

It was recognized that whilst design codes had to have some degree of conservatism in order to cover the unknown situations in which they might be applied in the future, such a degree of conservatism was not required in the assessment of an existing structure in a known situation.

One of the areas identified for investigation was the need for bridge specified live-load requirements which could take account of the local traffic and the state of the road surface on the bridge in question.

Eurocodes

Load Model 1

The main traffic loading system and consists of concentrated and uniformly distributed loads and is intended to cover the global and local effects of normal traffic. It includes dynamic amplification.

Procedure for the development of the LM1

- i) Determination of target values of various actual traffic load effects which were to be reproduced by the design load models. These load effects were to be extrapolated to correspond to a probability of exceedence of 5 percent in 50 years or a return period of 1000 years.
- ii) An investigation to find and define the load model which was best able to reproduce the target values for loaded lengths from 5 to 200 m. The determination of the target values, largely based on the traffic data recorded at Auxerre, took into account different extrapolation methods, traffic composition, different influence lines for the various load effects and the dynamic effects from flowing traffic.

Load Model 2

The model consists of a single-axle load, including dynamic effects.

小塩達也、山田健太郎、貝沼重信、小幡敏幸、古市 亨、'鋼床版部材を用いた走行車両の輪重推定'、
構造工学論文集、Vol.44A、pp.1141-1151、1998年3月。

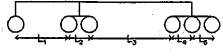
交通荷重実態調査

対象区間：一般国道23号線港新橋

計測：夏期（1996年7月29日）・秋期（1996年10月16日～17日）・冬期（1996年12月8日～10日）

一般車両集計結果：秋期12時間，冬期12時間，計24時間

車種分類 (軸数-分類)	第n軸距 Ln(m)					第n輪重 Wn (tonf)						総重量 tonf (標準 偏差)	台数 混入 率 %
	L1	L2	L3	L4	L5	W1	W2	W3	W4	W5	W6		
2-1	2.59					2.05	2.24					5.42 (3.26)	213 2.30
2-2	4.60					3.39	2.26					7.22 (3.42)	3028 32.69
3-1	3.28	1.28				2.39	3.30	2.98				17.11 (6.41)	550 5.94
3-2	5.49	1.25				2.27	3.56	2.48				16.58 (5.10)	1801 19.45
3-3	1.67	3.67				2.40	2.22	3.61				16.06 (5.59)	427 4.61
3-4	1.68	5.71				1.67	1.75	2.90				12.59 (3.08)	1075 11.61
3-5	3.70	8.52				2.28	3.44	3.32				18.02 (4.81)	556 6.00
4-1	3.28	6.66	1.31			2.71	3.33	3.25	2.85			24.22 (8.83)	783 8.45
4-2	判定されず												
4-3	1.40	4.51	1.18			1.75	1.38	2.45	2.51			16.07 (6.20)	351 3.79
5-1	3.07	1.32	6.75	1.25		2.40	3.11	3.15	4.12	4.05		33.40 (14.03)	180 1.94
5-2	2.95	5.45	1.25	1.23		2.39	2.94	2.39	2.44	1.73		23.78 (8.76)	10 0.11
5-3	4.70	1.28	5.71	2.41		2.10	3.52	3.28	3.23	3.18		30.61 (10.32)	37 0.40
5-4	1.69	5.19	4.11	4.19		1.78	1.79	3.06	2.24	2.16		22.09 (5.05)	27 0.29

6-1		3.20	1.31	5.55	1.25	1.23	2.65	3.66	3.62	4.05	4.14	3.39	43.02 (14.38)	224 2.42
合計 9262 台 / 24 時間														

輪重が 5tonf を超える車両の数

車種 (軸数-分類)	過積載(台)	総数(台)	過積載率 (%)
2-1	0	213	0.0
2-2	115	3028	3.8
3-1	77	550	14.0
3-2	263	1801	14.6
3-3	51	427	11.9
3-4	29	1075	2.7
3-5	35	556	6.3
4-1	156	783	19.9
4-2	0	0	
4-3	9	351	2.6
5-1	70	180	38.9
5-2	1	10	10.0
5-3	10	37	27.0
5-4	1	27	3.7
6-1	94	224	42.0
合計	911	9262	9.8

* 車両制限令による最大輪重 5tonf を超える輪重を持つ車両を過積載^量と仮定し、法令制限の超過率を車種別に集計した結果。
車両