

**ENGINEERING MAXIMS.**

Sir,—Thinking some of your readers would appreciate some thoughts on engineering on a lighter vein I send you these:—

To the engineer who makes a mystery of engineering; engineering is a mystery.

When you send a man out in the morning to stand by a picket, try and remember before night that he is there.

To be afraid of criticism, is to know there is something to fear.

Diplomacy is the art of telling a lie, when you might as well tell the truth.

Before giving advice, find out the kind of advice you are being paid to give.

Controllers and aldermen are inspired engineers, not merely trained.

When an alderman addresses an engineer, he should commence. "Although not exactly an engineer myself." This means that his knowledge is of a broad, unwarped character.

When a mayor receives a suggestion from an engineer, he should say, "Of course you are quite right; but, I have the whole mass of citizens to consider." This is non-committal.

The training of a city engineer should consist of, "a study of aldermen."

When clients are scarce, take in premium pupils.

When out of employment, talk about the posts you are busy refusing.

When out of employment, don't talk about the important post you once held, people wonder why you left.

While standing on your professional dignity, endeavor to keep your balance.

Don't be friendly with the contractor in public.

If a chief engineer does not understand his work, he can get a good man at \$25 a week to do it for him.

A chief engineer should not do work himself, he might be blamed for it.

Don't give an assistant orders in writing, the fool might carry them out.

An assistant should remember he is more able than his chief.

An assistant has had a university training, the chief probably only built universities.

If a contractor says, "How shall I do this?" Reply, "Now my good man, you know exactly how to do it. Suppose you were in my position what would you naturally advise?" Then say, "Any man with common sense would do exactly as you say." This inspires mutual confidence.

When a contractor says, "I have never had a wrong word with an engineer," it is his first contract.

When a contractor says, "My work never requires testing," take him at his word and have it redone properly.

The fundamental basis of engineering is "I guess!"

Yours, Cynicus.

Toronto, August 1st, 1908.

**WEIGHT OF TRACTION ENGINES.**

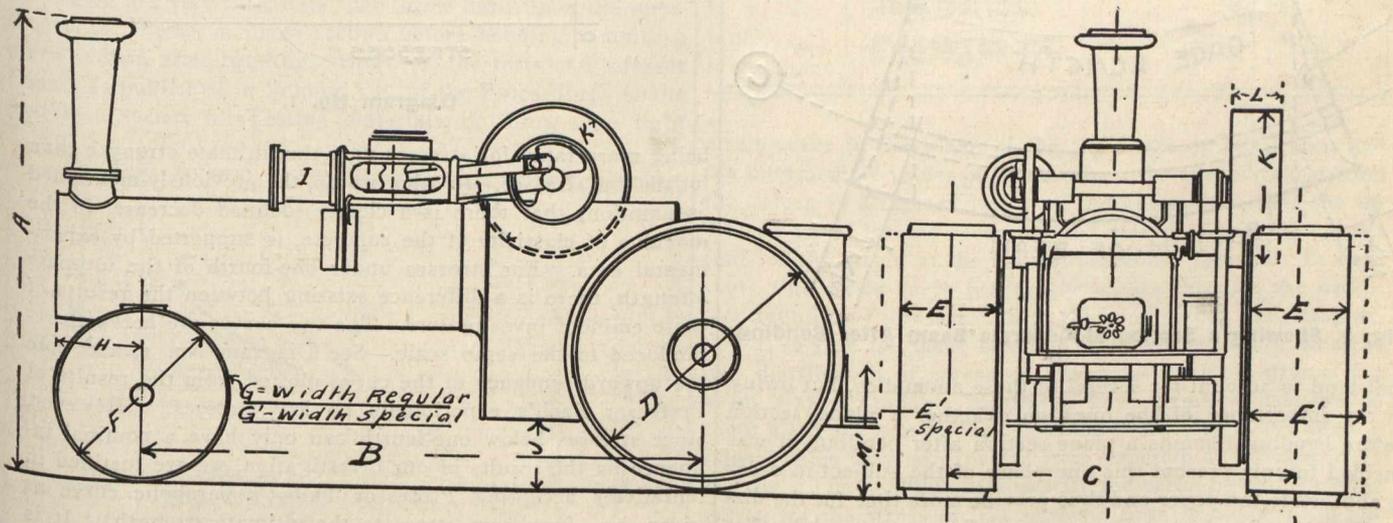
Sir,—In designing rural highway bridges, the heaviest loading we have to allow for is that put upon the structures by the traction engines and road locomotives.

The wheel loads and other dimensions of these engines

[Herewith you will find a diagram and table, furnished by the J. I. Case Company, Racine, Wis., which will give all information necessary to calculate moments and shears.

Column headed weight total gives total weight of engine, weight rear, gives weight on hind wheel; weight front, gives weight on front wheel of engine.

In this connection we might say that in general all traction engines with axle at rear of fire box, two-thirds of the



I find hard to secure and would be pleased if you could secure these for me.  
Willowdale, Ont.  
Yours,

weight is on the rear axle and on engines having stub axles bolted to the sides of the fire-box, three-quarters or more of the total weight is on the rear wheels.—Ed.]

Horse-power.	A	B	C	D	E	F	G	H	I	J	K	L	M	E'	G'	Weight Front.	Weight Rear.	Weight Total.
9	8'-8 13-16"	8'-1 1/2"	5'-6 5/8"	4'-5"	14"	38"	8"	2 3/4"	7 1/4" x 10"	13 1/2"	36"	9 1/2"	25 1/2"	16"	"	3,564	7,236	10,800
12	9'-7 9-16"	9'-5 1/4"	5'-11 3/8"	5'-0"	16"	42"	8"	2 1/2"	8 1/4" x 10"	14 5/8"	40"	10 1/2"	29"	24"	10"	4,165	8,455	12,620
15	9'-8 3/4"	10'-6"	6'-1 1/8"	5'-0"	18"	42"	10"	2 1/2"	9" x 10"	14 3/8"	40"	12"	29"	24"	12"	4,623	9,387	14,010
20	9'-11 3-16"	11'-1 5/8"	6'-6 1/8"	5'-6"	20"	44"	10"	2 1/2"	10" x 10"	17 3/8"	40"	12"	32"	36"	14"	5,067	10,288	15,355
25	10'-0 3/4"	11'-10 1/2"	7'-4 1-16"	5'-6"	24"	44"	12"	2 1/2"	11" x 11"	17 7/8"	40"	12"	32"	36"	16"	6,666	13,334	20,000
32	10'-5"	12'-2 3/8"	7'-0 3/4"	7'-0"	36"	53"	14"	3 1/2"	12" x 12"	21 3/8"	43 1/2"	16"	21 3/4"	48"	18"	10,000	22,000	32,000
Road Loco.	12'-0"	13'-4 3/8"	7'-11"	8'-0"	36"	53"	14"	3 1/2"	14" x 14"	50"	16"					14,667	29,333	44,000