A TABLE of the natural RISE of WATER, in Proportion to the Reſiſtance or Obſtruction it meets with, in its Paſſage.

Conſtruction of a modern bridge of 2 arches.	Velocity of the Current in one Second	OBSTRUCTIONS, or RESISTANCES.							Stages of Accumulation in Floods	Conſtruction of an ancient bridge of 3 or more arches.
Reſiſtance 1-11th		1-8th	1-4th	3-8ths	1-half	5-8ths	3-4ths	7-8ths		Reſiſtance 5-18ths
Riſe of Water		Proportional Riſe of Water in Feet, Inches, and Parts.								Riſe of Water
F. I. Pts.		F. I. Pts.	F. I. Pts.	F. I. Pts.	F. I. Pts.	F. I. Pts.	F. I. Pts.	F. I. Pts.		F. I. Pts.
0 0 ·133	1 foot	0 0 ·158	0 0 ·283	0 0 ·49	0 0 ·87	0 1 ·69	0 4 ·041	1 4 ·728	Uniform Tenors.	0 0 ·320
0 0 ·533	2 feet	0 0 ·635	0 1 ·133	0 7 ·96	0 3 ·48	0 6 ·77	1 4 ·164	5 6 ·9		0 1 ·28
0 1 ·2	3 feet	0 1 ·428	0 2 ·549	0 4 ·41	0 7 ·835	1 3 ·234	3 0 ·368	12 6 ·53	Ordinary Floods.	0 2 ·881
0 2 ·133	4 feet	0 2 ·539	0 5 ·439	0 7 ·89	1 1 ·928	2 3 ·08	5 4 ·656	22 3 ·6		0 5 ·119
0 3 ·333	5 feet	0 3 ·967	0 7 ·083	1 0 ·25	1 9 ·763	3 6 ·316	8 5 ·024	34 10 ·31	Extraordinary Floods.	0 8 ·003
0 4 ·799	6 feet	0 5 ·713	0 10 ·199	1 5 ·64	2 7 ·339	5 0 ·934	12 1 ·476	50 2 ·112		0 11 ·525
Pier 12 River 132	Velocities above ſeldom happen.	Piers 20 Arches 140	Piers 40 Arches 140	Piers 60 Arches 160	Piers 80 Arches 160	Piers 100 Arches 160	Piers 120 Arches 160	Piers 140 Arches 160	Torrents above generally Inundations.	Piers 50 River 180

This, next to one arch, which has no reſiſtance, without the flood encroaches on its crown, the moſt eligible mode.

N. B. Theſe ſeveral numbers, reſpectively, ſhew how high the water is conſtrained to riſe above its natural level, or ſurface; which would otherwiſe, carry it off, in a free and uninterrupted paſſage; therefore theſe numbers muſt everywhere be added to the depth of water, below the fall, to give the true height of the flood.——The ſeven predicaments above ſhew the excellence or imperfection of bridges, of every conſtruction, and in all ſtates of a flood, either in its uniform or variable tenors; and by which appears the great advantage of bridges of a ſufficient capacity, and the pernicious conſequences of all ſuch as are not ſo.——London bridge is nearly in the 6th predicament of this table, and Weſtminſter bridge nearly in the 2nd. At the 1ſt of theſe the Thames, with a velocity of about 3 f. 2 in. per ſecond, riſes to about 4 f. 7 in. and at the latter, with a velocity of 2·5 f. per ſecond, to only 2·5 inches.

In this moſt common mode ſeldom ſufficient in a flood, the water ſoon encroaches on the arches, and changes the predicament.

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