

WIND CONDITIONS

Models 777 and 777T

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GENERAL

Wind adversely affects lifting capacity and stability as shown in Figure1. 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.

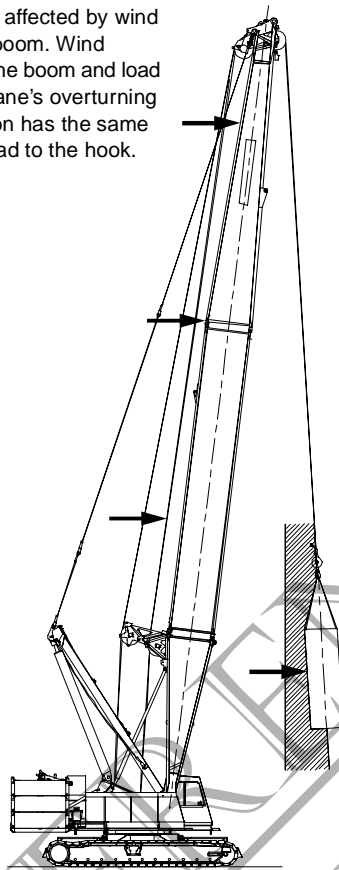
Wind speed (to include wind gusts) must be monitored by job planners and supervisors.

Beware that wind speed at 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.



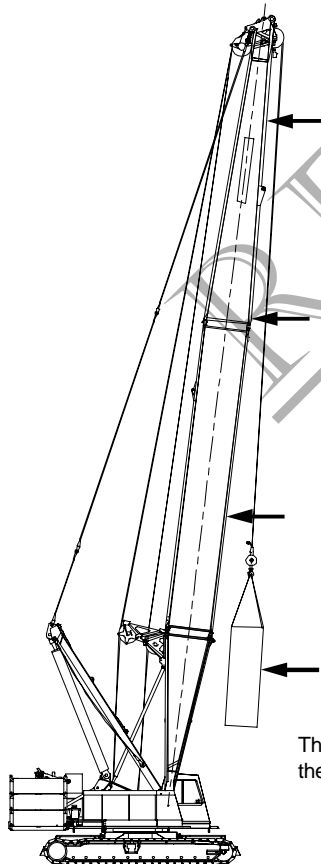
The wind's affect on the rear of the load increases load radius. This condition can result in an overload hazard, possibly causing the crane to tip or the boom to collapse.

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

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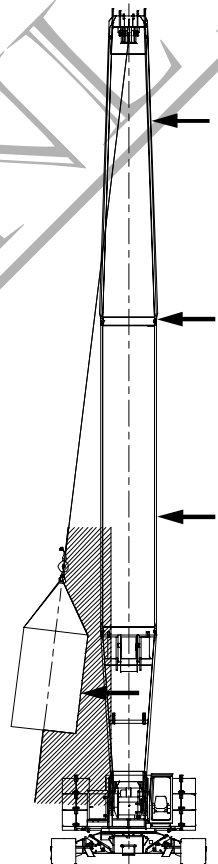
Backward stability is affected by wind on the front of the boom. This condition is especially dangerous when the boom is at or near the maximum angle when operating without load.

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 appropriate table for recommended capacity reductions).

FIGURE 1

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 appropriate table in the following sections when the corresponding wind speed is reached.

RATING REDUCTION/ OPERATION NOT PERMITTED

777 with #78 Boom

Table 1 — Rating Reductions for Various Wind Speeds and Wind Gusts

#78 BOOM WITH #134 FIXED JIB (OR BOOM ONLY)

Boom Length ft (m)		60-180 (18.3-54.9)	190-270 (57.9-82.3)
Maximum Wind Speed		Percent	
mph	m/s	Rating Reduction	
15	7	0	0
20	9	0	10
25	11	10	20
30	13	10	30
35	16	20	40
Above 35 mph (16 m/s)		OPERATION NOT PERMITTED	

For operation in steady winds or wind gusts above 25 mph (11 m/s) *at front of boom*, do not operate boom higher than 65° with loads less than 5,500 lb (2 495 kg). **Boom and fixed jib could be blown over backwards if this precaution is not observed.**

Table 2 — Rating Reductions for Various Wind Speeds and Wind Gusts

#78 BOOM WITH #139 LUFFING JIB

Luffing Jib Length ft (m)		70-110 (21.3-33.5)	70-110 (21.3-33.5)	70-110 (21.3-33.5)	120-150 (36.6-45.7)	120-150 (36.6-45.7)	120-150 (36.6-45.7)	160-170 (48.8-51.8)	160-170 (48.8-51.8)	160-170 (48.8-51.8)
Boom Length ft (m)		70-120 (21.3-36.6)	130-160 (39.6-48.8)	170-180 (51.8-54.9)	70-120 (21.3-36.6)	130-160 (39.6-48.8)	170-180 (51.8-54.9)	70-120 (21.3-36.6)	130-160 (39.6-48.8)	170-180 (51.8-54.9)
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	10	0	0	40
25	11	0	0	0	0	OPERATION NOT PERMITTED				
30	13	0	0	30						
35	16	0	50							
Above 35 mph (16 m/s)		OPERATION NOT PERMITTED								

For operation in steady winds or wind gusts above 20 mph (9 m/s) *at front of boom*, do not operate luffing jib higher than 55° with loads less than 2,800 lb (1 270 kg). **Boom and luffing jib could be blown over backwards if this precaution is not observed. Refer to luffing jib capacity chart for specific backward stability problems (b on capacity chart).**

Operation Not Permitted

#78 Boom, #134 Fixed Jib and #139 Luffing Jib

Operation is not permitted when wind speed is above the following limits or wind gusts above these limits are expected:

35 mph (16 m/s) —

- For boom or boom with fixed jib, park crane (upper in line with crawlers) and position boom at 65°.
- For boom with luffing jib, park crane (upper in line with crawlers) and position boom at 75° and luffing jib at 45°.

50 mph (22 m/s) — Lower boom and jib onto blocking at ground level.

777T with #78T Heavy Lift Boom**Table 3 — Rating Reductions for Various Wind Speeds and Wind Gusts**

#78T HL BOOM WITH #134 FIXED JIB (OR BOOM ONLY)

Boom Length ft (m)		60-180 (18.3-54.9)	190-270 (57.9-82.3)
Maximum Wind Speed		Percent	
mph	m/s	Rating Reduction	
15	7	0	0
20	9	0	10
25	11	10	20
30	13	10	30
35	16	20	40
Above 35 mph (16 m/s)		OPERATION NOT PERMITTED	

For operation in steady winds or wind gusts above 25 mph (11 m/s) *at front of boom*, do not operate boom higher than 65° with load less than 5,500 lb (2 495 kg). **Boom and fixed jib could be blown over backwards if this precaution is not observed.**

Table 4 — Rating Reductions for Various Wind Speeds and Wind Gusts

#78T HL BOOM WITH #139 LUFFING JIB

Luffing Jib Length ft (m)		70-110 (21.3-33.5)	70-110 (21.3-33.5)	70-110 (21.3-33.5)	120-150 (36.6-45.7)	120-150 (36.6-45.7)	120-150 (36.6-45.7)	160-170 (48.8-51.8)	160-170 (48.8-51.8)	160-170 (48.8-51.8)
Boom Length ft (m)		70-120 (21.3-36.6)	130-160 (39.6-48.8)	170-180 (51.8-54.9)	70-120 (21.3-36.6)	130-160 (39.6-48.8)	170-180 (51.8-54.9)	70-120 (21.3-36.6)	130-160 (39.6-48.8)	170-180 (51.8-54.9)
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	10	0	0	40
25	11	0	0	0	0	OPERATION NOT PERMITTED				
30	13	0	0	30						
35	16	0	50							
Above 35 mph (16 m/s)		OPERATION NOT PERMITTED								

For operation in steady winds or wind gusts above 20 mph (9 m/s) *at front of boom*, do not operate luffing jib higher than 55° with loads less than 2,800 lb (1 270 kg). **Boom and luffing jib could be blown over backwards if this precaution is not observed. Refer to luffing jib capacity chart for specific backward stability problems (b on capacity chart).**

Operation Not Permitted

#78T Boom, #134 Fixed Jib and #139 Luffing Jib

Operation is not permitted when wind speed is above the following limits or wind gusts above these limits are expected:

35 mph (16 m/s) —

- For boom or boom with fixed jib, park crane (upper in line with crawlers) and position boom at 65°.
- For boom with luffing jib, park crane (upper in line with crawlers) and position boom at 75° and luffing jib at 45°.

50 mph (22 m/s) — Lower boom and jib onto blocking at ground level.

777T with #78T Long Reach Boom**Table 5 — Rating Reductions for Various Wind Speeds and Wind Gusts**

#78T LR BOOM

Boom Length ft (m)		138-208 (42.1-63.4)	218-268 (66.4-81.7)	278-298 (84.7-90.8)
Maximum Wind Speed		Percent		
mph	m/s	Rating Reduction		
15	7	0	0	0
20	9	0	10	20
25	11	10	20	30
30	13	10	30	
35	16	20	40	
Above 35 mph (16 m/s)		OPERATION NOT PERMITTED		

For operation in steady winds or wind gusts above 25 mph (11 m/s) at front of boom, do not operate boom higher than 65° with loads less than 3,900 lb (1 770 kg). **Boom could be blown over backwards if this precaution is not observed.**

Operation Not Permitted

#78T LR Boom

Operation is not permitted when wind speed is above the following limits or wind gusts above these limits are expected:

138-268 ft (42.1-81.7 m) Boom

- Up to 50 mph (22 m/s) — Park crane (upper in line with crawlers) and position boom at 65°.
- 50 mph (22 m/s) and Above — Lower boom onto blocking at ground level.

278-298 ft (84.7-90.8 m) Boom

- Up to 40 mph (18 m/s) — Park crane (upper in line with crawlers) and position boom at 65°.
- 40 mph (18 m/s) and Above — Lower boom onto blocking at ground level.

Table 6 — Rating Reductions for Various Wind Speeds and Wind Gusts

#78T LR BOOM WITH #134 FIXED JIB

Boom Length ft (m)		138-208 (42.1-63.4)		218-268 (66.4-81.7)	
Fixed Jib Length ft (m)		30-50 (9.1-15.2)	60-80 (18.3-24.4)	30-50 (9.1-15.2)	60-80 (18.3-24.4)
Maximum Wind Speed		Percent			
mph	m/s	Rating Reduction			
15	7	0	0	0	0
20	9	0	0	0	10
25	11	0	10	20	30
30	13	10	10	30	
35	16	20	50		
Above 35 mph (16 m/s)		OPERATION NOT PERMITTED			

For operation in steady winds or wind gusts above 15 mph (7 m/s) *at front of boom*, do not operate boom higher than 65° with loads less than 1,250 lb (567 kg). ***Boom and fixed jib could be blown over backwards if this precaution is not observed.***

Operation Not Permitted

#78T LR Boom with #134 Fixed Jib

Operation is not permitted when wind speed is above the following limits or wind gusts above these limits are expected:

138-168 ft (42.1-51.2 m) Boom with 30-80 ft (9.1-24.4 m) Fixed Jib

- Up to 50 mph (22 m/s) — Park crane (upper in line with crawlers) and position boom at 65°.
- 50 mph (22 m/s) and Above — Lower boom and jib onto blocking at ground level.

178-268 ft (54.3-81.7 m) Boom with 30-80 ft (9.1-24.4 m) Fixed Jib

- Up to 40 mph (18 m/s) — Park crane (upper in line with crawlers) and position boom at 65°.
- 40 mph (18 m/s) and Above — Lower boom and jib onto blocking at ground level.