

SECTION A-A

△	10/16/06	ADDED CHARTS	ET
△	7/27/06	CORRECTION	ET
△	8/09/06	REMOVED EXTENSIONS	ET
△	7/27/06	GENERAL REDRAW	ET
REV.	DATE	DESCRIPTION	BY

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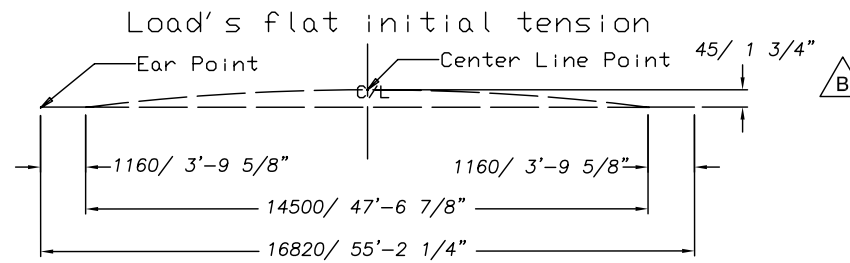
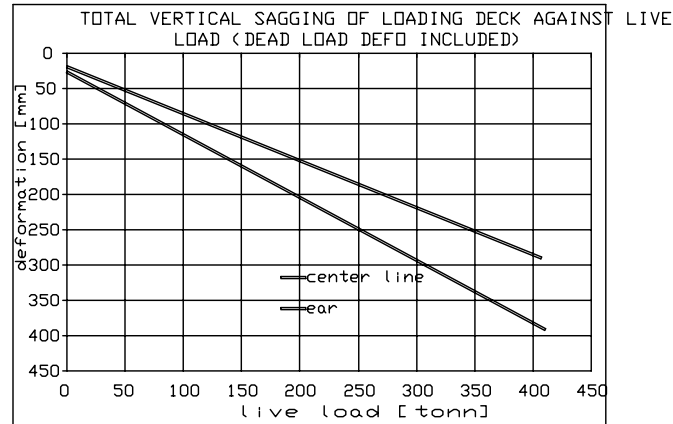
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BBC X-1000
SCHNABLE CAR
ELEVATION & CROSS SECTION

BY: Aaron Boyle	SITE:	EMMERT JOB #:
DATE: 7/14/2004	SCALE: 1:1	REVISION:
DRAWING NUMBER EI - 10774	SHEET: 1	REVISION: D

VERTICAL DEFORMATION OF LOADING DECK

LIVE LOAD [tonn]	Ear [mm]	Center line [mm]
0	19	27
50	52	72
100	84	116
150	116	160
200	148	205
250	181	249
300	213	294
350	245	338
400	277	383
410	284	391



SIDE SHIFTING CAPABILITIES OF THE CAR

20 axles wagon BBC-X1000
Reduced bogie wheel base = 27,186 mm

R (m)	f (mm)	D ₀ (mm)	D (mm)	D _s (mm)
150	662	262	338	221
175	567	225	290	269
200	496	197	253	305
225	441	175	225	334
250	397	157	203	356
275	361	143	184	374
300	330	131	169	390
325	305	121	156	403
350	283	112	145	414
400	248	98	127	432
450	220	87	113	446
500	198	79	101	457
550	180	72	92	467
600	165	66	85	474
700	142	56	72	486
800	124	49	63	495
900	110	44	56	502
1000	99	39	51	508
1500	66	26	34	525
2000	50	20	25	533
2500	40	16	20	539
3000	33	13	17	542

R = radius of curvature
f = sagitta with respect to bridge axis in center line

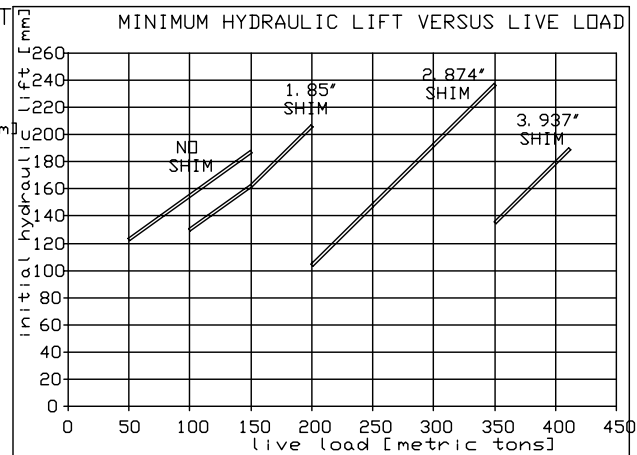
D = automatic movement of the head towards the outside of the curve with respect to the axis of the railway line. This movement interests in function of dimensions.

D = automatic movement of the head towards the outside of the curve with respect to the axis of main intermediate bridge. This movement interests in function of possible turnover.

D = max. hydraulic movement allowed towards the outside of the curve, to add to automatic movement till a total value of movement of 558.8 mm.

MINIMUM HYDRAULIC LIFT VERSUS LIVE LOAD AND SHIM THICKNESS

LIVE LOAD [tons]	MINIMUM HYDRAULIC LIFT [mm]			
	no shim	1.85'	2.874'	3.937'
0				
50	123			
100	155	130		
150	187	162		
200		206	104	
250			148	
300			193	
350			237	135
400				180
410				189



N. B. THE MINIMUM HYDRAULIC LIFT IS CALCULATED FOR 130 mm CLEARANCE RESPECT TO RA OVER FULL LENGTH OF LOADING DECK;

FEATURES CONCERNING THE EXCEPTIONAL TRANSPORT

Length over buffers	168' -8 1/4'	51414 mm
Number of axles	20	
Distance between axles of bogies	5' -0"	1524 mm
Wagon's weight	423,945 lbs	192.3 metric tons
Weight of loading flat & pins	164,000 lbs	74.4 metric tons
Weight of 4 brackets	3,086 lbs	1.4 metric tons
Load per axle	29,551 lbs	13.4 metric tons
Load per feet	3,504 lbs	1.6 metric tons
TRANSPORTATION CAPABILITIES MAX ALLOWABLE LIVE LOAD DISTANCE OF LOADING POINTS		
CONCENTRATED LOAD AT 9000 mm 903,886 lbs / 410.0 metric tons 29'-6 6/16" / 9000 mm		
CONCENTRATED LOAD AT 8000 mm 859,794 lbs / 390.0 metric tons 26'-2 3/64" / 8000 mm		
CONCENTRATED LOAD AT 5300 mm 771,610 lbs / 350.0 metric tons 17'-4 6/16" / 5300 mm		
SPANNED LOAD 903,886 lbs / 410.1 metric tons spanned over 29'-6" / 9000 mm		
SPANNED LOAD 409,000 lbs / 185.5 metric tons spanned over 29'-6" / 9000 mm		

CENTER OF GRAVITY

C. G. of Car =	57.9"	58.5"	59.4"	60.9"	62"
Shim (S) =	NO SHIM	1.875	2.875"	3.937"	4.921"
Hinge (h) =	47"	48"	52"	56"	60"

WIDTH ADJUSTMENT

W	94 7/8"	118 1/8"	138 9/16"	141 3/4"
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w/ SPECIAL APPROVAL
IN ACCORDANCE w/ AAR LIMITS OF 1,000,000 lbs COMBINED LOAD OF LOADING FLAT (PLATFORM CAR) & LOAD

D	10/16/06	ADDED CHARTS	ET
C	7/27/06	CORRECTION	ET
B	7/27/06	CORRECTION	ET
A	7/27/06	164,000 was 156,791	ET
REV.	DATE	DESCRIPTION	BY

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BBC X-1000 SCHNABLE CAR TECHNICAL INFORMATION

BY: Aaron Boyle	SITE:	
DATE: 7/14/2004	SCALE: 1:1	EMMERT JOB #:
DRAWING NUMBER: EI - 10774	SHEET: 2	REVISION: D