

Annex A Explanatory Material

Annex A is not a part of the requirements of this NFPA document but is included for informational purposes only. This annex contains explanatory material, numbered to correspond with the applicable text paragraphs.

- A.7.1.1 Each jurisdiction or fire department could have its own rules governing the speed of fire service vehicles when responding to emergencies. Some jurisdictions permit fire apparatus vehicles to exceed posted speed limits, while others limit emergency vehicles to the posted speed limit. All drivers should have a thorough knowledge of the rules governing speed for fire service vehicles in their own jurisdictions and the jurisdictions of their mutual aid partners.
- A.7.1.3 Crashes at intersections can contribute to both civilian and fire department personnel deaths and injuries while fire department vehicles are responding to or returning from an emergency incident. Coming to a complete stop where there are any intersection hazards and proceeding only when the driver can do so safely can reduce crashes and risk of injury or death. It is recommended that intersection control devices be installed that allow emergency vehicles to control traffic lights at intersections.
- A.7.1.4 It is recommended that where railroad crossings are unguarded or where visibility is limited for any reason, including geography or weather, the fire apparatus should come to a complete stop before entering the crossing and should not proceed to cross until a crew member on foot outside the vehicle has signaled that it is safe to cross.
- Where the vehicle driver is responding alone or where, due to patient care, the crew member is unable to assist, the vehicle driver should idle the engine; turn off all radios, fans, wipers, and other noise-producing equipment in the cab; lower the windows; and listen for a train's horn before entering a grade crossing.
- A.7.1.5 Operating space is that area around the vehicle that enables the driver to stop or turn in order to avoid another vehicle or object. The necessary following distance varies depending on the type of pavement and whether the roadway is wet or dry, the speed of the vehicle, the condition of the braking system, and the reaction time of the driver. Rear-end collisions often occur because of inadequate operating space.

Table A.7.1.5(a) through Table A.7.1.5(c) were developed for educational rather than legal or engineering purposes. They provide recommended following distances based on vehicle speed, driver reaction time, and vehicle weight.

Table A.7.1.5(a) Recommended Following Distances for Light Two-Axle Trucks

Speed				Driver Reaction Distance		Vehicle Braking Distance		Total Stopping Distance	
km/hr	mi/hr	m/sec	ft/sec	m	ft	m	ft	m	ft
16	10	5	15	3	11	2	7	6	18
24	15	7	22	5	17	5	17	10	34
32	20	9	29	7	22	9	30	16	52
40	25	11	37	9	28	14	46	23	74
48	30	13	44	10	33	20	67	31	100
56	35	16	51	12	39	28	92	40	131
64	40	18	59	13	44	38	125	52	169
72	45	20	66	15	50	50	165	66	215
80	50	22	73	17	55	69	225	85	280
89	55	25	81	19	61	84	275	102	336
96	60	27	88	20	66	110	360	130	426

Table A.7.1.5(b) Recommended Following Distances for Heavy Two-Axle Trucks

Speed				Driver Reaction Distance		Vehicle Braking Distance		Total Stopping Distance	
km/hr	mi/hr	m/sec	ft/sec	m	ft	m	ft	m	ft
16	10	5	15	3	11	2	10	6	21
24	15	7	22	5	17	7	22	12	39
32	20	9	29	7	22	12	40	19	62
40	25	11	37	9	28	20	64	28	92
48	30	13	44	10	33	28	92	38	125
56	35	16	51	12	39	38	125	50	164
64	40	18	59	13	44	50	165	64	209
72	45	20	66	15	50	64	210	79	260
80	50	22	73	17	55	78	255	99	310
89	55	25	81	19	61	99	310	113	371
96	60	27	88	20	66	113	370	133	436

Table A.7.1.5(c) Recommended Following Distances for Three-Axle Trucks and Combinations

Speed				Driver Reaction Distance		Vehicle Braking Distance		Total Stopping Distance	
km/hr	mi/hr	m/sec	ft/sec	m	ft	m	ft	m	ft
16	10	5	15	3	11	4	13	7	24
24	15	7	22	5	17	9	29	14	46
32	20	9	29	7	22	15	50	22	72
40	25	11	37	9	28	24	80	33	108
48	30	13	44	10	33	35	115	45	148
56	35	16	51	12	39	49	160	61	199
64	40	18	59	13	44	63	205	76	249
72	45	20	66	15	50	79	260	99	310
80	50	22	73	17	55	98	320	114	375
89	55	25	81	19	61	119	390	138	451
96	60	27	88	20	66	142	465	162	531

A.7.1.6 A rule of thumb established by some training organizations standardizes the traveling distance for vehicles and apparatus traveling in queue as a 5-second interval for non-responding and 8-second interval for responding apparatus and vehicles. This margin would provide adequate safe separation during speed-up and braking maneuvers.

A.7.1.7 When it is necessary to pass other vehicles, the pass should be made to the left side of the other vehicle. Passing on the right side of other vehicles should be avoided.

A.7.1.9 Many fire department responses can be done in a non-emergency mode. Such responses can include the following:

- (1) Lock-outs
- (2) Dumpster fires (no exposures)
- (3) Investigation of unknown odors
- (4) Assisting police
- (5) Standby for bomb scare