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General

Wind adversely affects lifting capacity and stability as shown in Figure 1. The result could be loss of control over the load and crane, even if the load is within the crane's capacity.

WARNING

TIPPING CRANE HAZARD! Judgment and experience of qualified operators, job planners, and supervisors must be used to compensate for affect of wind on lifted load and boom by reducing ratings, reducing operating speeds, or a combination of both.

Failing to observe this precaution can cause crane to tip or boom and/or jib to collapse. Death or serious injury to personnel can result.

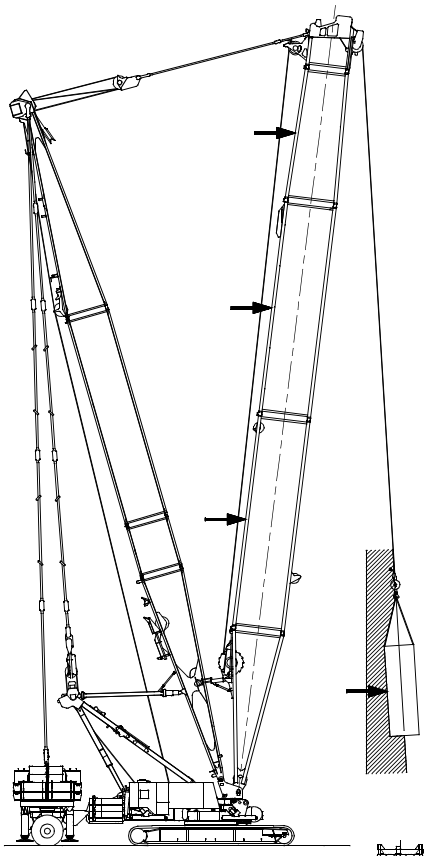
Wind speed (to include wind gusts) must be monitored by job planners and supervisors.

Beware that wind speed at the boom or jib point can be greater than wind speed at ground level. Also beware that the larger the sail area of the load, the greater the wind's affect on the load.

As a general rule, ratings and operating speeds must be reduced when:

Wind causes load to swing forward past allowable operating radius or sideways past either boom hinge pin.

Forward stability is affected by wind on the rear of the boom. Wind applies a force to the boom and load that adds to the crane's overturning moment. This action has the same effect as adding load to the hook.



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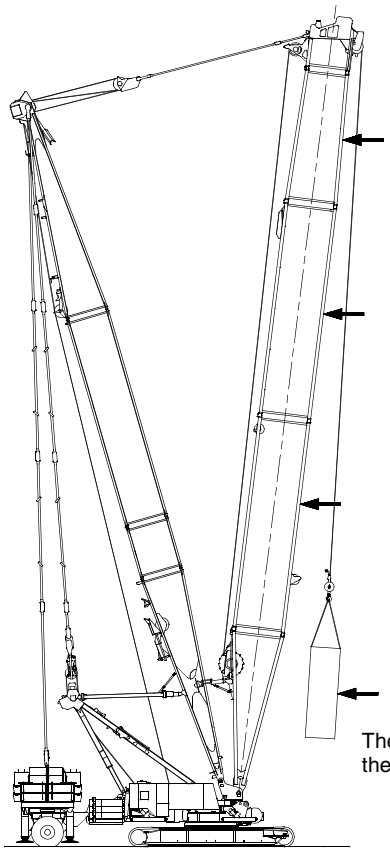
The wind's affect on the rear of the load increases load radius. This condition can result in an overload hazard, possibly causing the crane to tip or the boom to collapse.

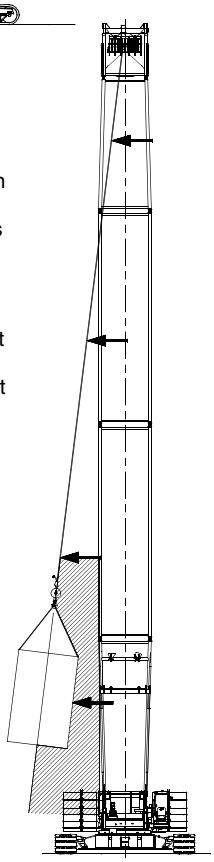
To avoid this hazard, reduce operating speeds and load (see Tables for recommended capacity reductions).



Backward stability is affected by wind on the front of the boom. This condition is especially dangerous when the boom is at or near the maximum angle when operating without load.

Wind forces on the front of the boom reduce the normal forward tipping effect of the boom. The crane can tip or the boom can collapse if this condition is not avoided.

The boom can buckle and collapse if the load contacts the boom.



Boom strength is affected the most when the wind acts on the side of the boom.

The wind's affect on the side of the load can cause the load to swing out past the boom hinge pin. This condition can result in excessive side load forces on the boom, possibly causing the crane to tip or the boom to collapse.

To avoid this hazard, reduce operating speeds and load (see Tables for recommended capacity reductions).

FIGURE 1

Manitowoc Recommendations

Operation Permitted

Operation is permitted in steady winds or wind gusts up to 35 mph (16 m/s). However, ratings must be reduced the amount given in the following tables for the corresponding attachment.

Table 1
Rating Reductions for Various Wind Speeds and Wind Gusts
WHEN EQUIPPED WITH #79 BOOM

Boom Length ft (m)		120–240 (36.6–73.2)	260–300 (79.2–91.4)	320–340 (97.5–103.6)	360 (109.7)
Maximum Wind Speed		**Percent Rating Reduction**			
mph	m/s				
15	7	0	0	0	0
20	9	0	0	10	10
25	11	0	10	20	20
30	13	0	10	20	30
35	16	0	20	30	50
Above 35 mph (16 m/s)		**OPERATION NOT PERMITTED**			

Table 2
Rating Reductions for Various Wind Speeds and Wind Gusts
WHEN EQUIPPED WITH #79-44 BOOM

Boom Length ft (m)		200–240 (61.0–73.2)	260–300 (79.2–91.4)	320–360 (97.5–109.7)	380–400 (115.8–121.9)
Maximum Wind Speed		**Percent Rating Reduction**			
mph	m/s				
15	7	0	0	0	0
20	9	0	0	10	20
25	11	0	10	20	30
30	13	0	10	30	50
35	16	0	20	50	
Above 35 mph (16 m/s)		**OPERATION NOT PERMITTED**			

Table 3
Rating Reductions for Various Winds and Wind Gusts
WHEN EQUIPPED WITH #79-44 BOOM AND #132 FIXED JIB

Jib Length ft (m)		40–80 (12.2–24.4)			100–120 (30.5–36.6)		
Boom Length ft (m)		200–240 (61–73.2)	260–320 (79.2–97.5)	340–400 (103.6–115.8)	200–240 (61–73.2)	260–320 (79.2–97.5)	340–380 (103.6–115.8)
Maximum Wind Speed		**Percent Rating Reduction**					
mph	m/s						
15	7	0	0	0	0	0	0
20	9	0	0	10	0	20	20
25	11	0	10	20	10	30	30
30	13	10	10	50	20	50	50
35	16	10	20		30		
Above 35 mph (16 m/s)		**OPERATION NOT PERMITTED**					

For operation in winds above 20 mph with boom positioned above 75°, load block from jib point must weigh at least 4,425 lb (2 007 kg). ***Fixed jib may be blown over backwards if this precaution is not observed.***

Table 4
Rating Reductions for Various Wind Speeds and Wind Gusts
WHEN EQUIPPED WITH #79 BOOM AND #44 LUFFING JIB OR #44 FIXED JIB

Luffing Jib Length ft (m)		70–120 (21.3–36.6)			130–170 (39.6–51.8)			180–240 (54.9–73.2)		
Boom Length ft (m)		140–180 (42.7–54.9)	200–260 (61.0–79.2)	280–300 (85.3–91.4)	140–180 (42.7–54.9)	200–260 (61.0–79.2)	280–300 (85.3–91.4)	140–180 (42.7–54.9)	200–260 (61.0–79.2)	280–300 (85.3–91.4)
Maximum Wind Speed		**Percent Rating Reduction**								
mph	m/s									
15	7	0	0	0	0	0	0	0	0	0
20	9	0	0	0	0	0	0	0	40	60
25	11	0	0	10	0	20	40	0		
30	13	0	10	30	0	50				
35	16	0	20	50	0					
Above 35 mph (16 m/s)		**OPERATION NOT PERMITTED**								

For luffing jib operation in winds above 15 mph (7 m/s) with luffing jib positioned above 50°, load block from luffing jib point must weigh at least 10,000 lb (4 540 kg). ***Luffing jib could be blown over backwards if this precaution is not observed.***

For fixed jib operation in winds above 15 mph (7 m/s) with boom positioned above 70°, load block from fixed jib point must weigh at least 10,000 lb (4 540 kg). ***Fixed jib could be blown over backwards if this precaution is not observed.***

Table 5
Rating Reductions for Various Winds and Wind Gusts
WHEN EQUIPPED WITH #79-44 BOOM AND #133 OR 133A LUFFING JIB

Luffing Jib Length ft (m)		70–130 (21.3–39.6)			140–170 (42.7–51.8)			180–200 (54.9–61)		
Boom Length ft **(m)**		200–240 (61–73.2)	260–280 (79.2–85.3)	300 (91.4)	200–240 (61–73.2)	260–280 (79.2–85.3)	300 (91.4)	200–240 (61–73.2)	260–280 (79.2–85.3)	300 (91.4)
Maximum Wind Speed		**Percent Rating Reduction**								
mph	m/s									
15	7	0	0	0	0	0	0	0	0	0
20	9	0	0	0	0	0	0	0	0	0
25	11	0	0	0	0	0	0	0	0	0
30	13	0	0	0	0	0	20	0	60	
35	16	0	10	20	0			50		
Above 35 mph (16 m/s)		**OPERATION NOT PERMITTED**								

For operation in winds above 20 mph with luffing jib positioned above 60°, load block from jib point must weigh at least 7,800 lb (3 538 kg). ***Luffing jib may be blown over backwards if this precaution is not observed.***

Table 6
Rating Reductions for Various Winds and Wind Gusts
WHEN EQUIPPED WITH #79-44 BOOM, #133 OR 133A LUFFING JIB, AND #140 FIXED JIB

Total Length ft (m)		460–520 (140.2–158.5)	530–620 (161.5–189)
Maximum Wind Speed		**Percent Rating Reduction**	
mph	m/s		
15	7	0	0
20	9	0	0
25	11	0	
Above 25 mph (11 m/s)		**OPERATION NOT PERMITTED**	

For operation in winds above 15 mph with luffing jib positioned above 65°, load block from jib point must weigh at least 1,900 lb (862 kg). ***Luffing jib may be blown over backwards if this precaution is not observed.*** *Wind speed to be measured at boom top.*

Operation Not Permitted

NOTE: For special conditions not covered below, contact Technical Services Department at factory.

#79 Boom Only

- **Up to 50 mph (22 m/s)** — Park crane (upper in line with crawlers) with load block on ground or secured and position boom no higher than 75°.
- **Above 50 mph (22 m/s)** — Lower boom onto blocking at ground level.

#79-44 Boom
200 – 360' (61.0 – 109.7 m)

- **Up to 50 mph (22 m/s)** — Park crane (upper in line with crawlers) with load block on ground or secured and position boom at 70°.
- **Above 50 mph (22 m/s)** — Lower boom onto blocking at ground level.

#79-44 Boom
380 – 400' (115.8 – 121.9 m)

- **Up to 40 mph (18 m/s)** — Park crane (upper in line with crawlers) with load block on ground or secured and position boom at 70°.
- **Above 40 mph (18 m/s)** — Lower boom onto blocking at ground level.

#79-44 Boom and #132 Fixed Jib
Up to 400' (121.9 m) Combined Length

- **Up to 50 mph (22 m/s)** — Park crane (upper in line with crawlers) with load block on ground or secured and position boom at 75°.
- **Above 50 mph (22 m/s)** — Lower boom and jib onto blocking at ground level.

#79-44 Boom and #132 Fixed Jib
420' (128.0 m) and Greater Combined Length

- **Up to 35 mph (16 m/s)** — Park crane (upper in line with crawlers) with load block on ground or secured and position boom at 75°.
- **Above 35 mph 16 m/s)** — Lower boom and jib onto blocking at ground level.

#79 Boom with #44 Luffing Jib

- **Up to 50 mph (22 m/s)** — Park crane (upper in line with crawlers) with load block on ground or secured and position boom at 75° and luffing jib at 50°.
- **Above 50 mph (22 m/s)** — Lower boom and jib onto blocking at ground level.

#79 Boom with #44 Fixed Jib

- **Up to 50 mph (22 m/s)** — Park crane (upper in line with crawlers) with load block on ground or secured and position boom at 75°.
- **Above 50 mph (22 m/s)** — Lower boom and jib onto blocking at ground level.

#79-44 Boom with #133 or 133A Luffing Jib
70 – 140' (21.3 – 42.7 m) of Jib

- **Up to 50 mph (22 m/s)** — Park crane (upper in line with crawlers) with load block on ground or secured, and position boom at 75° and luffing jib at 45°.
- **Above 50 mph (22 m/s) above** — Lower boom and jib onto blocking at ground level.

#79-44 Boom with #133 or 133A Luffing Jib
150 – 200' (45.7 – 61.0 m) of Jib

- **Up to 40 mph (18 m/s)** — Park crane (upper in line with crawlers) with load block on ground or secured, and position boom at 75° and luffing jib at 45°.
- **Above 40 mph (18 m/s)** — Lower boom and jib onto blocking at ground level.

#79-44 Boom, #133 or 133A Luffing Jib, and #140 Fixed Jib
460 – 520' (140.2 – 158.5 m) Combined Length

- **Up to 40 mph (18 m/s)** — Park crane (upper in line with crawlers) with load block on ground or secured, and position boom at 75° and luffing jib at 50°.
- **Above 40 mph (18 m/s)** — Lower boom and jibs onto blocking at ground level.

#79-44 Boom, #133 or 133A Luffing Jib, and #140 Fixed Jib
530 – 620' (161.5 – 189.0 m) Combined Length

- **Up to 35 mph (16 m/s)** — Park crane (upper in line with crawlers) with load block on ground or secured, and position boom at 75° and luffing jib at 50°.
- **Above 35 mph (16 m/s)** — Lower boom and jibs onto blocking at ground level.

Mast

- **Above 50 mph (22 m/s)** — Haul in boom hoist wire rope just enough to tension mast straps. Do not raise boom off blocking. ***Wind can cause mast stops to collapse if this step is not performed.***
- **Above 75 mph (34 m/s) above** — Lower mast onto blocking at ground level.