year they composed the freight power on the Esquimalt and Nanaimo. Tho M2's, of which eight remain, duplicated the Ml's the following year and were numbered directly after them.

The C.P.R. possesses almost one hundred small switchers, constructed since 1900; these are the 6100-6300 engines, U3, the last of only three classes. These were built until 1913; in 1912 a four wheel truck wass added and an 0-6-4 tank engine resulted. Two were made for special transfer service but only one remains, No. 5997, also running near Ottawa, which seems to have become the scene of the last miles of the oldest engines.

1901 saw the 2-8-0 enlarged into the 3300 series M3 type, but these too have largely disappeared, and are represented by ten machines, switching being the final disposition of some, a favourite practice on the C.P.R.

200 lb. boiler pressure was first used in 1902 on the D6's and E5's, freight and passenger 4-6-0's respectively. The D6's, with over 63" drivers, were turned out of shops in Germany, Scotland, and New York State, Numbered in the early 5001s, many of them serve the Dominion Atlantic, albeit minus their former red livery. The passenger engines, their high wheels giving them a comely line, bear numbers in the 2000's and 2100's and run out of Ottawa and Lindsay, some with inside steam chests and Stephenson valve gear.

1903 contributed many engines that are still useful, the only new class being the D9, numbered up to 597, which were the heaviest ten-wheelers ever used. Oil burning, 16 freight haulers remain from the original 39 built for the Rockies and later distributed over all western lines.

In 1904 the first of a great quantity of then heavy Consolidations were delivered from a variety of Canadian and American builders. These M4's are serialled 3400-3500, 124 of which roll their 58" drivers over all parts of Canada, and some have switching steps. Indeed, 20 of them dropped their engine trucks over Angus pits in 1929, took new drivers, and emerged as the V4 6920 switchers. One V2 0-8-0 also remains from that years production, and switches at 0ttawa.

The following year began the most spectacular orgy of locomotive building in the road's history. The first of the phenomenally successful D10's rolled out of Richmond shops; instantly popular, clean-limbed, big-boilered D1Ob's, c's and, by 1913 D10k's followed, and today, one of the almost 400 may be seen at practically any roundhouse on the road, numbered from 60O to 1100. Featured on the later models is a Walschaert gear hung inside the guide bars, they are favoured for their ease of handling and of repair.

(Due to limitations of space it is impossible to reproduce all of Mr. Howard's excellent paper in this issue. However, it will be completed in the December number, will be ready for distribution before Christmas.)