

Notable Event Worksheet

(See [ES&H Manual Chapter 5200 Appendix T1 Event Investigation and Causal Analysis](#) for Instructions)

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For Word Doc

Title of Event			
Event Title:	Right Arm Injury During Equipment Move		
Date and Time of Occurrence:	Wed 8 th February 2012, 10:45	Notable Event Number:	ENG-12-0208
Event Location:	Building 36	Date Notable Event Report is Due*:	March 8, 2012

*The Notable Event Report is due to the ESH&Q Reporting Officer with 30 days of the Initial Fact Finding Meeting unless an extension is requested.

Categorization and Reporting
(To be completed by ESH&Q Reporting Officer within two hours – unless essential information is still pending)

ORPS Determination:	Date: 02/08/2012 & 02/15/2012	Time:	1426 and 1425 (See emails below)
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from You

subject **UPDATE: CAIRS/ORPS determination for ENG-12-0208- Right Bicep Tendon Rupture** 2/15/2012 2:25 PM

to Patty Hunt

cc Henry Robertson , Mary Logue , kimber@jlab.org

[reply](#) [reply all](#) [forward](#) [junk](#) [delete](#) other actions

Patty,

The employee who injured himself moving the klystron magnet reported today that he is scheduled for surgery to repair the tendon. Because of this, the event will be reported as an ORPS (surgery to repair a tendon is considered a "serious" injury in ORPS parlance) and in the Noncompliance Tracking System (for the same reason).

If you have any questions or concern, feel free to contact me.

Regards,

Tina

----- Original Message -----

Subject: CAIRS/ORPS determination for ENG-12-0208- Right Bicep Tendon Rupture
Date: Wed, 08 Feb 2012 14:26:29 -0500
From: Tina Johnson <cjohnson@jlab.org>
To: Steve Neilson <sneilson@jlab.org>, Henry Robertson <robertsn@jlab.org>, Ned Walker <nwalker@jlab.org>, Jennifer Williams <jennifer@jlab.org>, John Kelly <jkelly@jlab.org>, kujawa <kujawa@jlab.org>, Bert Manziak <manziak@jlab.org>, Dick Owen <rowen@jlab.org>, Tina Menefee <menefee@jlab.org>, Paul Collins <paulc@jlab.org>
CC: Mary Logue <logue@jlab.org>, Tina Johnson <cjohnson@jlab.org>

Steve,

Good Afternoon! This morning an employee was pushing a heavy magnet with another employee when he lifted part of the magnet and felt a pop in his right upper arm. The employee was sent off-site to Sentara Urgent Care for evaluation, and it was determined that he has a right bicep tendon rupture.

The doctor's recommendation is " No use of right arm until evaluated by an Orthopedist."

The following event is OSHA recordable

*See OSHA regulations below

How do you decide if the case involved restricted work?

Restricted work activity occurs when, as the result of a work-related injury or illness, an

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recommends keeping, an employee from doing the routine functions of his or her job or from working the full workday that the employee would have been scheduled to work before the injury or illness occurred.

Based on information obtained so far, we do not believe the event meets ORPS reportable criteria.

We will follow the Notable Event Process and we will complete the CAIRS entry within the 7 day time limit. Please call me with any questions or concerns.

Tina

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 Tina Johnson
 Reporting Officer/
 Administrative Assistant
 JSA/Jefferson Lab
 12050 Jefferson Ave
 Suite 602
 Newport News, VA 23606
 757-269-7611

10 CFR 851 Screen:	Date: 02/15/2012	Time: 1425
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Positive: 10 CFR 851.10 (a)(1): Provide a place of employment that is free from recognized hazards that are causing or have the potential to cause death or serious physical harm to workers.

Unless otherwise specified the following is to be completed by the **Lead Investigator**.

Step 1 Initial Fact-Finding Meeting			
Date:	2/9/2012	Time:	09:00
Location:		Building 36	
Required Attendees:		Optional Attendees:	√ if Present
Lead Investigator:		Associate Director:	
(Print Name): Andrew Kimber/Henry Robertson		(Print Name):	
ESH&Q Representative:		TJSO Observer:	√
(Print Name): Tina Johnson/Ned Walker		(Print Name): Patty Hunt	
Supervisor of involved persons(s):		Subject Matter Expert(s), Facility/Equipment Owner as applicable:	
(Print Name): Simon Wood		(Print Name):	
Involved or impacted person(s):		(Print Name):	

(Print Name):	(Print Name):
(Print Name):	(Print Name):
Witness(es):	(Print Name):
(Print Name): Bill Richard <i>(interviewed by DSO after incident)</i>	(Print Name):

Agenda <i>(Ensure the pace of the meeting allows time for accurate note taking.)</i>	√ if Complete
1. Introduction – Provide Event Title, Date and Time of Occurrence, and Location:	Yes
2. Attendance - Are Required Attendees present.	Yes
3. Purpose of Initial Fact-Finding meeting.	Yes
4. Event Reconstruction – Use information to complete Section 3. Summary of Event and/or Injuries below.	Yes
a. Personnel and organizations involved in the event.	Yes
b. Conditions and actions preceding the event.	Yes
c. Chronology (timeline) of the event; and	Yes
d. Immediate actions taken in response to the event.	Yes
5. Clarify information – Subject-Matter Expert (SME) confirms work conditions.	Yes
6. Stop Work or the Tag Out Required? If “Yes” – establish the restart criteria and inform the affected Management chain.	No
7. Compensatory Actions Required? If “Yes” determine responsibility and include confirmation documentation.	Yes
8. Records or documentation required to confirm, clarify, or complete information (i.e., work plans, work control documents, photos, etc).	Yes
9. Other Questions or Concerns: Ask attendees if there are any other questions, concerns, or information that they wish to provide.	Yes
10. Obtain TJSO Observer feedback on conduct of fact finding meeting and potential improvements.	Yes

Step 2 Investigation Team:		Date Convened: (Within 24 hours of Fact Finding Meeting.)	
Role	Name	Department/Group	Phone
Lead Investigator	Andrew Kimber	EESRFS	5145
DSO	Henry Robertson	EESSAF	7285
Safety Warden of Bldg. 36	Kevin Banks	EESDCP	7418/7772
ESH&Q representative	Ned Walker	ESHDIV	6638
Supervisor	Simon Wood	EESDCP	7081
TJSO Observer	Patty Hunt	TJSO	7039

Step 3 Summary of Event and / or Injuries, including Initial Fact Finding Meeting information: determine the chain of events and timeline. Use attachment as necessary.

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Lead investigator summary of events (from initial fact finding meeting)

Building 36 contains a multi use, enclosed work area used by both high power RF and DC Power groups. The area is used for testing components and systems as well as storage of incoming parts and power supplies. There is a high turnover of components, some large and bulky.

On the morning in question, a cabinet style power supply was due to be tested by the DC power group. The rear doors of the power supply were blocked by a number of wooden crates (approx. 2'x2'x3') mostly containing the 12GeV Klystron solenoids. Each solenoid weighs approx 300lbs. To gain access to the power supply, two employees tried to manhandle/slide a solenoid (on a small palette) out of the way. The injured worker reported that he reached down with his right hand, and when he tried to move the palette, he felt a 'pop' in his right bicep. The worker said that he had moved the same equipment without injury earlier that week.

1045: Event occurred

1100: Worker drove himself to medical services

1130: Worker was instructed to go to Sentara Urgent Care on J. Clyde Morris Blvd. He had an x-ray and was given a prescription.

1230: Worker had the prescription filled at the Rite Aid on J. Clyde Morris Blvd.

1330: Worker arrived back at JLab and proceeded back to building 36 to resume work.

1400: Worker was instructed to return to medical services for a follow up.

1445: Worker returned to building 36 and resumed restricted duties.

Summary of events from Injured Worker

"February 8, 2012

Subject: Chronology of Events Surrounding Workplace Injury

At approximately 11:00 am this morning, Wednesday, February 08, 2012, [A co-worker] and I were moving a klystron solenoid when I felt a pop in my right bicep muscle. We finished moving the solenoid into position and discussed my injury along with my supervisor. [They] told me to report to Occupational Medicine to get it checked out. The medical staff examined my arm and sent me to the Sentara Urgent Care facility on J. Clyde Morris Boulevard. The doctor examined my arm, took some x-rays and told me that I'd most likely torn a tendon and would need to be referred to an orthopedist. He wrapped an ace bandage around my bicep and I took the prescription he gave me to Rite Aid and ate lunch while it was being filled. I then returned to work. You [DSO] of course, directed me back Occupational Medicine were I discussed the issue with the staff who told me not to use my right arm until I see the orthopedist. This took from 11:00 am until 3:00 pm."

Statements made by Injured Worker

Worker admits to having moved similar oversized objects in the past.

Worker admitted having knowledge of JLab lifting standards.

Email report from medical services after initial visit (2/8/2012, ~1115)

2/8/2012 1:42 PM

FYI: Engineering Incident Notification Re: [Worker]

Step 3 Summary of Event and / or Injuries, including Initial Fact Finding Meeting information: determine the chain of events and timeline. Use attachment as necessary.

Date/Time of Incident: February 8, 2012 @ 10:45 a.m.

Place: Bldg. 36

Description: [Worker] was pushing a heavy magnet with another employee when he lifted part of the magnet and felt a pop in his right upper arm.

Diagnosis: Right bicep tendon rupture.

Treatment: [Worker] was sent offsite to Sentara Urgent Care for further evaluation.

Work Status: No use of right arm until evaluated by an Orthopedist.

Report from medical services after follow up visit (2/8/2012, ~1400)

"I spoke with Sentara Urgent Care and had them fax me a clarification of [Worker] restrictions. They are as follows:

1. No repetitive use of right arm.
2. No lifting or pulling with right arm.

Injured Worker was scheduled for surgery to repair the ruptured tendon on 02/17/2012.

Notable Event Report

Emergency Notifications Made (Subsequent to the Event):	Date	Time
Fire, Rescue & Emergency Medical: (9-911)		
Guard Post: x4444; 269-5822		
Occupational Medicine 269-7539	02/08/2012	1045
ESH&Q Reporting Officer: 876-1750	02/08/2012	1442
Crew Chief 630-7050		
Industrial Hygiene: 269-7863:		
Other:		

Witness Accounts: (Use attachments as necessary. Box will expand as necessary)

Witness Account of Co-worker

"On 2 Feb.¹ around 11:00 am in Bldg 36 I was asked to move a solenoid that was blocking access to a power supply that was being worked on. The solenoid was attached to a wooden base and weighed around 300 pounds. Since space was tight [Worker] and I decided to just slide it a short distance when [Worker] said he felt a pull in his arm near his bicep. He left right after that to go to medical."

¹ injury occurred on 8th February

Co-worker stated to DSO that he made a rushed decision.

Co-worker stated that he was asked by the supervisor of the injured worker to move the obstacle from the area of the ongoing equipment tests.

Witness Accounts: (Use attachments as necessary. Box will expand as necessary)

Witness Account of Supervisor

“[Injured Worker], [Other co-workers] and I was in bldg. 36 working on a 262kw box supply. We were working from the rear and front of the box supply. There were some RF equipment behind the box supply near where we were working. [Co-worker] and [Worker] decided to move the equipment. [They] were pushing the magnet away from the box supply, at one point [Worker], picked up on the magnet when [he] felt a pop in his right arm I requested that [he] go to medical services to have his arm checked. Medical services sent [Worker] to now care center for further evaluation.”

Environmental Aspects

Type of Material Released:	Quantity:
Source:	Time Flow was Halted or Controlled:

For Investigation Team (√ All That Apply):

Reportable Quantity
 Impact Ground/Soil
 Storm Water Channel/Drain
 Sanitary Sewer

Records, Documents, Pictures, and Other References: (Copy and paste, use attachments or document links as necessary)

ESH&O representative comment #1

“The Klystron Solenoid Magnet was almost 300 lbs (297).

Two devices for lifting / moving those magnets were close by (a wheel truck* - 3 ft. & a "Genie Lift"* - 10 ft.). The "Genie Lift" is specifically for moving those magnets.

[Worker] said, "The only thing I can think of, is I was leaning to my right and was in an unusual position". I believe that was a contributing factor to the injury as was the continuing problem with storage and two divisions sharing such a small work area. These are the kind of injuries that sometimes happen when space is at such a premium.

The Office section of the JLab ES&H Safety Manual addresses lifting but does not put a specific weight limit. It says employees should not lift heavy objects because other employees and equipment* are available to assist. Of course [Worker] was not lifting as much as shoving, but he did say he lifted some to break the friction of the box to the floor.”

ESH&O representative comment #2

“Further research has turned up a reference to an "Ergonomic" standard here at the lab for lifting. A training wave file (MED-05) for lifting, limits JLab lifting to 50 lbs. A note: [Worker] has seen that training presentation.”

ESH&O representative comment #3

“The contributing factors would be storing equipment in front of the cabinet (work area), being in a hurry, the fact that it had been moved that way recently before (without injury) and the weight of the magnet and crate / pallet it was secured to (> 300 lbs).

The causal factors as I see it were that even though two pieces of equipment capable of moving the equipment safely were

Records, Documents, Pictures, and Other References: (Copy and paste, use attachments or document links as necessary)

nearly, no one suggested using either. That is what Supervisors and often co-workers do. (Poor demonstration of team work).

Finally, The root cause as I see it, was that an employee who had taken the (Med-05) Lab Lifting Training and had moved one of these magnets recently (so he knew they were 4 to 6 times the labs limit for lifting), declined to ask for help or equipment and shoved the unit while poorly positioned resulting in the injury.”

SME for Electrical Safety comments

“Working space is required on both sides of where live parts are exposed (or can be exposed); this would include the rear of the supply also. This issue is definitely a factor in this incident. If the area was marked and/or cleared in the first place then there would have been no task of moving the magnets. This set up was a National Electrical Code (NEC) violation of article 110.26.

The distance to maintain is 36 inches.”

Notes from investigation team discussions

Building safety warden stated that the area has a clean-up effort once a month

Storage has been progressively getting worse. The RF group was forced out of a long term storage area and required to use the active staging area in building 36.

[Worker] has been cautioned about moving heavy objects (>50lbs) in the past.

Material handling devices were in close proximity to the activity:

- Heavy duty hand truck was available for assisting in the move.
- A Genie lift was available in the area.

Movement of magnet was not required at that time, but was convenient for the DC power supply test.

The planning of DC power supply tests under potentially full power should have included a clearance of 36” around the supply.

Causal Analysis: (Use attachment as necessary)

Root Cause:	Injured Worker did not use proper material handling equipment
Contributing Causes: (List as many as apply.)	<ul style="list-style-type: none"> • Injured Worker regularly lifts >50lbs (greater than allowed by JLab policy). • Co-worker admits to being ‘in a rush’. • There is chronic inadequate storage space for RF and DC Power R&D. • The clearance area for the DC Power test was inadequate for the work effort.

Extent of Condition Check	Responsible Person(s)	JLab CATS Number	Target Date
NA			

Corrective Action(s)	JLab CATS Number	Target Date
Resolve storage issues in building 36 RF work area (R. Nelson)	AI-2012-01-01-01	4/1/2012
The OSP for DC Power "box" supply testing should specify a clearance area around the device-under-test (DUT) that meet all electrical and arc flash requirements for the maximum potential hazard. (S. Philip)	AI-2012-01-02-01	4/1/2012

Lessons Learned (Confer with Division/Department Lessons-Learned Coordinator) (Use attachment as necessary)	JLab COE Number
Planning of work activities in crowded situations should include participation from all groups that are expected to be in close proximity to the ongoing effort. This should include discussion of special space requirements and potential hazards.	N/A

Investigation Team Confirmation:

The below signees, confirm to the best of their knowledge, that the information presented in this document is accurate and complete.

Role	Print	Signature	Date
Lead Investigator	Andrew Kimber		5 MAR 12
DSO	Henry Robertson		3/5/12
Safety Warden #36	Kevin Banks		3/5/12
EHS&Q Rep.	Ned Walker		3/5/2012
Supervisor	Simon Wood		3/5/12

Upon confirmation submit document to the ES&H Reporting Officer for completion and distribution.

Documentation of Findings: (To be Completed by ESH&Q Reporting Officer)

Notable Event Number:	ENG-12-0208
CATS Number:	AI-2012-01-02-01
JLab COE Number:	N/A
ORPS Number:	SC--TJSO-JSA-TJNAF-2012-0002
NTS Number:	4165
CAIRS Entry:	<u>20120208</u>
DOE Cause Code:	A3 Human Performance LTA, B2 Rule Based Error, C04 Previous success in use of rule reinforced continued use of rule; A1 Design/Engineering Problem, B5 Operability of Design/ Environment LTS, C01 Ergonomics LTA
ISM Code:	Perform work within controls, Analyze the Hazards

Acceptance/Acknowledgement of Facts

	Print	Signature	Date:
Associate Director/ Department Manger	Will Dren		3/6/12

Distribution:

- ES&H Reporting Officer (Original)
- Associate Director/Department Manager
- Division Safety Officer
- Investigation Team Members

Form Revision Summary

- Revision 1.3 – 01/31/12 – Updated ESH&Q Reporting Officer assignment from SSmith to CJohnson per MLogue Edited to clarify process steps.
- Revision 1.2 – 10/20/11 – Updated ESH&Q Reporting Officer assignment from JKelly to SSmith per MLogue.
- Revision 1.1 – 05/24/11 - Edited to clarify process steps.
- Revision 1 – 11/23/10 – Updated to reflect current laboratory operations.

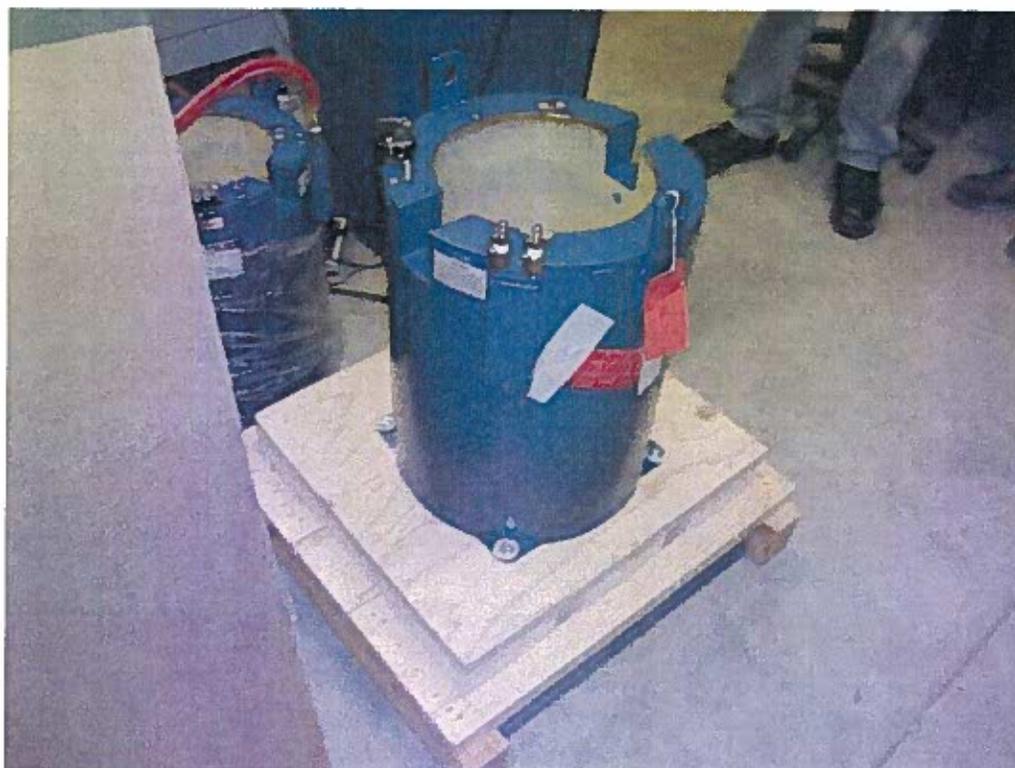
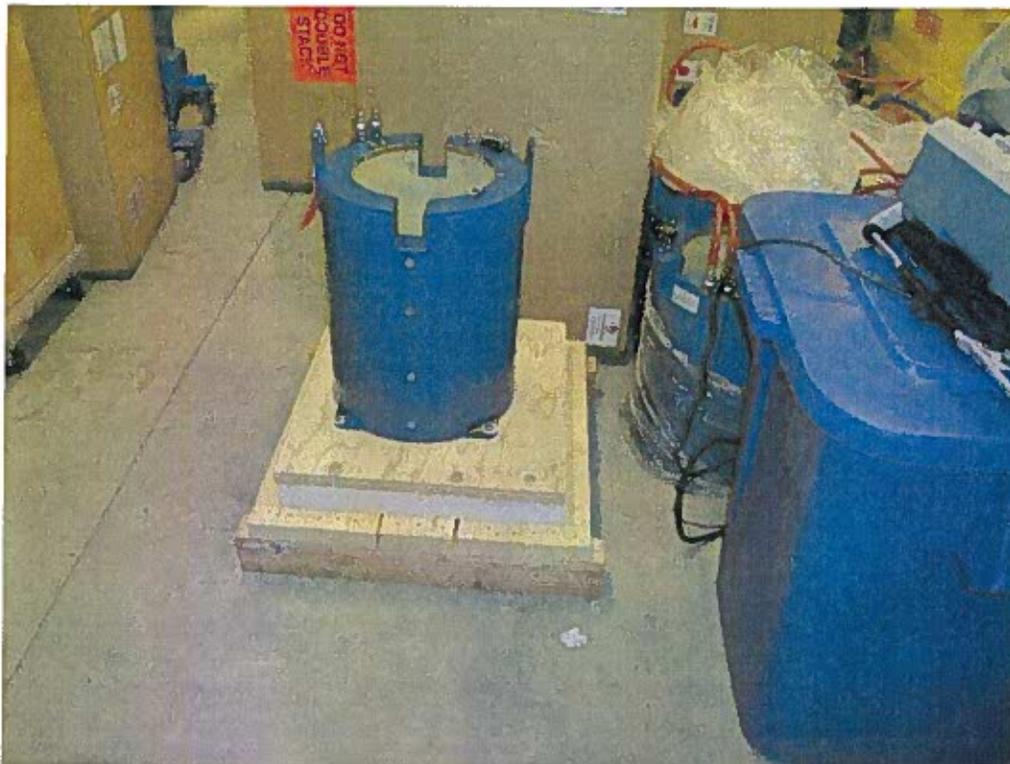
For questions or comments regarding this form contact the Technical Point-of-Contact Tina Johnson

ISSUING AUTHORITY	FORM TECHNICAL POINT-OF-CONTACT	APPROVAL DATE	EXPIRATION DATE	REV.
ESH&Q Division	Tina Johnson	10/19/09	10/09/12	1.3

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Appendix A: photos takes on 8th February 2012 after the incident





Additional photos taken prior to a clean-up day on 3rd February 2012



