

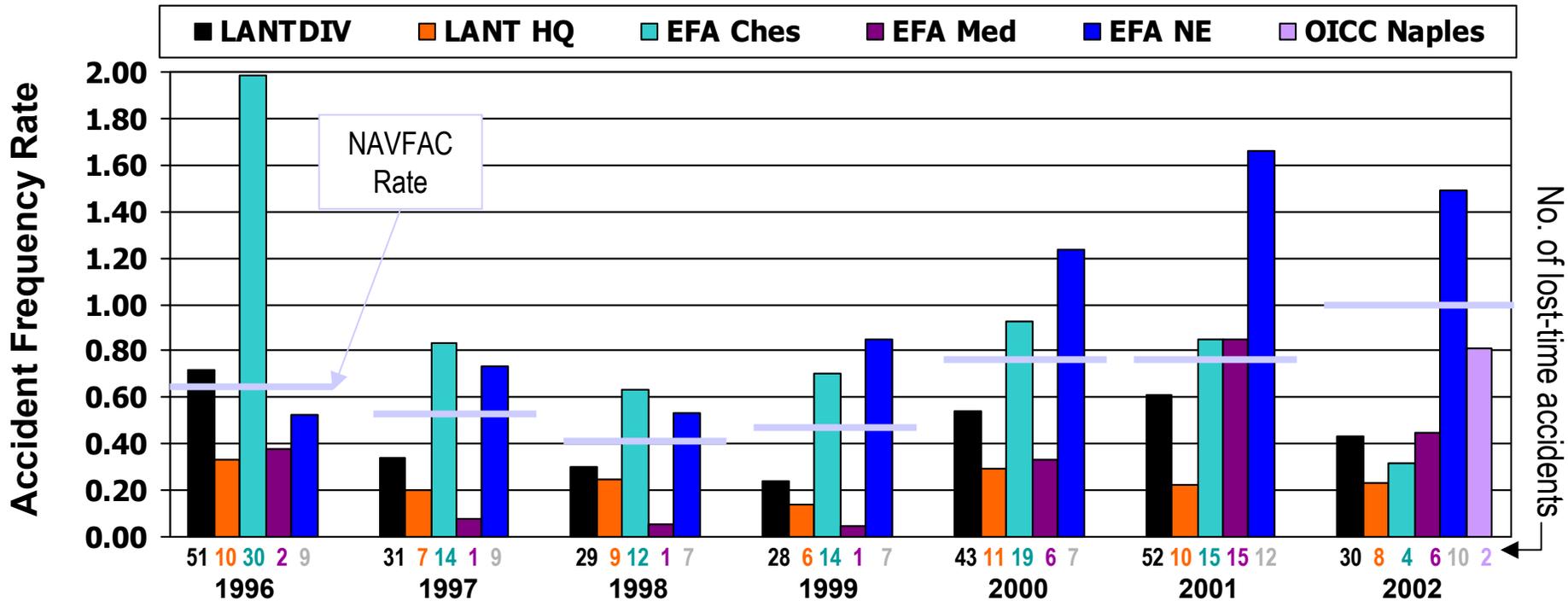
# Atlantic Division

## *Construction Safety*



# Contractor Safety

Performance Indicator based on Contractor Man Hours and Total Accidents



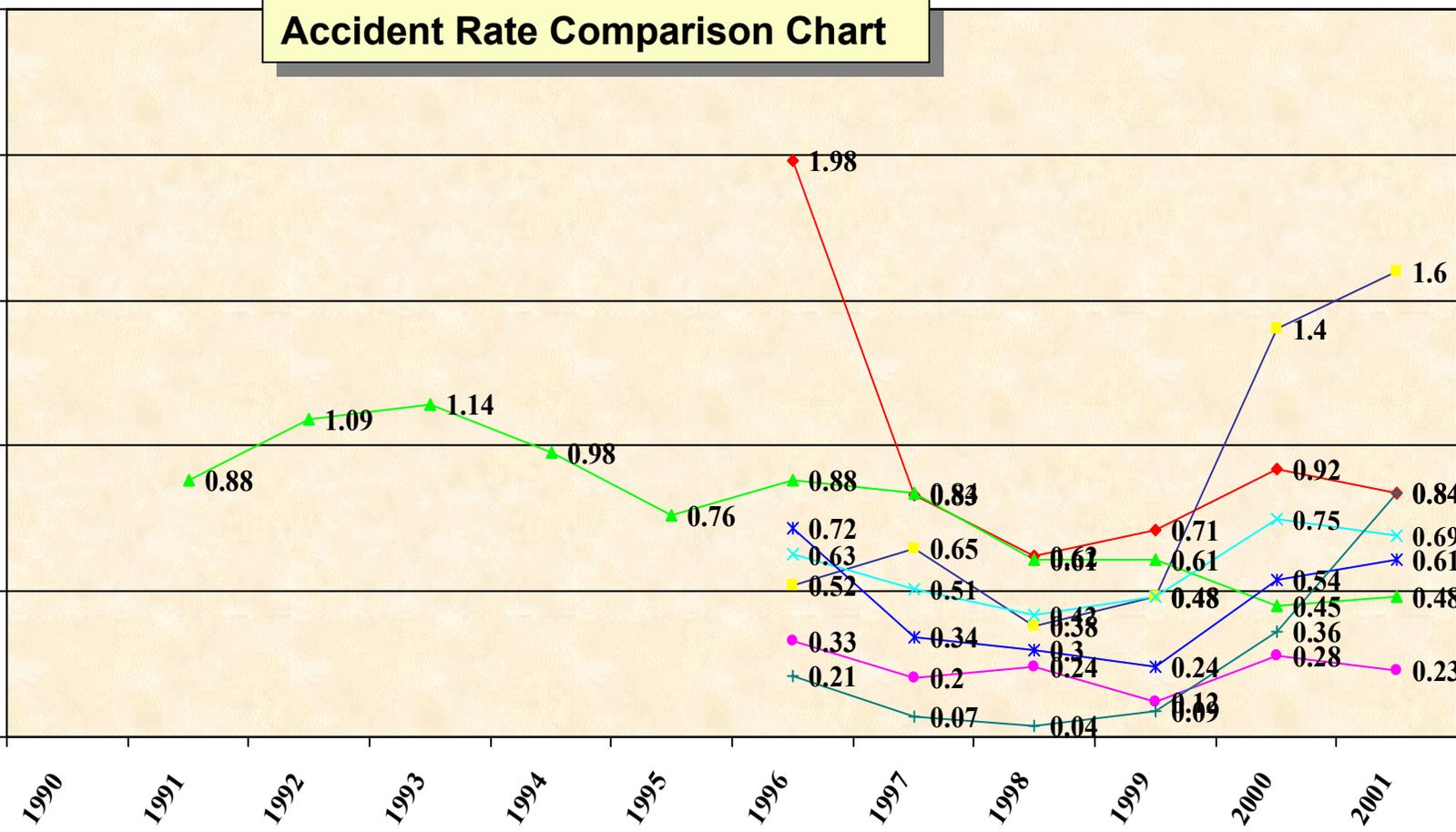
Accident Frequency Rate is an industry developed safety performance indicator (Lost Time Accidents/Total Man Hours) x 200,000  
 Example: HQLANT Rate for FY 2001 MIDYEAR = (4 lost-time accidents/4,276,818 man-hours x 200,000 = 0.18)

Man Hours	1996	1997	1998	1999	2000	2001	2002 3rd Qtr
HQ (Lant)	6,080,535	6,916,597	7,307,694	8,629,715	7,578,866	8,819,400	6,939,896
EFANE	3,023,393	3,343,805	3,778,837	3,990,159	4,103,208	3,539,485	2,505,460
EFA Ches	1,052,766	2,664,304	3,623,893	4,292,205	3,580,944	3,536,984	2,688,727
EFA Med	3,405,793	2,446,522	2,630,500	1,647,366	1,134,690	1,444,980	1,344,794
OICC Naples							495,360

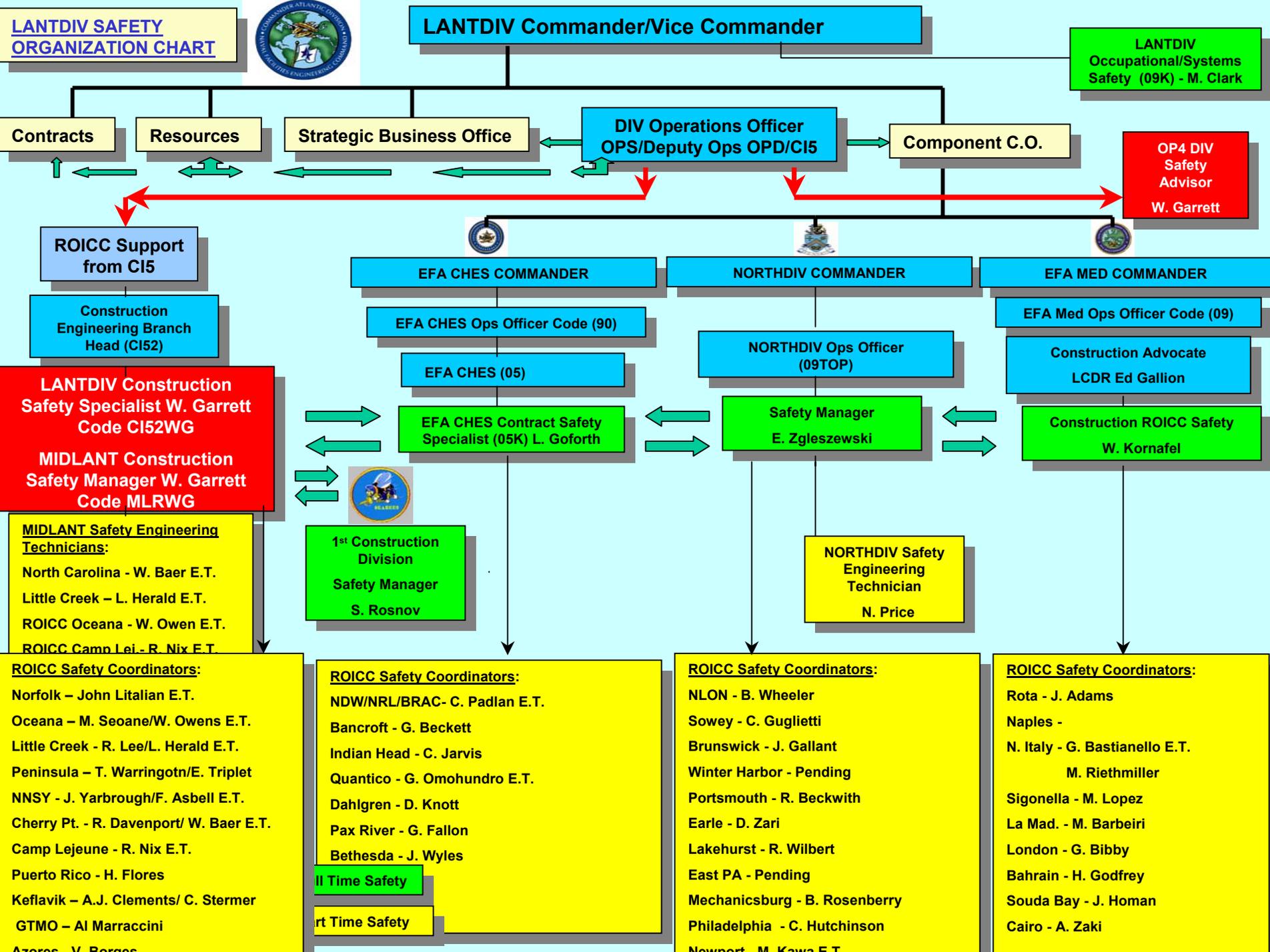
## Performance Metrics

2.5  
2  
1.5  
1  
0.5  
0

**Accident Rate Comparison Chart**



	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>EFA CHES</b>							1.98	0.83	0.62	0.71	0.92	0.84
<b>EFA NE</b>							0.52	0.65	0.38	0.48	1.4	1.6
<b>USACE Avg.</b>		0.88	1.09	1.14	0.98	0.76	0.88	0.84	0.61	0.61	0.45	0.48
<b>NAVFAC</b>							0.63	0.51	0.42	0.48	0.75	0.69
<b>LANTDIV</b>							0.72	0.34	0.3	0.24	0.54	0.61
<b>HQLANT</b>							0.33	0.2	0.24	0.12	0.28	0.23
<b>EFA MED</b>							0.21	0.07	0.04	0.09	0.36	0.84



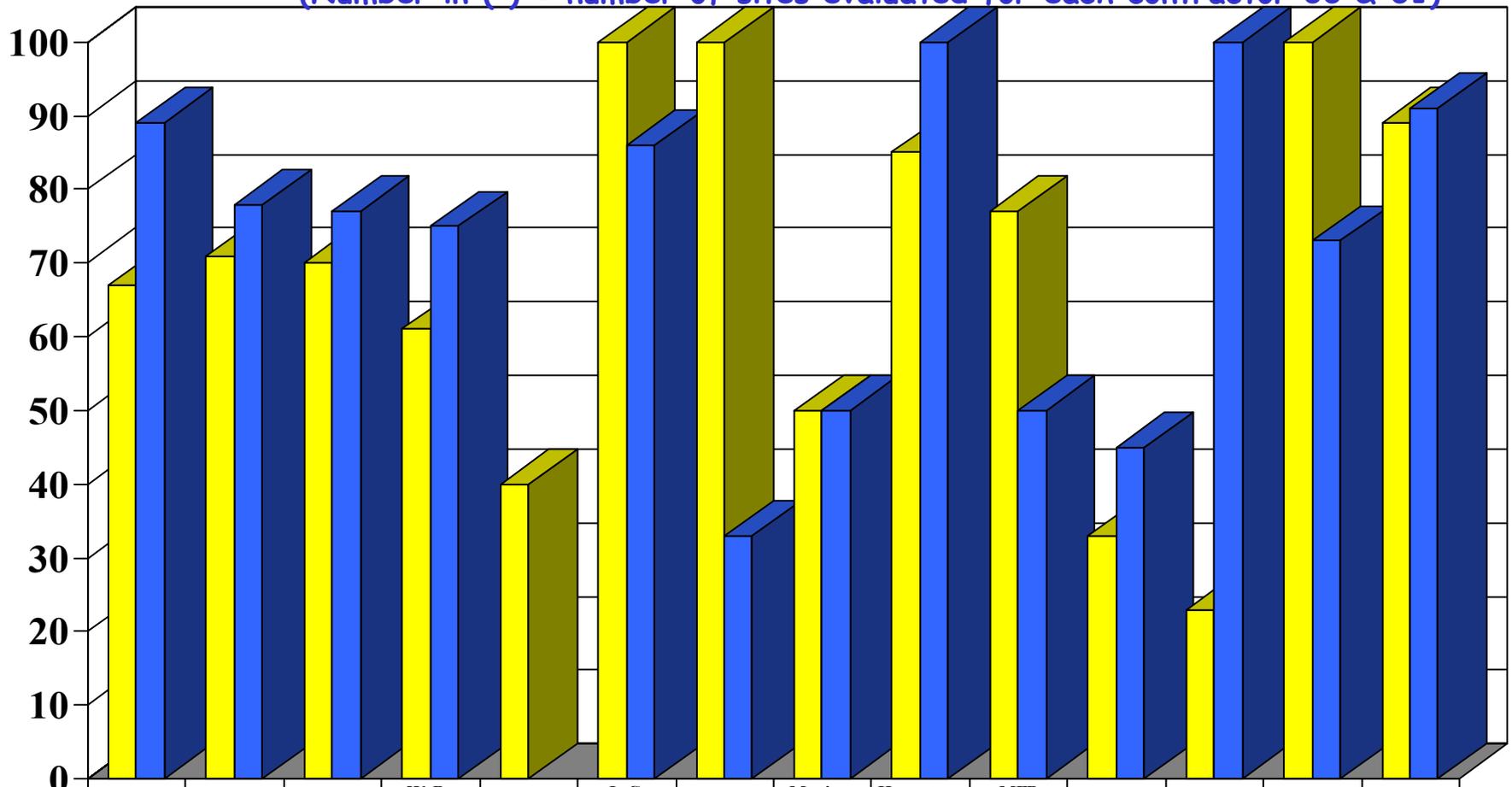
**Atlantic Division, Naval  
Facilities Engineering  
Command  
Contractor Work Site Safety  
Assessment Process**





# HQ LANT Contractor Average "OVERALL" Site Rating Comparison Chart

(Number in ( ) = number of sites evaluated for each contractor 00 & 01)



	Virtexco (3)(4)	CBC Ent (4)(6)	Tidewater CC (3)(3)	W.B. Meredith (3)(2)	TA Sheets (1)	J.C. Driskill (1)(1)	Harkins (1)(1)	Marine Contract (1)(1)	Hampton Roads (2)(1)	MEB Builders (3)(1)	Hunt (1)(2)	Snap (3)(1)	Atlantico (1)(2)	C.L. Price (6)(4)
FY 00	67	71	70	61	40	100	100	50	85	77	33	23	100	89
FY 01	89	78	77	75		86	33	50	100	50	45	100	73	91



**Name:**

**Passw  
ord:**

If you do not have a FAIR account, [click here to apply.](#)

[Forgot your account information?](#)

- Update/View Activity Data
- Summary Report
- View EFD/EFA Data
- Download Summary Data
- Insert Report
- Update/View Report
- Check Pending Reports
- Summary Reports
- Download Summary Data

## FAIR

Online

FAIR - Home

The Facility Accident and Incident Reporting (FAIR) Database is maintained by the Naval Facilities Safety and Health Office and data is collected from Naval Facilities Safety and Health Reporting Activities. The function of FAIR is to report, track, and analyze facility related accidents resulting from an injury or death to contractor personnel, and/or any property damage, as well as report on a quarterly basis contractor man-hours and lost time accidents. This database allows contractor accident/incident man-hour data to be input by any NAVFAC activity. High-level reporting thresholds of the Navy Safety Center do not currently capture the type of contractor mishap data needed for program decisions within NAVFAC.

To retrieve a blank FAIR report, please click on the following link: [Blank FAIR Report](#)

To begin your report, please select one of the options at the top of the page (i.e.: Contractor Mishap). For your convenience, we have added a *Help* site to assist you with any question you may have while using FAIR. To print a copy of the user manual please click on the following link: [User Manual](#).

Send comments and questions to: [webmaster@navfacssafety](mailto:webmaster@navfacssafety). We encourage your feedback.



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1322 Patterson Avenue SE Suite 1000  
Washington DC 20374-5065

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**FAIR**

Online

**FAIR - Home**

Field Office:  
 FY: QRTR:

\*Contract Number:  
 \*Prime Contractor:  
 Sub Contractor:  
 \*Industrial Group:  
 Industrial Type:

Contractor Workhours:

Contractor Lost Time Cases:

View Option:

FY	TOTAL CONTRACTOR WORKHOURS					Annual Total	TOTAL CONTRACTOR LOST TIME CASES					Annual Total	INJURY ILLNESS RATE				Annual Total
	Q1	Q2	Q3	Q4	Q1		Q2	Q3	Q4	Q1	Q2		Q3	Q4			
2002	0	0	0	0	0	0	0	0	0	0	0	0.00	0.00	0.00	0.00	0.00	
2001	428,235	349,790	521,329	484,531	1,783,885	0	1	1	1	3	0.00	.57	.38	.41	.34		
2000	380,199	309,000	423,597	375,000	1,487,796	0	0	3	1	4	0.00	0.00	1.42	.53	.54		
1999	298,526	455,895	344,827	361,445	1,460,693	0	0	0	1	1	0.00	0.00	0.00	.55	.14		
1998	211,139	262,949	309,613	280,755	1,064,456	0	1	0	1	2	0.00	.76	0.00	.71	.38		
1997	319,147	334,610	318,160	315,977	1,287,894	0	0	1	2	3	0.00	0.00	.63	1.27	.47		
CONTRACT NUMBERS		TOTAL CONTRACTOR WORKHOURS			Total To Date	TOTAL CONTRACTOR LOST TIME CASES			Total To Date	INJURY ILLNESS RATE							
		2002	2001	2000		2002	2001	2000		2002	2001	2000					

	MANHOURS							RECORDABLE LOST TIME CASE					
SMALL FIELD OFFICE (Less than 250,000 Manhours)	1ST	2ND	3RD	4TH	Annual Total	\$ WIP (M)		1ST	2ND	3RD	4TH	Annual Total	IR*
	16,636	15,141	31,088	186,007	248,872	17.4		0	0	0	2	2	1.6
<a href="#">ROICC BREMERTON</a>	18,253	26,378	27,421	43,317	115,369	0		0	0	0	1	1	1.7
<a href="#">ROICC EVERETT</a>	18,200	10,440	18,000	54,363	101,003	0		1	0	0	0	1	2
<a href="#">ROICC FT. WORTH, TX</a>	16,450	39,814	20,822	17,054	94,140	36.1		1	0	0	0	1	2.1
<a href="#">ROICC PANAMA CITY, FL.</a>	35,000	35,000	15,000	10,000	95,000	9.3		1	0	0	0	1	2.1
<a href="#">EFD SOUTH</a>	24,902	28,867	34,675	0	88,444	113		0	0	1	0	1	2.3
<a href="#">ROICC INDIAN HEAD</a>	33,300	38,170	49,410	34,210	155,090	26.9		0	1	1	0	2	2.6
<a href="#">ROICC ATLANTA, GA</a>	10,948	15,782	18,576	9,282	54,588	9.4		1	0	0	0	1	3.7
	MANHOURS							RECORDABLE LOST TIME CASE					
MID-SIZE FIELD OFFICE (250,000 to 550,000 Manhours)	1ST	2ND	3RD	4TH	Annual Total	\$ WIP (M)		1ST	2ND	3RD	4TH	Annual Total	IR*
<a href="#">ROICC TRAVIS</a>	130,362	95,927	83,496	53,554	363,339	0		0	1	0	1	2	1.1
<a href="#">ROICC QUANTICO</a>	54,832	70,574	147,268	189,118	461,792	53.2		1	0	1	1	3	1.3
<a href="#">ROICC NEWPORT, RI</a>	52,444	36,026	93,442	87,597	269,509	50.6		1	0	1	0	2	1.5
<a href="#">ROICC VENTURA COUNTY NAVAL COMPLEX</a>	72,548	89,790	49,977	44,248	256,563	0		0	2	0	0	2	1.6
<a href="#">ROICC NLON</a>	62,534	56,238	85,302	98,686	302,760	48.5		1	0	0	4	5	3.3
	MANHOURS							RECORDABLE LOST TIME CASE					
LARGE FIELD OFFICE (Greater than 550,000 Manhours)	1ST	2ND	3RD	4TH	Annual Total	\$ WIP (M)		1ST	2ND	3RD	4TH	Annual Total	IR*
<a href="#">ROICC NORTHERN ITALY</a>	252,750	256,509	284,006	430,622	1,223,887	6.5		1	3	4	2	10	1.6
<a href="#">ROICC PEARL HARBOR</a>	272,265	337,571	302,936	388,296	1,301,068	0		2	2	4	9	17	2.6
<a href="#">ROICC KAHO'OLAW</a>	286,943	280,263	284,918	261,677	1,113,801	0		7	7	6	8	28	5

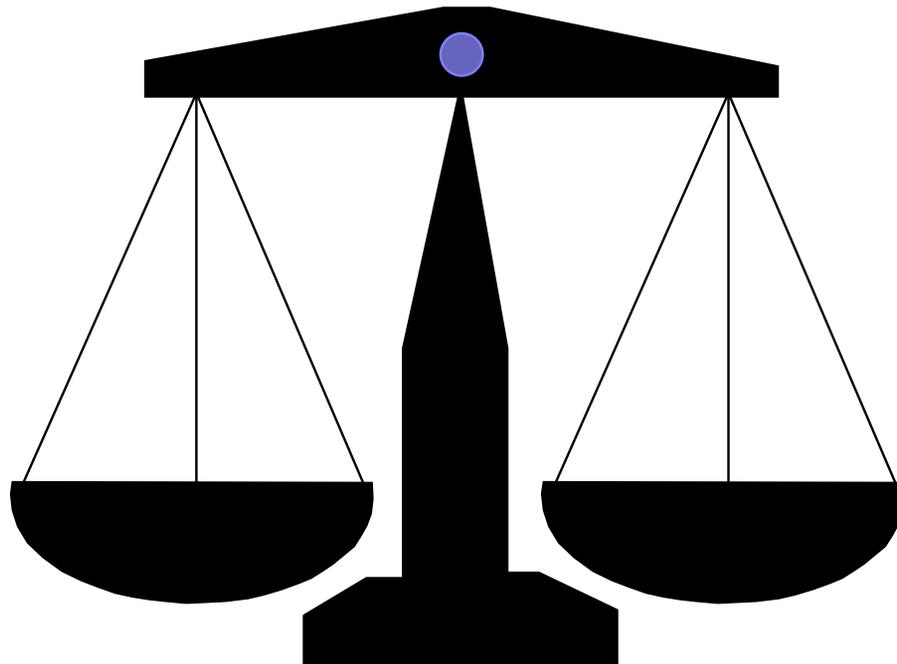
THE CONTRACTOR SITE  
SUPERINTENDENT IS  
RESPONSIBLE FOR  
ENFORCING SAFETY ON  
OUR PROJECTS

HOLD THE SUPERINTENDENT  
ACCOUNTABLE FOR THE  
SAFETY CONTRACT  
REQUIREMENTS FOUND IN  
USACE EM 385-1-1



# Look at Safety First Culture Development

# SOURCE SELECTION PROCESS AND SAFETY MANAGEMENT RATING FACTOR



# SELF INITIATED STAND DOWNS

SAFETY ACTION ITEMS  
INVOLVING IMMINENT  
DANGER

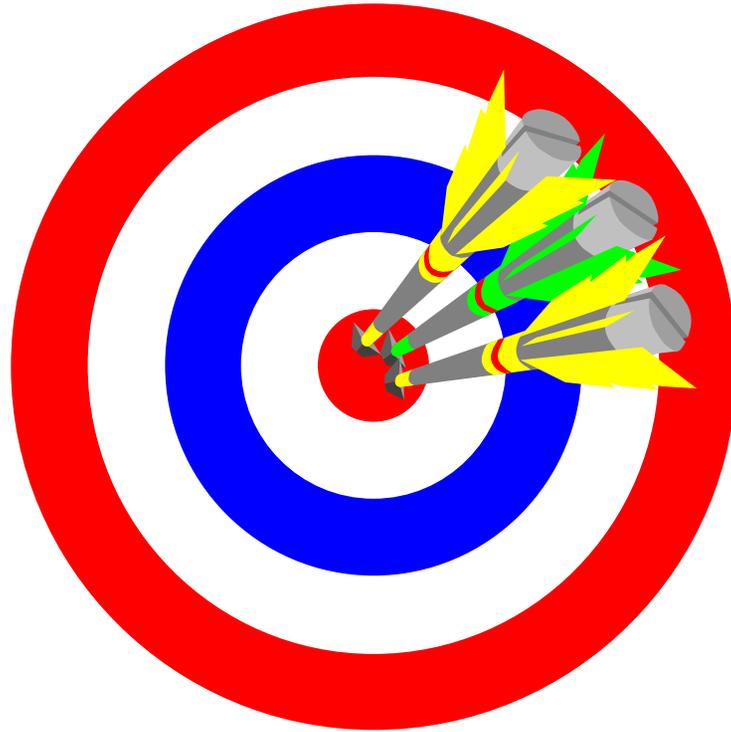
STAR PROGRAM

ACCIDENT REPORTING

EFDLANT “CONTRACTOR  
SIGNIFICANT INCIDENT”

EMAIL ADDRESS

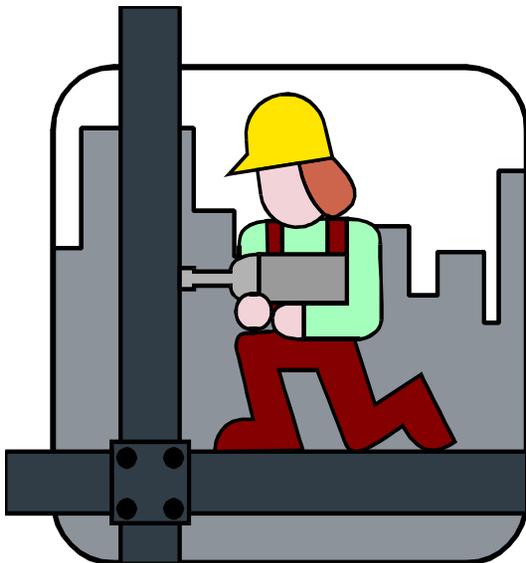
# Construction Safety



“FOCUS AREAS”

# FALL PROTECTION

FALLS FIRST











10 9 2002



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11 9 2002



Rufco-Wrap

17-6-04

11 9 2002



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# ELECTRICAL



**Isolate  
Qualified  
PPE**

**Lock Out Tag Out (LOTO)  
Clearances**





# CONFINED SPACES

**Accepted Plan**

**Ventilate**

**Training certificates**

**Monitor/Evaluate**

**Rescue systems**



# EQUIPMENT



Cranes

Bobcats (Small Stuff)

Forklifts

Other







10 9 2002

**ATLANTIC DIVISION, NAVAL  
FACILITIES  
ENGINEERING COMMAND**



**HQLANT CONTRACTOR CRANE STAND  
DOWN AWARENESS TRAINING**

**2002**

**Dry-dock floor is  
60' below with  
Workers**







# CRANE WAS A TOTAL LOSS



# Craney Island Crane Accident

## Why it happened.

- The cause of the accident was crane over load. The contractor did not follow the EM 385, no load indicator, improper method used for demolition of scrap metal, and unstable ground. At the time of the accident the scrap metal was estimated at weighing 7,800 lbs. The clamshell bucket and misc. rigging weighed 5,000 lbs. The configuration at the time of the accident, the crane rated capacity was 5,200 lbs.
- The operator said while swinging the load to the right, he felt the load become unstable. He tried to release the brake a number of times but could not.



# Spreader Bar failed while lifting Sheet Piling section off of barge.



View from left side

# Crane Accident



Typical pile cap rotation prior to placement (June 2001)

# CONTRACTING OFFICER RESPONSIBILITY

(P-307 1.7.2.1)

- 1. Provide oversight of all contractor crane operations & compliance with ASME, Contract, & Local Regs.**
- 2. Insure Contractor Accident Investigation & reporting to NCC**
- 3. Follow up corrective actions in Event of Crane Mishap**

# **EXAMPLES OF MANDATORY OPERATIONAL SAFETY DEVICES**

**16.D.01- 16.D.05 & Specification section 01525)**

**ANTI-TWO BLOCK DEVICE**

**SHUT DOWN WINCH/ALARM**

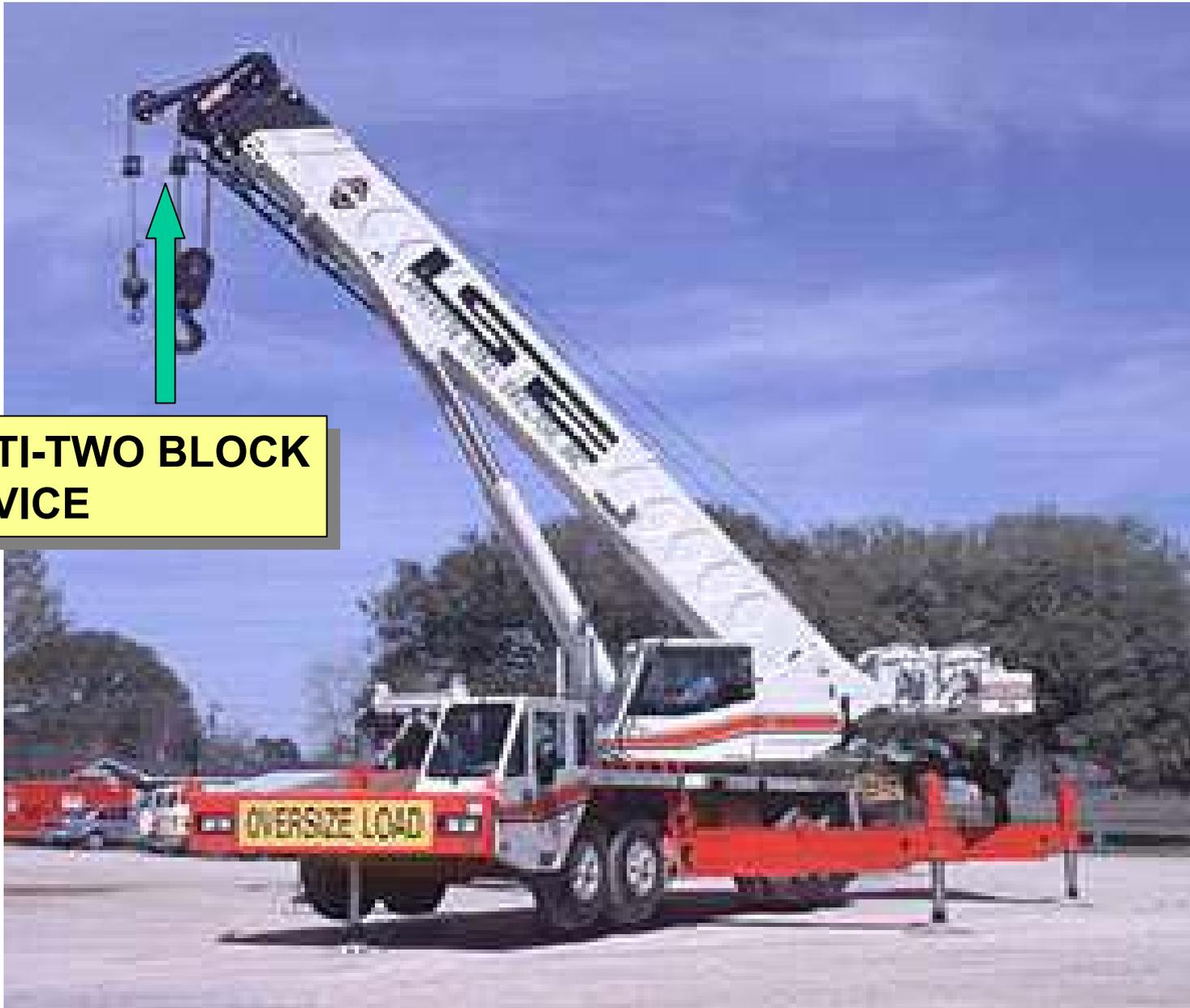
**RADIUS INDICATORS**

**BOOM ANGLE INDICATORS**

**BOOM LENGTH INDICATORS**

**LOAD MOMENT INDICATORS (LMI)**

**MEANS OF DETERMINING LEVELNESS**



**ANTI-TWO BLOCK  
DEVICE**

**OVERSIZE LOAD**

# BOOM ANGLE INDICATORS

MOST BOOM ANGLE INDICATORS ARE SIMPLE, WEIGHTED MECHANICAL DEVICES



# ***CONTRACTOR* CRANE INSPECTION REQUIREMENTS**

- 1. COMPLETE 25 POINT PERIODIC INSPECTION  
(When Crane **First Arrives** at the Jobsite EM 385-1-1  
Appendix H)**
- 2. COMPLETE 14 POINT START-UP INSPECTION  
(Prior to **every shift** the crane is to be operated)**
- 3. COMPLETE CERTIFICATE OF COMPLIANCE  
(Post in the cab or the vehicle/crane)**
- 4. COMPLETE **AND/OR** PROVIDE DOCUMENTATION  
OF **OPERATIONAL** PERFORMANCE TESTING**
- 5. COMPLETE **AND/OR** PROVIDE DOCUMENTATION  
OF **LOAD** PERFORMANCE TESTING**

# CRANE QA RESPONSIBILITIES

1. **Verify** crane operators Qualifications
  2. **Verify** administrative items with crane
  3. **Verify** mandatory equipment for crane
  4. **Verify** contractor 25 point Periodic Inspection
  5. **Verify** contractor 14 point Start-up Inspection
  6. **Verify** completion of Certificate of Compliance and posted in the cab.
  7. **ROICC Complete** QA Spot-Check
  8. **Observe Operational performance Test \*\***
  9. **Observe Operational Load Performance Test\*\***
- \*\* If these items apply**

# **CRANE ADMINISTRATIVE REQUIREMENTS**

**ITEMS REQUIRED TO BE WITH EVERY CRANE**

**(16 C.02 a, b, c)**

**1. MANUFACTURER'S OPERATING MANUAL**

**2. LOAD RATING CHART**

**Make, Model, Serial # & Year of Crane**

**Load Ratings for **all** configurations including crane ancillary equipment.**

**Load Line Reeving Recommendations**

**Operating limits for windy or cold conditions**

# CRITICAL LIFT

EM 385-1-1 p. 293

## Critical Lift Plan Required when:

- a. Lifts are to be made when the load weight is 75% of the rated capacity of the crane (**at the configuration**).
- b. Lifts that require the load to be lifted, swung, or placed out of the operators view (blind lift).
- c. Lifts made with more than one crane.
- d. Lifts involving non-routine or “**technically difficult rigging arrangement**”.
- e. Hoisting personnel with a crane or derrick.

# **TECHNICALLY DIFFICULT RIGGING DEFINITION**

- 1. The location of the center of gravity is questionable**
- 2. The structural integrity of the load is questionable (can't support its own weight)**
- 3. The attachment points on the load are not clearly evident (i.e. the load is not designed with attachment points for lifting and the shape of the load does not readily lend itself to common sling configurations such as chocker or basket hitches)**
- 4. A satisfactory rigging configuration is difficult to determine (I.e. the shape or complexity of the load to be lifted prevents the use of standard rigging configuration)**
- 5. Forces generated in & by the rigging configuration are difficult to determine (i.e. additional forces due to multiple lift angles, comprehensive forces on the load)**
- 6. A difficult rigging configuration has to be reassembled for a particular lift and a possibility exists for it to be reassembled incorrectly or for required pieces to be left out**
- 7. A lift involving a submerged load.**
- 8. Crane lifts without the use of outriggers using on rubber load charts**
- 9. Lifts involving the use of more than one hoist**

**Barge  
Mounted  
Floating  
Crane**



# **SPECIAL REQUIREMENTS FOR BARGE MOUNTED CRANES**

## **LOAD CHART AND CRANE CERT**

**NOT VALID ON BARGE** (Shore Cert not valid)

- 1. Barge stability calculations are to be done, and reduced capacity load charts provided based on list and trim. (not to exceed 3 degrees)**
- 2. Crane to be load tested to verify list & trim test load 110% (+5%-0%) of the reduced load capacity chart and **re-certified**.**
- 3. (1) New load chart and (2) list trim indicators to be in the crane operators cab.**

# LOAD RATING CHART

IN POUNDS ON OUTRIGGERS

Load Radius  
 Boom Length  
 Lift Capacity  
 Rear/side

Deductions:

Rigging

Load Block

Stowed items

OUTRIGGERS FULLY EXTENDED - OVER REAR

Radius in Feet	Main Boom Length in Feet (Power Pinned Fly Retracted)							Power Pin. Fly Ext. & 141 ft. See Warning Note 17			
	46	58	70	82	94	106	118		130	141	
10	300,000 (74.5)										
12	280,000 (72)	143,500 (76)	142,000 (79)								
15	235,000 (67.5)	143,500 (72.5)	141,500 (76.5)	130,000 (78.5)							
20	173,500 (60.5)	143,500 (67.5)	123,500 (72)	112,000 (75)	102,000 (77.5)	90,300 (79.5)					
25	135,500 (52)	131,500 (61.5)	110,500 (67.5)	98,650 (71)	89,250 (74)	78,550 (76.5)	73,700 (78.5)	69,300 (80)			
30	106,000 (43)	106,000 (55.5)	98,000 (63)	88,350 (67.5)	78,750 (71)	69,250 (73.5)	65,100 (76)	61,000 (77.5)	60,000 (79.5)		
35	84,700 (30.5)	84,700 (49)	84,700 (58)	80,150 (63.5)	69,000 (67.5)	60,750 (70.5)	57,150 (73)	54,000 (75)	52,150 (77.5)		
40		70,500 (41)	70,500 (52.5)	70,500 (59.5)	61,300 (64)	54,000 (67.5)	50,600 (70.5)	48,300 (73)	45,850 (75)	38,000 (79)	
45	See Warning Note 16	58,850 (32)	58,850 (47)	58,850 (55)	55,000 (60.5)	48,500 (64.5)	45,200 (68)	43,050 (71)	40,400 (73)	35,750 (77)	
50		49,600 (17.5)	49,600 (40.5)	49,600 (50.5)	48,750 (57)	43,050 (61.5)	40,700 (65)	38,250 (68.5)	35,750 (71)	32,100 (75.5)	
60			36,200 (22.5)	36,200 (39.5)	36,200 (48.5)	34,300 (55)	33,600 (59.5)	30,750 (63.5)	28,500 (66.5)	26,350 (72)	
70				26,050 (25)	26,050 (39.5)	26,050 (47.5)	26,050 (53)	24,750 (58)	23,100 (61.5)	22,000 (68.5)	
80					18,850 (27)	18,850 (39)	18,850 (46.5)	18,850 (52.5)	18,700 (56.5)	18,500 (64.5)	
90						13,500 (28)	13,500 (38.5)	13,500 (46.5)	13,500 (51.5)	15,250 (60.5)	
100							9,390 (29)	9,390 (39)	9,390 (45.5)	12,600 (56.5)	
110							6,080 (12.5)	6,080 (30.5)	6,080 (39)	10,100 (52)	
120								3,390 (17.5)	3,390 (31)	7,530 (47.5)	
130									1,150 (19.5)	5,390 (42.5)	
140										3,610 (36.5)	
150										2,100 (30)	
Minimum boom angle (deg.) for indicated length (no load)										10	19
Maximum boom length (ft.) at 0 deg. boom angle (no load)										140	167

NOTE: Boom angles are in degrees.

# OVERHEAD POWER LINE CLEARANCE REQUIREMENTS

**SAFE CLEARANCE MINIMUM OF 10 FEET  
RADIUS UP TO 50,000 VOLTS**

**PLUS .4" FOR EVERY 1000 VOLTS OVER  
50,000 VOLTS**

**Eg: 125 KV Requires  $(.4 \times 75)=30'' + 10'=12'6''$**

**See COE table 11-3 page 177**



18 6 2002



18 6 2002

# Activity Hazard Analysis

**AN AHA SHALL BE DEVELOPED AND IMPLEMENTED FOR CRANE SET-UP, AND SET-DOWN PROCEDURES (MOBILIZATION, ASSEMBLY OR ERECTION, DISMANTLING & DEMOBILIZATION) (16.C-08)**



## REVIEW:

1. **Preparatory** Inspection meeting/AHA review
  - a. Contractor required to notify you when crane is to arrive
  - b. Review Spec. 01525/submittals/AHA/Critical Lift Plan if applicable
3. **Initial** –
  - a. Contractor to complete Periodic Inspection (appendix H)
  - b. Contractor to complete daily startup inspection (appendix H)
  - c. ROICC to complete QA spot-check
4. **Follow up** -



18 6 2002



18 6 2002



18 6 2002



18 6 2002

ACTIVITY HAZARD ANALYSIS PLAN

Page 1 of 1

Location: Building # 207 Army - 4150 Collins	Contact No. 462220-000 B-46222-000	Project No. Repair work done Building # 207
Description: 4150S and 17424	Work Category: Electrical Contractors	Supervisor: W.D. Smith H.C. Mechanical Inc.

General description of scope of work of this document or other significant activity:  
Install leveling device on to structural steel plate form

Date of Document Inspection: 2/18/02	Estimated Start Date of Activity: 2/18/02
--------------------------------------	---

Threats Activity	Potential Safety Hazard	Procedures to Control Hazards
15601/0525	Crane - Personal injury (operator injury)	All cranes will have a copy of the operating manual, and safety book and operating book. The operator shall be trained and certified. The operator shall not engage in any activity which will divert his attention while operating the crane. The operator shall respond to signals from the person who is directing the lift (see operational signal poster).
	Setting up the crane (personal injury)	The crane is to be level and when necessary stabilized. The level shall be well secured and balanced. Check posts for obstructions and adequate clearance is maintained from electrical sources.
	Safety in General (PPE)	All personnel will wear PPE and follow the requirements of 29 CFR 1910.132.

Equipment To Be Used: Model 2500 JBT 25 ton Crane	Inspection Inspection Required: Check up inspection Pre-use inspection Post-use crane inspection	Special Training Requirements for Workers: operator shall be trained and certified to operate this model crane. Only trained personnel will be allowed to use equipment.
---	---	---

Reviewed & Approved:	
From Contractor Name: <u>Centennial Contractors</u> Supervisor: <u>COC Steve Duvall</u> <u>Steve Duvall</u> (Signature)	Subcontractor(s) Company Name: <u>H.C. Mechanical Inc</u> Foreman: <u>Don Egan</u> <u>Don Egan</u> Foreman: <u>W.D. Smith - HUMAN HEAD</u> <u>W.D. Smith</u> Page 1 of 1

18 6 2002

DATE 6/18/02

PROJECT TITLE Repair HVAC AHU# 513

CONTRACT NO. N02470-01-D-1011

PRIME CONTRACTOR Centennial Contractors

SUB CONTRACTOR HLL Mechanical Inc.

SPEC SECTION 01525/15601

A. PERSONNEL PRESENT (including all employees involved with the actual work)

Signature

STEVE DUNNAN	CCO	<i>Steve Dunnan</i>
Jon Anderson	CCO	
Dave Ziemenship	HIL	<i>Don [unclear]</i>
WILLIAM HEAD II	W.O. GRUBB	<i>William Head II</i>
RICK BARDORF	CCO	<i>R. Bardorf</i>
JOHN TELLER	ROICC	<i>John Teller</i>
LT. MASSIE	ROICC	<i>Charles Massie</i>

18 6 2002







18 6 2002



29 2:45 PM



10 9 2002



10 9 2002



10 9 2002



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