



QJ 2-10-2s Nos. 6988 & 7081 await dept Newton on July 19. PETER ODELL



View from the cab of No. 7081 between Newton and Iowa City on July 19. PETER ODELL

Chinese record breakers on the Rock Island line.

In the USA Great Northern N-2 simple 2-8-8-0 Mallets were rated at 10,189 tons with a 17,053 tons record being attained. Duluth, Missabe & Iron Range Yellowstone 2-8-8-4s were rated at 16,160 tons operating until the late 1950s, the last run of the class occurring on July 5, 1960. In China QJ 2-10-2s were normally loaded to 3500 tons and on some lines almost 4000 tons usually single headed on flatter sections.

In the UK preserved 9F 2-10-0 No. 92203 *Black Prince* started a demonstration load at Foster Yeoman quarry in September 1982 of 2178 tons claimed to be a British steam record.

Vacuum brakes limited the 3ft 6in gauge South African Railways steam loads to 40 vehicles. Coal loads usually peaked around 2500 tons,

On July 20, 2011, the Iowa Interstate Railroad moved what is believed to be the heaviest train anywhere in the world powered by steam for over 51 years. Peter J Odell, who rode in a passenger car 55 freightcars behind the locomotives, reports on the achievement.

manganese loads until the 1960s somewhat more. Reports in the UK railfan press at the time showing a robust, sweating fireman induced a wry smile. I was driving South African steam at De Aar at the time, when shunt locomotives would often pick up and remarshal 2500-ton

loads brought in by double-headed 4-8-4s, on one occasion I recall on night shift with my fireman fast asleep!

Turning to the American 'preservation era', on January 7, 1985, during the American Coal Enterprises test runs in West Virginia between Huntington and Hinton, the Chesapeake & Ohio J3, a 4-8-4 No. 614, hauled a 4893-ton coal train. Union Pacific's restored Challenger 4-6-6-4 Mallet No. 3985 has since the mid-1990s moved some giant freight trains, culminating it seems with a circus train from Speer, Wyoming, to Denver, Colorado, on September 28, 2010, of some 4152 tons. UP further claims 5446 tons but a diesel marshalled in the consist was heard to be assisting at some points.

On June 11, 2006, Chinese QJ 2-10-2s No. 6988 (Datong 1985) and No. 7081 (Datong 1986) were offloaded on to US soil at the port of Houston. These had been purchased from the Ji-Tong railway by the 'Railroad Development Corporation' of Pittsburg, Pennsylvania, for use on the Iowa Interstate Railroad. They arrived, loaded on flatcars, on IAIS metals at Rock Island on June 27 and initial steam trials took place around Iowa City in late August of that year. The Chinese QJs are two-cylinder, air-braked 2-10-2s weighing 252.3 tons with tender in working order, with 4ft 11in (1500mm) driving wheels and a standard HT mechanical stoker feeding a 73sq ft grate from a 21.5-ton capacity tender. To comply with FRA requirements, the boiler's operating pressure in America has been limited to 195lb sq in.



QJ 2-10-2s Nos. 6988 & 7081 on shed at Newton on July 18. PETER ODELL



The layout of the QJ backhead. PETER ODELL



View from the cab of No. 7081 at Iowa City terminal on July 19. PETER ODELL



The volunteer crew pose in front of locomotives at Newton at the end of the event on July 25. The author is on the extreme left. PETER ODELL

the cream of America's 21st century steam knowledge

From July 21-24, Nos. 6988 and 7081 were exhibited at and worked public excursions from "Trainfest 2011" at Rock Island some 137 miles east of their Newton, Iowa base. Preparation, maintenance and operation during this event was managed by Steam Services of America under Robert Franzen who had sourced a team of engineers and volunteers from all corners of the USA representing probably the cream of America's 21st century steam knowledge and experience. I was privileged to be part of this team.

The two locomotives were moved from Newton to Rock Island on scheduled freight trains over July 19-20. It transpired that at 9.25am on July 20, 56 vehicles totalling 6294 tons moved out of Iowa city behind steam the 56 miles to Rock Island yards! Designated to 'whistle off' this historic run was none other than Adrian Shooter of Chiltern Trains. ☺

TRAIN	20/7/2011 09.25 FREIGHT IOWA CITY-ROCK ISLAND
Locos	QJ 2-10-2 No 6988 (Datong 1985) & No 7081 (Datong 1986)
Drivers	Robert Franzen & Dennis Daugherty
Load	51 loaded freight cars, 4 support vehicles, 1 diesel = 56 vehicles/226 axles
Tonnage behind locos	6294 tons imperial/7049 tons US
Length of train	3376 feet/3186 feet excluding locos
Recorded	in rear vehicle
Speed Limit	30mph 'hot weather' limit in force

DIST. MILES	TIMING POINT (MILEPOSTS)	MINS,SECS	SPEED[M.P.H.]
0.0	235.89	0.0	[est. centre of train 235.5]
0.11	235	5.00	20/17.5
1.11	234	8.02	20
2.11	233	10.37	24
2.61	232.5	11.56	25.5
3.61	231.5	14.19	23
4.11	231	15.38	20/15
4.36	230.25	18.27	16
5.61	229.5	20.29	29/31.5/25/28
	Downey	26.39	24/26
9.36	225.25	30.05	22/29.5
12.11	223	35.14	21/26
	West Liberty	39.26	24/26/22
15.61	219.5	43.47	29.5/23.5
18.61	216.5	50.41	26/24
21.61	213.5	57.38	29/30
23.11	212	61.01	21 braking
25.36	210.53	66.50	(est center of train 210.1)

Depart 11.44

0.0	210.53	0.0	/20
1.13	North Star Jct. 209.4	5.00	17/16
	Wilton	10.24	23/30.5/23
6.53	204	18.46	27
8.03	202.5	22.47	17
9.03	201.5	25.32	30/30.5/18
11.03	199.5	30.25	19/30.5
13.53	197	36.17	29.5
14.03	196.5	37.20	27
15.03	195.5	39.33	26/27
16.03	194.5	41.48	25
17.03	193.5	44.02	26
18.03	192.5	46.28	23.5
20.53	190	52.01	28/brake
22.53	188	56.37	18/27/21
25.53	185	63.51	26/3
27.53	Davenport R I 183	74.35	8/11/3/9
29.43	Rock Island Yard 181.1	91.20	(est center of train 180.7)



Adrian Shooter with Robert Franzen at Iowa City on July 20 before coupling on to the load. HENRY POSNER III



QJ 2-10-2s Nos. 6988 & 7081 wait to lift 6294 tons out of Iowa City at 9.25am on July 20. HENRY POSNER III



The train on July 20 seen from vehicle 55 on arrival at Rock Island. Black smoke indicates the locomotives' position half a mile ahead! PETER ODELL



From the footplate on the Mississippi bridge. PETER ODELL

'hot weather 90-99 deg F'

Accompanied by RRDC president Henry Posner III, he then rode the footplate throughout. Far from the action, I was able to ride in the 56th vehicle, 3186 feet back, being the IAIS lounge car, and compile the attached historic log. Unable to see or hear the locomotives, I was at least next to the standby diesel marshalled as vehicle 54 and able to confirm that it was switched off and unmanned for the duration of the trip.

Ascertaining the precise tonnage is no easy task, the figures are as provided by IAIS on the train's manifest, with some adjustments where stencilled weights or other vehicle indications were known or observed. The number of trailing axles under the 56 vehicles was 226 estimating 6294 tons gross at Iowa City, falling to 6288 at Rock Island after water usage from the locomotives' auxiliary tank car. Total length of the train including locomotives is given as 3376 feet or 3475 'stretched'.

The route was originally Chicago, Rock Island & Pacific trackage and traverses generally undulating country. IAIS maximum route speed is 40mph but operations were hampered by a 30mph 'hot weather 90-99 deg F' restriction on the day. But judging by the comfort factor, it's a wonder the 25mph '100 deg or hotter' wasn't enforced.

To assess performance we have looked at the two sections with the longest sustained adverse gradients. From Milepost 234 to 230 a rise of 63 feet culminating in more than a mile at 1-in-163 and the gradual uphill from Milepost 196.5 to 191.25 entailing nothing more challenging than a few short stretches at 1-in-200 and 1-in-225 and nearly a mile of 1-in-333 The 25.32 miles from Iowa City to the service stop near Wilton was run in 66min 50sec, a start to stop average of 22.6mph, with speed generally in the upper 20s with a 31.5mph maximum. On the gentle grades from Milepost 234 to 231.5, speed was hovering around the 23mph mark, the final mile at 1-in-133 bringing speed down to a 15mph minimum. This meant an average edhp of

about 3400, from the two locomotives, sustained for 10 minutes at a 22mph average.

After the Wilton service stop a faster start to stop average looked possible. By Milepost 185, 25 miles from the restart, the start to pass average was 23.5mph but restricted speed street running through Davenport and then over the Mississippi swingbridge girders into Rock Island dashed those hopes resulting in a 19.1mph start to stop average over the 29.19 miles. Over this section the interest focuses on the 51-foot rise to Milepost 192. Speed was maintained in the mid 20s, the 1-in-333 reducing speed only briefly to 23.5mph minimum. This again represented about 3400edhp in this instance sustained for nine minutes at a 26mph average. In neither case however did the effort seem to be consistent, edhp fluctuating between 4000 and 2500.

For a 133-ton locomotive with a 73sq ft grate, 1700edhp does not at first look impressive, but on reflection it was a good workmanlike result. Another factor is that even for a locomotive with 4ft 11in driving wheels, speeds in the 20s are too low for optimum power, so should such an attempt be repeated, a raising of the limit to 40mph can be expected to show higher outputs.

A long sweeping unobstructed right curve approaching the Mississippi bridge gave those of us in the lounge car the first and only glimpse of the locomotives... already in Illinois over half a mile away!

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The locomotives on display at Railfest Rock Island the following day July 21. HENRY POSNER III