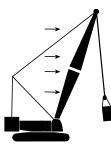


Jib No. 148 on Boom No. B10:680

#### **General Information**

- A. Judgment and experience of qualified operators, job planners, and supervisors must be used to compensate for affect of wind on lifted load, boom and jib by reducing ratings, reducing operating speeds, or a combination of both. Failing to observe this precaution can cause crane to tip or boom and jib to collapse. Death or serious injury to personnel can result.
- B. Wind speed (to include wind gusts) must be monitored by job planners and supervisors. Be aware that wind speed at jib point can be greater than wind speed at ground level. Also be aware that the larger the sail area of the load, the greater the wind's affect on the load.
- C. Wind adversely affects lifting capacity and stability as shown below. The result could be loss of control over the load and crane, even if the load is within the crane's capacity.
- D. 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.*

### How Wind Affects a Crane



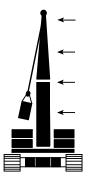
Forward stability is affected by wind on the rear of the boom and jib. Wind applies a force to the boom, jib, and load that adds to the crane's overturning moment. This action has the same effect as adding load to the hook.

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 and jib to collapse.

To avoid this hazard, reduce operating speeds and load (see appropriate table for maximum wind speed).



- Backward stability is affected by wind on the front of the boom and jib. 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 and jib reduce the normal forward tipping effect of the boom and jib. The crane can tip or the boom and jib can collapse if this condition is not avoided.
- The boom or jib can buckle and collapse if the load contacts the boom or jib.



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

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 and jib, possibly causing the crane to tip or the boom or jib to collapse.

To avoid this hazard, reduce operating speeds and load (see appropriate table for maximum wind speed).



Jib No. 148 on Boom No. B10:680

## In Service

Operation is permitted in steady winds or gusts up to the maximum wind speed given in the *In Service* portion of Tables 1 thru 11, provided the lifted load does not exceed capacity chart percentage.

Wind speed to be measured at jib point elevation.

Refer to jib capacity chart for specific backward stability conditions.

## **Out of Service**

Operation is not permitted and **Out of Service Conditions** must be followed when wind speed exceeds maximum value listed in the *In Service* portion of Tables 1 thru 11 for a given configuration.

## **Out of Service Conditions**

**Parking Position -** Park crane (upper in-line with crawlers) with load blocks and weight balls on ground or secured and position boom at 70 degrees.

Ground Position - Lower boom and jib onto blocking at ground level.

ible 1									
Boom Length m (ft)		32,0 (105.0)							
<b>Jib Length</b> m (ft)	12,0 (39.4)								
Percent of Capacity Chart		Maximum		<b>Service Wind</b> ph)	Speed m/s				
100	16 (35)	14 (30)	14 (30)	11 (25)	11 (25)	11 (25)			
90	16 (35)	16 (35)	16 (35)	14 (30)	14 (30)	14 (30)			
80	16 (35)	16 (35)	16 (35)	16 (35)	16 (35)	16 (35)			
Condition	Maximum Permitted Out of Service Wind Speed m/s (mph)								
Parking Position	22 (50)	22 (50)	22 (50)	22 (50)	22 (50)	22 (50)			
Ground Position	W	hen maximur	n Parking Pos	ition wind spe	ed is exceede	ed			



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## Table 2

Boom Length m (ft)		38,0 (124.7)						
<b>Jib Length</b> m (ft)	12,0 (39.4)	18,0 (59.1)	24,0 (78.7)	30,0 (98.4)	36,0 (118.1)	42,0 (137.8)		
Percent of Capacity Chart		Maximum Permitted In Service Wind Speed m/s (mph)						
100	16 (35)							
90	16 (35)	16 (35)	16 (35)	14 (30)	14 (30)	• 14 (30)		
80	16 (35)	16 (35)	16 (35)	16 (35)	16 (35)	16 (35)		
Condition		Maximum Permitted Out of Service Wind Speed m/s (mph)						
Parking Position	22 (50)	22 (50)	22 (50)	22 (50)	22 (50)	22 (50)		
Ground Position	V	Vhen maximur	n Parking Pos	ition wind spe	ed is exceede	ed		

44,0							
	(144.4)						
12,0	12,0 18,0 24,0 30,0 36,0 42,0						
(39.4)	(59.1)	(78.7)	(98.4)	(118.1)	(137.8)		
	Maximum I	Permitted In S	Service Wind	Speed m/s			
		(mj	ph)				
16	14	14	11	11	11		
(35)	(30)	(30)	(25)	(25)	(25)		
16	16	16	14	14	14		
(35)	(35)	(35)	(30)	(30)	(30)		
16	16	16	16	16	16		
(35)	(35)	(35)	(35)	(35)	(35)		
Maximum Permitted Out of Service Wind Speeds m/s							
(mph)							
22	22	22	22	22	22		
(50)	(50)	(50)	(50)	(50)	(50)		
When maximum Parking Position wind speed is exceeded							
	(39.4) 16 (35) 16 (35) 16 (35) <b>1</b> 6 (35) <b>1</b> 6 <b>1</b> 6 (35) <b>1</b> 6 <b>1</b> 6 (35) <b>1</b> 6 <b>1</b> 6	(39.4) (59.1)   Maximum I   16 14   (35) (30)   16 16   (35) (35)   16 16   (35) (35)   16 16   (35) (35)   16 16   (35) (35)   16 16   (35) (35)   22 22   (50) (50)	(14.       12,0     18,0     24,0       (39.4)     (59.1)     (78.7)       Maximum Permitted In Some constraints     (m)       16     14     14       (35)     (30)     (30)       16     16     16       (35)     (35)     (35)       16     16     16       (35)     (35)     (35)       16     16     16       (35)     (35)     (35)       Maximum Permitted Out o     (m)       22     22     22       (50)     (50)     (50)	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	$\begin{array}{c c c c c c c c c c c c c c c c c c c $		

Jib No. 148 on Boom No. B10:680

#### Table 4

Boom Length m (ft)		50,0 (164.0)						
<b>Jib Length</b> m	12,0	18,0	24,0	30,0	36,0	42,0		
(ft)	(39.4)	(59.1)	(78.7)	(98.4)	(118.1)	(137.8)		
Percent of Capacity Chart		Maximum Permitted In Service Wind Speed m/s (mph)						
100	16	14	14	11	11	11		
	(35)	(30)	(30)	(25)	(25)	(25)		
90	16	16	16	14	14	14		
	(35)	(35)	(35)	(30)	(30)	(30)		
80	16	16	16	16	16	16		
	(35)	(35)	(35)	(35)	(35)	(35)		
Condition	Maximum Permitted Out of Service Wind Speed m/s (mph)							
Parking Position	22	22	22	22	22	22		
	(50)	(50)	(50)	(50)	(50)	(50)		
Ground Position	V	hen maximur	n Parking Pos	ition wind spe	ed is exceede	ed		

Boom Length m (ft)	56,0 (183.7)							
Jib Length m	12,0	12,0 18,0 24,0 30,0 36,0 42,0						
(ft)	(39.4)	(59.1)	(78.7)	(98.4)	(118.1)	(137.8)		
Percent of		Maximum I	Permitted In S	Service Wind	Speed m/s			
Capacity Chart			(mj	ph)				
100	16 (35)	14 (30)	14 (30)	11 (25)	11 (25)	11 (25)		
90	16 (35)	16 (35)	16 (35)	14 (30)	14 (30)	14 (30)		
80	16 (35)							
Condition	Maximum Permitted Out of Service Wind Speed m/s (mph)							
Parking Position	22 (50)	22 (50)	22 (50)	22 (50)	22 (50)	22 (50)		
Ground Position	W	hen maximur	n Parking Pos	ition wind spe	ed is exceede	ed		





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### Table 6

Boom Length m (ft)		62,0 (203.4)							
<b>Jib Length</b> m (ft)	12,0 (39.4)								
Percent of Capacity Chart		Maximum Permitted In Service Wind Speed m/s (mph)							
100	16 (35)								
90	16 (35)	16 (35)	16 (35)	14 (30)	14 (30)	14 (30)			
80	16 (35)	16 (35)	16 (35)	16 (35)	16 (35)	16 (35)			
Condition		Maximum Permitted Out of Service Wind Speed m/s (mph)							
Parking Position	22 (50)	22 (50)	22 (50)	22 (50)	22 (50)	22 (50)			
Ground Position	V	hen maximur	n Parking Pos	ition wind spe	ed is exceede	d			

$\begin{array}{c c c c c c c c c c c c c c c c c c c $									
Jib Length m (ft)     12,0 (39.4)     18,0 (59.1)     24,0 (78.7)     30,0 (98.4)     36,0 (118.1)     42,0 (137.8)       Percent of Capacity Chart     Maximum Permitted In Service Wind Speed m/s (mph)     (118.1)     (137.8)       100     16     14     14     11     11     11       100     16     14     14     11     11     11       100     16     16     16     16     16     16     14       90     16     16     16     16     16     16     16       80     16     16     16     16     16     16     16       80     16     16     16     16     16     16     16       35)     (35)     (35)     (35)     (35)     (35)     (35)     (35)       80     16     16     16     16     16     16     16       (35)     (35)     (35)     (35)     (35)     (35)     (35)     (35)       80									
(ft)     (39.4)     (59.1)     (78.7)     (98.4)     (118.1)     (137.8)       Percent of Capacity Chart     Maximum Permitted In Service Wind Speed m/s (mph)       100     16     14     14     11     11     11       100     16     14     14     14     11     11     11       90     16     16     16     16     14     14     14     14       90     16     16     16     16     16     14     14     14       90     16     16     16     16     16     16     16     16     16       80     16 <td>(ft)</td> <td></td> <td colspan="7">(223.1)</td>	(ft)		(223.1)						
Percent of Capacity Chart     Maximum Permitted In Service Wind Speed m/s (mph)       100     16 (35)     14 (30)     14 (25)     11 (25)     11 (25)       90     16 (35)     16 (35) </td <td>Jib Length m</td> <td>12,0</td> <td colspan="7">12,0 18,0 24,0 30,0 36,0 42,0</td>	Jib Length m	12,0	12,0 18,0 24,0 30,0 36,0 42,0						
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$	(ft)	(39.4)	(59.1)	(78.7)	(98.4)	(118.1)	(137.8)		
16     14     14     11<	Percent of		Maximum I	Permitted In S	Service Wind	Speed m/s			
100     (35)     (30)     (30)     (25)     (25)     (25)       90     16     16     16     16     14     14     14       90     16     16     16     16     14     14     14       90     16     16     16     16     16     14     14     14       90     16     16     16     16     16     16     16     16       80     16     16     16     16     16     16     16     16       80     (35)     (35)     (35)     (35)     (35)     (35)     (35)       Condition       Maximum Permitted Out of Service Wind Speeds m/s       (mph)	Capacity Chart			(m)	ph)				
(35)     (30)     (30)     (25)     (25)     (25)       90     16     16     16     16     14     14     14       90     (35)     (35)     (35)     (30)     (30)     (30)     (30)       80     16     16     16     16     16     16     16       80     (35)     (35)     (35)     (35)     (35)     (35)     (35)       Maximum Permitted Out of Service Wind Speeds m/s       (mph)	100	16	14	14	11	11	11		
90     (35)     (35)     (35)     (30)     (30)     (30)       80     16     16     16     16     16     16     16       80     16     16     16     16     16     16     16       Condition     Maximum Permitted Out of Service Wind Speeds m/s (mph)     (mph)     22	100	(35)	(30)	(30)	(25)	(25)	(25)		
(35)     (35)     (35)     (30) <th< td=""><td>90</td><td>16</td><td>16</td><td>16</td><td>14</td><td>14</td><td>14</td></th<>	90	16	16	16	14	14	14		
80     (35)     (	30	(35)	(35)	(35)	(30)	(30)	(30)		
ConditionMaximum Permitted Out of Service Wind Speeds m/s (mph)(35)(35)(35)(35)Parking Position222222222222	80	16	16	16	16	16			
Condition     (mph)       Parking Position     22     22     22     22     22     22	00	(35)	(35)	(35)	(35)	(35)	(35)		
(mph) Parking Position 22 22 22 22 22 22 22	Condition	Ν	Maximum Permitted Out of Service Wind Speeds m/s						
Darking Desition	Condition	(mph)							
(50) $(50)$ $(50)$ $(50)$ $(50)$ $(50)$	Darking Desition	22	22	22	22	22	22		
	Farking Position	(50)	(50)	(50)	(50)	(50)	(50)		
Ground Position When maximum Parking Position wind speed is exceeded	Ground Position	W	When maximum Parking Position wind speed is exceeded						

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#### Table 8

Boom Length m		74,0 (242.8)						
(ft)			(242	,				
Jib Length m	12,0	12,0 18,0 24,0 30,0 36,0						
(ft)	(39.4)	(59.1)	(78.7)	(98.4)	(118.1)	(137.8)		
Percent of		Maximum	Permitted In S	Service Wind	Speed m/s			
Capacity Chart			(mj	oh)				
100	14	14 14 14 11 11						
100	(30)	(30)	(30)	(25)	(25)	(25)		
90	16	16	16	14	14	14		
90	(35)	(35)	(35)	(30)	(30)	(30)		
80	16	16	16	16	16	16		
00	(35)	(35)	(35)	(35)	(35)	(35)		
Condition	Maximum Permitted Out of Service Wind Speed m/s							
Condition	(mph)							
Darking Desition	22 22 22 22 22 22 22							
Parking Position	(50)	(50)	(50)	(50)	(50)	(50)		
Ground Position	W	hen maximur	n Parking Pos	ition wind spe	ed is exceede	ed		

Boom Length m (ft)	80,0 (262.5)						
Jib Length m	12,0 18,0 24,0 30,0 36,0 42,0						
(ft)	(39.4)	(59.1)	(78.7)	(98.4)	(118.1)	(137.8)	
Percent of		Maximum I	Permitted In S	Service Wind	Speed m/s		
Capacity Chart			(mj	oh)			
100	14 (30)	14 (30)	14 (30)	11 (25)	11 (25)	11 (25)	
90	16 (35)	16 (35)	14 (30)	14 (30)	14 (30)	14 (30)	
80	16     16<						
Condition	Maximum Permitted Out of Service Wind Speed m/s						
Condition	(mph)						
Parking Position	22 (50)	22 (50)	22 (50)	22 (50)	22 (50)	22 (50)	
Ground Position	W	hen maximur	n Parking Pos	ition wind spe	ed is exceede	ed	





**MLC650** 

Jib No. 148 on Boom No. B10:680

Boom Length m	86,0								
(ft)		(282.2)							
Jib Length m	12,0	12,0 18,0 24,0 30,0 36,0 42,0							
(ft)	(39.4)	(59.1)	(78.7)	(98.4)	(118.1)	(137.8)			
Percent of		Maximum Permitted In Service Wind Speed m/s							
Capacity Chart			(mj	ph)					
100	14	14	14	11	11	11			
100	(30)	(30) (30) (30) (25) (25) (25)							
90	16	16	14	14	14	•14			
30	(35)	(35)	(30)	(30)	(30)	(30)			
80	16	16	16	16	16	16			
00	(35)	(35)	(35)	(35)	(35)	(35)			
Condition	Maximum Permitted Out of Service Wind Speed m/s								
Contantion	(mph)								
Parking Position	22	22	22	22	22	22			
i arking FUSILIUI	(50)	(50)	(50)	(50)	(50)	(50)			
Ground Position	W	hen maximur	n Parking Pos	ition wind spe	ed is exceede	ed			

## Table 11

Boom Length m (ft)		92,0 (301.8)							
Jib Length m (ft)	12,0 (39.4)								
Percent of Capacity Chart		Maximum Permitted In Service Wind Speed m/s (mph)							
100	14 (30)	14 (30)	14 (30)	11 (25)	11 (25)	11 (25)			
90	16 (35)	16 (35)	14 (30)	14 (30)	14 (30)	14 (30)			
80	16 (35)	16 (35)	16 (35)	16 (35)	16 (35)	14 (30)			
70	16 (35)	16 (35)	16 (35)	16 (35)	16 (35)	16 (35)			
Condition	Maximum Permitted Out of Service Wind Speed m/s (mph)								
Parking Position	22 (50)	22 (50)	22 (50)	22 (50)	22 (50)	22 (50)			
Ground Position	V	/hen maximur	n Parking Pos	ition wind spe	ed is exceede	ed			