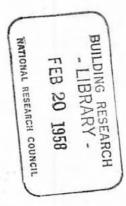


BUIDING NOTE

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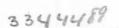
ANALYZED



COMPUTED MAXIMUM WIND GUST SPEEDS

by M.K. Thomas and D.W. Boyd

February 1958



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The maximum wind gust speed can be defined as the highest wind speed that will occur, on the average, once in a given number of years. These high wind gusts usually last for only a few seconds and can therefore be measured only with an anemometer whose response is of the order of a second or two. There are few such anemometers connected to recording apparatus in Canada; in practice, therefore, these gusts must be estimated from records of mean wind speeds.

The number of miles of wind passing cup anemometers in each hour are the only records of wind speeds that are readily available for most Canadian stations. Thomas (1) compared these hourly mileages at a few stations with the corresponding peak gusts recorded by Dines pressure-tube anemometers, and derived the following equation:

$$G(Max.) = 25 + 1.22 V$$

where G(Max.) is the maximum gust speed and V is the wind mileage for one hour as read from the three-cup anemograph.

The computed maximum gust speeds listed in this note are based on the maximum reported hourly mileage in a thirty year period, whenever such records are available. It is assumed that the anemometer is exposed in each case so that it will give wind speeds which are representative of average exposure at a height of about thirty feet above ground level.

Complete thirty-year wind speed records are available for a relatively small number of stations. Shorter records have been adjusted to make them comparable to the complete ones, and values for stations without anemometers have been estimated from nearby stations. The final computed values have been rounded off to the nearest five miles per hour.

A chart showing the variations in the computed maximum gust speed across Canada has been published in the National Building Code (2) and in the Climatological Atlas of Canada (3). In some cases it will be found that the values listed in this note do not agree precisely with the chart.

Discrepancies arise because it is not always possible to chart local variations, especially in areas where there are great variations in wind speeds across short distances.

Records for stations not listed can be obtained by writing to the Secretary, Associate Committee on the National Building Code, National Research Council, Ottawa.

References

- (1) Thomas, M.K., Computed gust speeds in Canada. Meteorological Division, Dept. of Transport, CIR-2328, TEC-158, July 1953.
- (2) National Research Council of Canada, Assoc. Committee on the National Building Code, National Building Code of Canada 1953.
- (3) Climatological atlas of Canada. Prepared by M.K. Thomas. December 1953. (A joint publication of the Meteorological Division, Dept. of Transport and the Division of Building Research, National Research Council of Canada.)
 NRC 3151, 253p.

COMPUTED MAXIMUM WIND GUST SPEEDS

(m/hr.)

	BRI	TISH COLUM	BIA	
Aldergrove Chilliwack Comox Estevan Point Fort Nelson Holberg Hope Kamloops Masset Matsqui	85 100 100 75 100 85 110 85		New Westminster Penticton Prince George Prince Rupert Swift River Tofino Vancouver Victoria Warfield	90 95 75 100 75 100 90 100
		ALBERTA		
Calgary Claresholm Cold Lake Edmonton Grande Prairie Lethbridge	100 115 100 100 95 120		McMurray Medicine Hat Namao Red Deer Vegreville Wainwright	95 105 100 100 100
	<u>s</u>	ASKATCHEWAN		
Dundurn Moose Jaw Prince Albert	90 1 00 90		Regina Saskatoon Swift Current	90 95 105
		MANITOBA		
Beausejour Brandon Churchill Flin Flon Gimli Macdonald	85 90 120 95 90		Portage la Prairie Rivers St. Vital Shilo Camp The Pas Winnipeg	90 90 90 90 90

ONTARIO

Armstrong 80 Oshawa 99 Aurora 100 Ottawa 99 Barrie 90 Owen Sound 99 Barriefield 90 Pagwa 88 Belleville 90 Pamour 88 Blind River 90 Petawawa 99 Brantford 90 Peterborough 99 Camp Borden 90 Picton 90 Centralia 95 Port Arthur 80 Chatham 90 Port Maitland 90 Clinton 95 Rockcliffe 99 Cobourg 95 St. Catherines 80 Dona 80 St. Thomas 99 Downsview 90 Sarnia 99 Edgar 90 Sault Ste. Marie 97 Falconbridge 80 Simcoe 97 Fort William 85 Sioux Lookout 77 Foymount 85 Stoux Lookout 77 Guelph 90 Timmins 89 Hamilton 85 Toronto 99 Kingston 90 Welland 99 Kitchener 90 Weston 90 Kitchener 90 Weston 90 Malton 90 Windsor 99 Malton 90 St. Hubert 90 Malton 90 St. Hubert 90 Malton 90 St. Johns 99 Clarke City 90 St. Johns 99 Clarke City 90 Senneterre 79 Condon 95 St. Jovite 89 Casey 75 St. Johns 99 Clarke City 90 Senneterre 79 Casey 75 St. Johns 99 Clarke City 90 Senneterre 79 Canneterre			-		
Arvida 85 Port Harrison 126 Aylmer 90 Quebec City 99 Bagotville 85 St. Felicien 86 Bouchard 90 St. Hubert 90 Casey 75 St. Johns 90 Clarke City 90 St. Jovite 85 Dorval 90 Senneterre 75 Hull 90 Seven Islands 90 Knob Lake 85 Sherbrooke 90	Armstrong Aurora Barrie Barriefield Belleville Blind River Brantford Camp Borden Centralia Chatham Clinton Cobourg Dona Downsview Edgar Falconbridge Fort William Foymount Gloucester Guelph Hamilton Kapuskasing Kingston Kitchener London Malton	80000000000000000000000000000000000000		Oshawa Ottawa Owen Sound Pagwa Pamour Petawawa Peterborough Picton Port Arthur Port Maitland Rockcliffe St. Catherines St. Thomas Sarnia Sault Ste. Marie Simcoe Sioux Lookout Stratford Sudbury Timmins Toronto Trenton Welland Weston Windsor	80 90 90 90 90 90 90 90 90 90 90 90 90 90
Aylmer 90 Quebec City 99 Bagotville 85 St. Felicien 86 Bouchard 90 St. Hubert 90 Casey 75 St. Johns 90 Clarke City 90 St. Jovite 85 Dorval 90 Senneterre 75 Hull 90 Seven Islands 90 Knob Lake 85 Sherbrooke 90			QUEBEC		
Bagotville 85 St. Felicien 86 Bouchard 90 St. Hubert 90 Casey 75 St. Johns 90 Clarke City 90 St. Jovite 85 Dorval 90 Senneterre 75 Hull 90 Seven Islands 90 Knob Lake 85 Sherbrooke 90	Aylmer	90			120 95
Hull 90 Seven Islands 90 Knob Lake 85 Sherbrooke 90	Bagotville Bouchard Casey	85 90 75		St. Felicien St. Hubert St. Johns	80 90
	Dorval Hull	90 90		Senneterre Seven Islands	90
Mont Joli 110 Valcartier 9	Lachine	90		Three Rivers	90 90 95
Montreal 90 Val d'Or 80	Outremont	90			80 90

NEW BRUNSWICK

4 74 50			
Campbellton Chatham Fredericton Gagetown	90 90 95 100	McGivney Moncton Renous Saint John	95 100 90 100
	NOVA :	SCOTIA	
Cornwallis Dartmouth Debert Digby Greenwood	95 100 105 95 95	Halifax Newport Sydney Windsor Yarmouth	100 95 110 95 100
	PRINCE EDWA	ARD ISLAND	
Charlottetown	110 NEWFOUL	Summerside	110
	NEWF OUT	NDLAND	
Corner Brook Gander Goose	100 110 90	St. John's Torbay	100 105
	YUKON TE	RRITORIES	
Dawson Snag	70 80	Whitehorse	75
Sec.	NORTHWEST T	ERRITORIES	
Aklavik Cambridge Bay Coral Harbour Fort Norman	90 100 120 75	Frobisher Padloping Island Resolute Yellowknife	120 120 100 90