LOUISIANA STATE UNIVERSITY

IE 4461 HUMAN FACTORS

DR. AGHAZADEH

SEMESTER PROJECT REPORT

NIOSH
HISPANIC WORKERS
SAFETY SURVEY

Research Assistants

BERTOT, JACKOBY

HUERTA, JOSE

PLAYER, LAURA

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Summary

Various reports show a continuous downward trend in the number of reported fatal injuries among workers in the private and public sectors in general. Overall rates and numbers have fallen slightly, but for certain groups of workers including Hispanic workers, such numbers are on the rise. Fatal injuries among Hispanic workers have increased from 815 in 2000, to 891 in 2001 according to the Bureau of Labor Statistics Census of Fatal Occupational Injuries. This alarming numbers represents a 9 percent increase.

In previous years, increases of Hispanic worker deaths were caused by a rise in fatalities in the construction industry, however the 2001 increase was seen particularly in the field of agriculture. It is also noticed that the problem is even more serious for Hispanic workers who were born outside of the United States than for those who were actually born here. Without any surprise the states where more of these fatalities occur are the states where the presence of Hispanics is large-California, Texas, New York and Florida.

Background Information

The number of Hispanic workers has been increasing significantly over the last 20 years. In the 2000 Census, 35 million Hispanics were reported living in the United States. This is around 12.5 percent of the population (AFL-CIO, 9). Now the number of Hispanics is estimated to be more than 40 million, 14 percent of the population of the United States. By 2050 the Census projects that the Hispanic population will account for one out of every four Americans (Richardson, 64).

Hispanic population as a percentage of the U.S. population 1980-2000

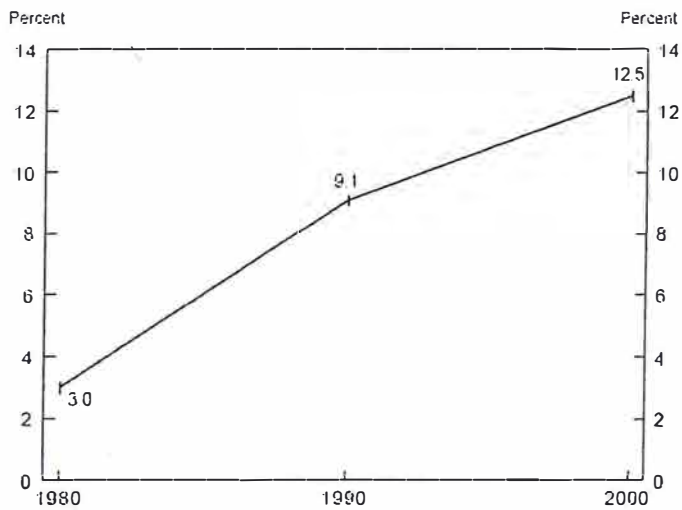


Figure 1.1

Monthly Labor Review 2005. Visual Essay: Hispanic Worker Fatalities

Source: U.S. Census Bureau

A very important fact is that most of these people are of working age. Another important fact is that the number of work-related fatalities and injuries has been increasing among

Hispanic workers at a disproportionate rate. Even thought, the overall number of fatalities has dropped, from 1992 to 2001 the number of fatalities for Hispanic workers has increased by 67 percent (AFL-CIO, 9). Overall, about a fourth of fatal work injuries among Hispanic workers occur in the construction industry. This number was 3.5 higher in 2002 than it was in 1992 (Richardson, 67). Most of these workers were foreign born.

Fatal work injuries involving Hispanic workers in private construction by nativity, 1993-2002

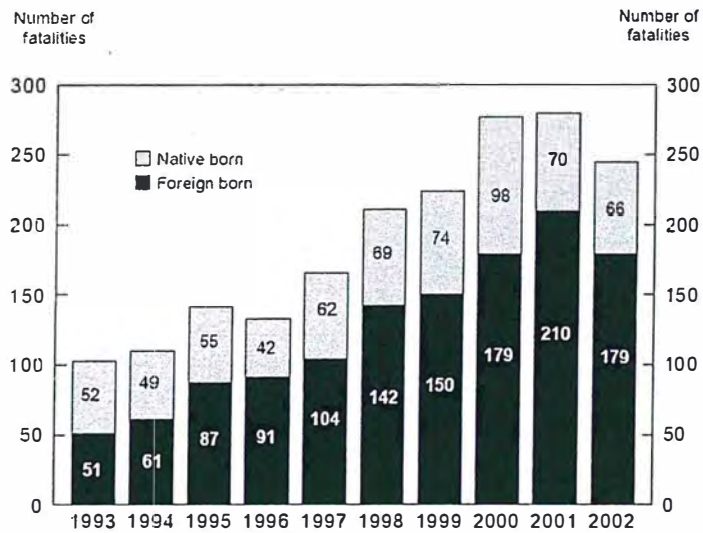


Figure 1.2

Monthly Labor Review 2005 Visual Essay: Hispanic Worker Fatalities

Source: Census of Fatal Occupational Injuries

There are several reasons that explain the cause of this trend. Some of those reasons may be arguable. The following table summarizes the main reasons proposed by experts and organizations:

Main Reasons for Hispanic Work Related Fatalities and Injuries
o Hispanic immigrants are hired disproportionately into the most dangerous jobs o They are often unskilled o They have less job or safety training than American-born workers o They are not really used to work in a safe manner o Big communication gap between Hispanic workers and contractors o Immigrants are usually newer to their jobs than Americans o Workers are not provided with the appropriate safety equipment o They are reluctant to complain about dangerous working condition because they are more afraid about losing their job or being deported.

Some reports relate these reasons to each other. For example Hispanic immigrants receive less job and safety training than Americans, because they do not speak English (Greenhouse, 11) or if training is provided they do not fully understand what it is taught (Sant, 18). But, why is it that immigrants are hired into the most dangerous jobs? Some an answers to this may be low levels of education, few job skills, lack of understanding of

the English language in addition to their illegal residence status in the United States. To make matters worse, some of these workers can not even read in their native language (Dayton, 1). Many Hispanic workers are day laborers: "If you're a day laborer who gets picked up at a local 7-Eleven and paid cash for that day, there's no opportunity to learn about safety on the job.... They (contractors) are not going to spend a day teaching you about safety..." (Greenhouse, 11)

There are also cultural problems involved, as stated in one of the reasons in the table. Hispanic workers are simply not used to working in a safe manner. In fact, they also say that Hispanic employers are worse to work for because they are less caring about safety and work conditions (Greenhouse, 11) than American employers. Probably the most arguable reason is the language barrier. Safety experts say these barriers contribute to an increase of the injury rate. For example, in many job sites safety instructions and warnings appear only in English. Another example, if someone yells "watch out" a person that does not understand English would not react as fast as he could (Greenhouse, 11). However, there are people like Philip Ford, president of the Charleston Trident Homebuilders Association, who states that language barrier is not a real cause because "Most sites where Hispanics workers are employed include some Hispanics who speak English fluently."(Dayton, 1)

There are others who say that employers are responsible for this situation because they do not provide the worker with appropriate safety equipment. "They also want to get things done and they do not enforce their safety rules" (Sarmiento, 1). Activists say that many

accidents or deaths are not reported because the workers were not documented. In few words, some employers take advantage of the undocumented situation of many Hispanic workers.

Most Common Construction Accidents

Electrical Incidents	• Contact with Power Lines • Lack of Ground-Fault Protection • Path to Ground Missing or Discontinuous • Equipment Not Used in Manner Prescribed • Improper Use of Extension and Flexible Cords
Falls Falls are the leading cause of fatalities in the construction industry.	•Unprotected Sides, Wall Openings, and Floor Holes •Improper Scaffold Construction •Unguarded Protruding Steel Rebars • Misuse of Portable Ladders
Struck by Approximately 75% of struck-by fatalities involve heavy equipment such as trucks or cranes.	• Vehicles • Falling/Flying Objects • Constructing Masonry Walls

Trenching and Excavation	• No Protective System • Failure to Inspect Trench and Protective Systems • Unsafe Spoil-Pile Placement • Unsafe Access/Egress

Taken from OSHA's Construction eTool.

What is being done to reduce these fatalities?

Many companies are trying to teach their supervisors to speak Spanish, some of them also promote Spanish videos to teach Hispanic workers how to take precautions at work and protect themselves (Greenhouse, 11)

OSHA and Hispanic Contractors of America Inc. alliance:

- Stimulate development of safety and health resources for Spanish speakers
- Disseminate information through conferences, events, community-based activities and electronic media.
- Work with community organizations and other groups to build safety and health awareness within Hispanic community.
- Encourage bilingual individuals in construction to take OSHA's train-the-trainer class so they can teach the class in Spanish.

(Professional Safety,14)

SPALW (Society's Safety Professionals and the Latino Workforce) 2005 Conference

Working effectively with Latino workforce:

- Learn about the culture and traditions of Spanish-speaking employees
- Try to greet Latino employees in their language, use first names and smile. These small steps help bridge the communication and cultural gap.
- Train Spanish-speaking workers in their language. Use pictures, diagrams, and charts, and avoid technical works in presentations and printed materials
- Hire an effective Spanish-speaker trainer.
- If using an incentive plan, try to incorporate group rewards.

(Professional Safety, 23)

OSHA provides an excellent and easy to understand safety construction guide called "OSHA Construction eTool" as a webpage. Its Spanish version is available. Reference to this webpage is given in the bibliography section of this report.

Objectives:

The main objective of our project is to evaluate the reasons why the numbers of job fatalities among Hispanic workers are on the rise. Our group carried out such task via a survey which contained questions targeted to obtain information on the levels of safety training among Hispanic workers in the city of New Orleans as well as the city of Baton Rouge, both located in Louisiana. The city of New Orleans experiences a large presence of Hispanic workers pre and post Katrina, on the other hand the city of Baton Rouge has only experienced an increase in the presence of Hispanic workers post Hurricane Katrina.

Hypothesis:

The main reasons why the numbers of job fatalities among Hispanic workers are on the increase are:

a) Lack of proper safety training

b) Lack of knowledge of the English language

Methods and Procedures:

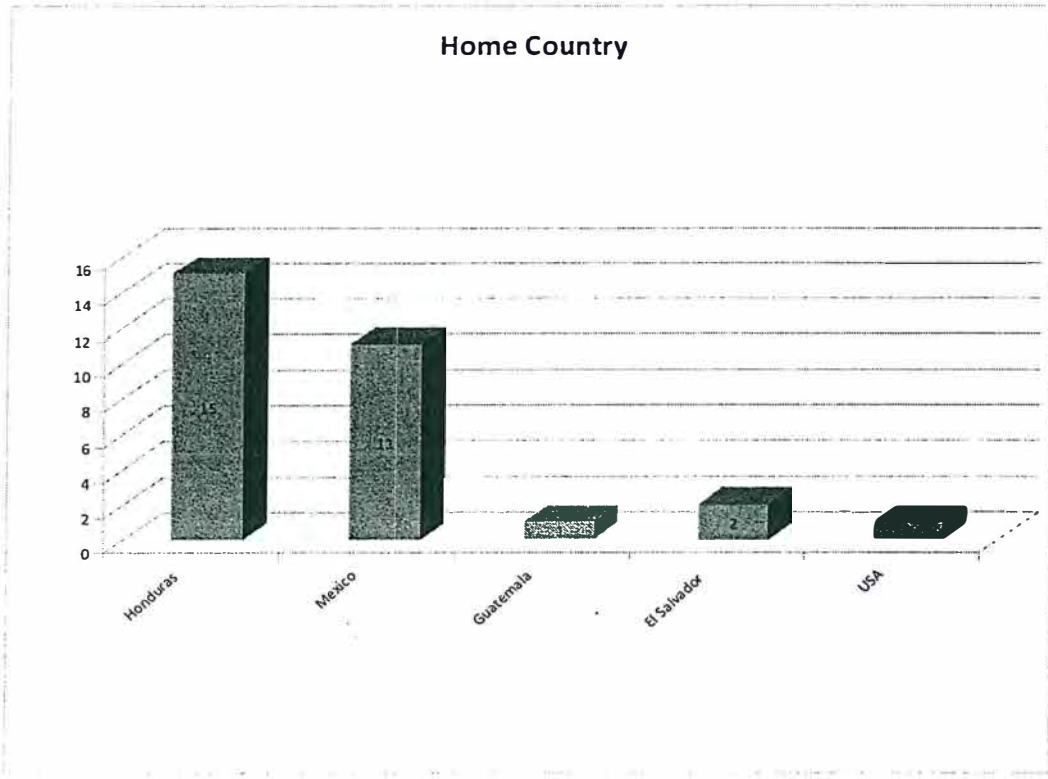
The procedure to obtain our information starts with the elaboration of a survey-questionnaire which consists of numerous questions ranging from country of origin, level of education, type of work previously performed, existence of formal or informal safety

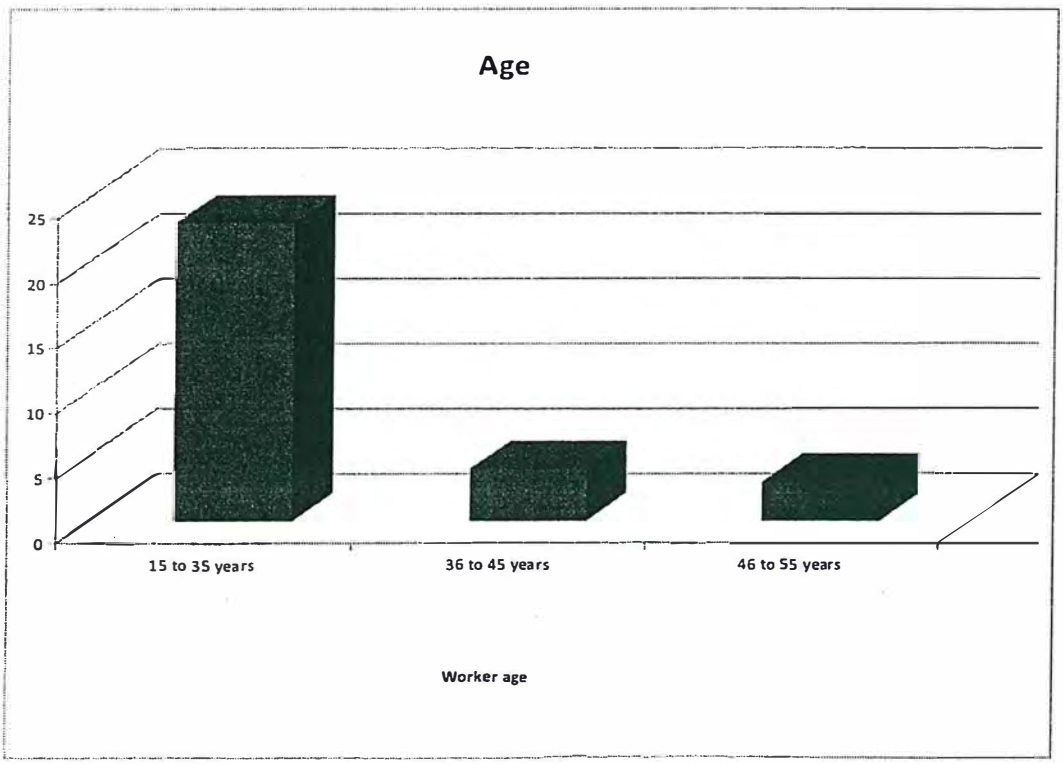
training among others. It ends with the evaluation of a series of common safety phrases. Our group spoke face to face to each and every one of those individuals subjected to the questionnaire.

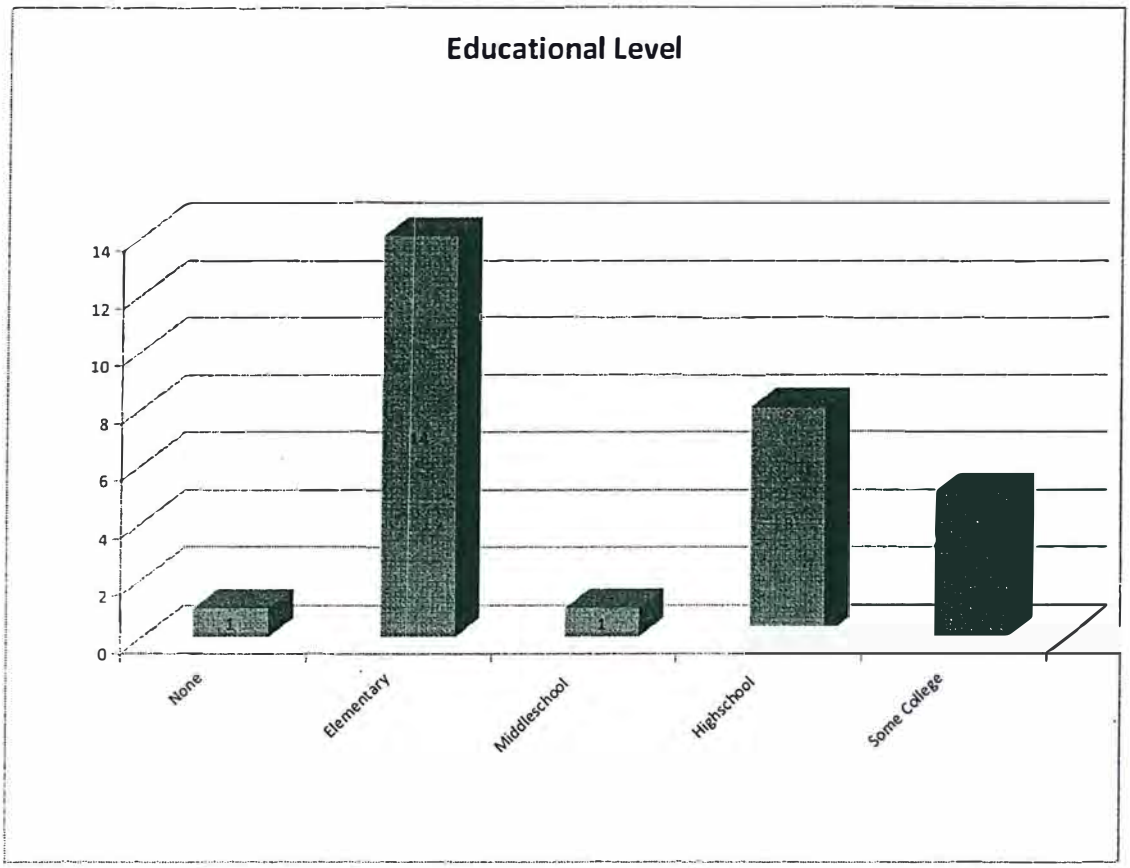
Secondly, once the information is collected, we proceed to evaluate such information aiding us with an Excel Software Program. Representations through Bar Charts as well as Pie Charts will provide with extremely helpful details which later will allow to draw conclusions and make the proper recommendations.

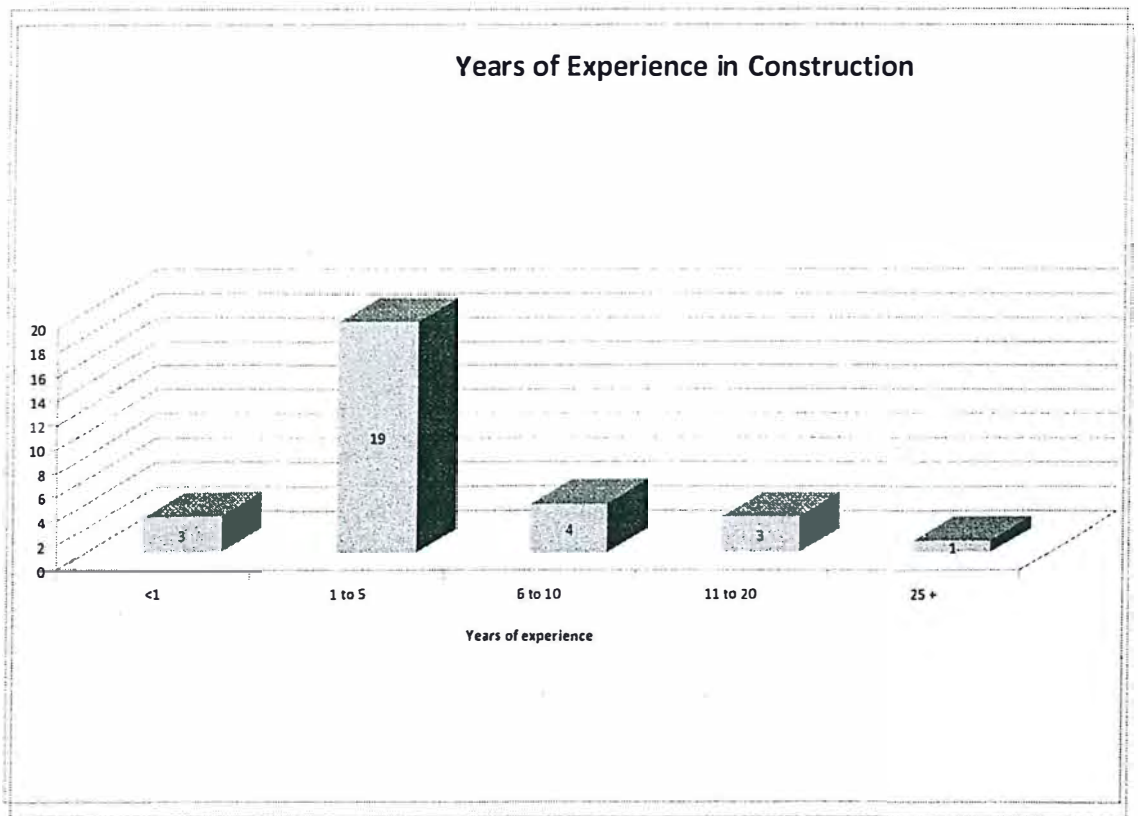
Finally, the last part of our project takes all the information collected, carefully reviews the evidence in the form of data and graphs and tries to draw conscious conclusions that will provide or attempt to provide reasonable answer to our original hypothesis. Are the numbers of job fatalities among Hispanic workers on the rise due to lack of safety training and knowledge of the language?

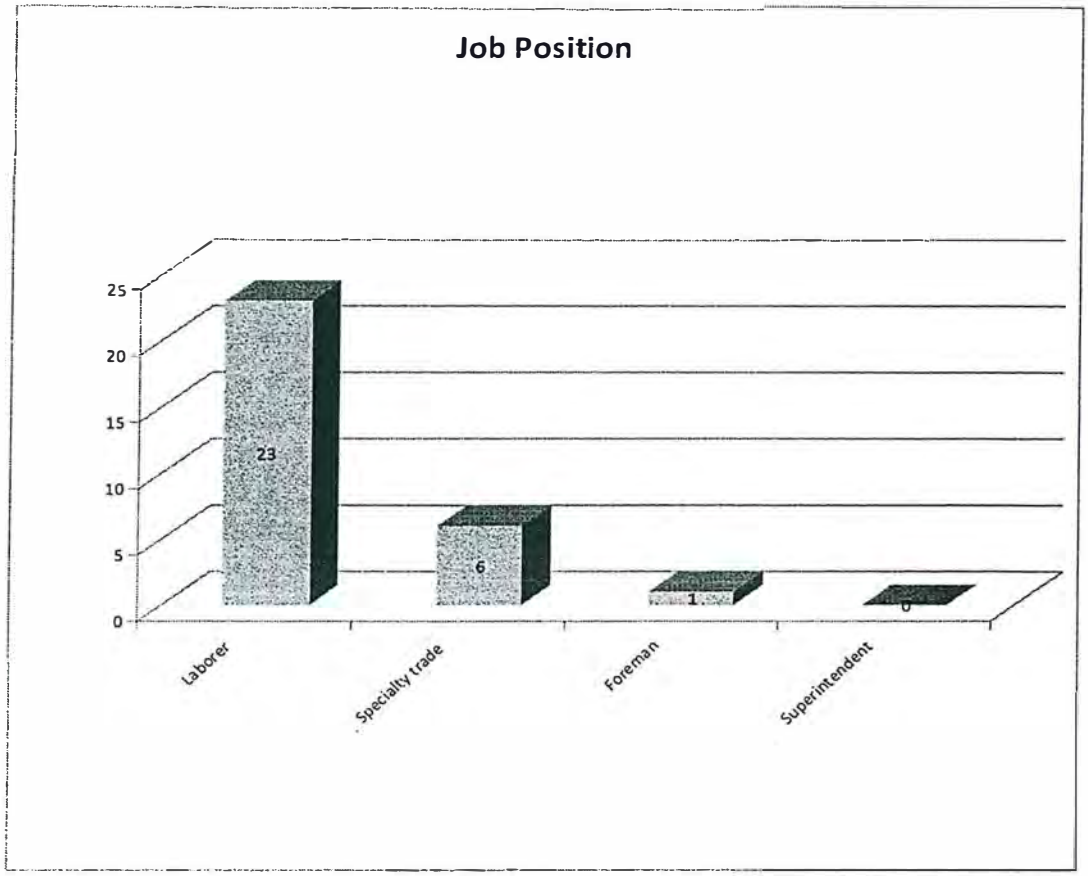
Results: These are the results of the NIOSH survey in graph format.

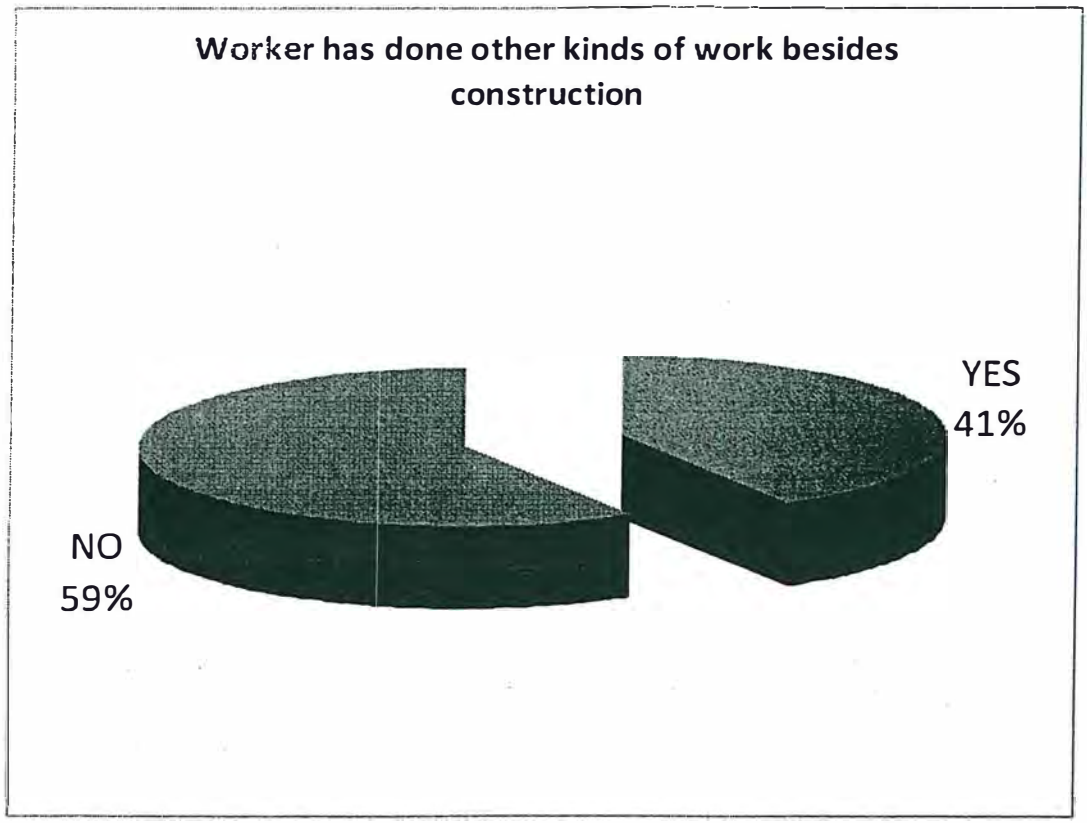


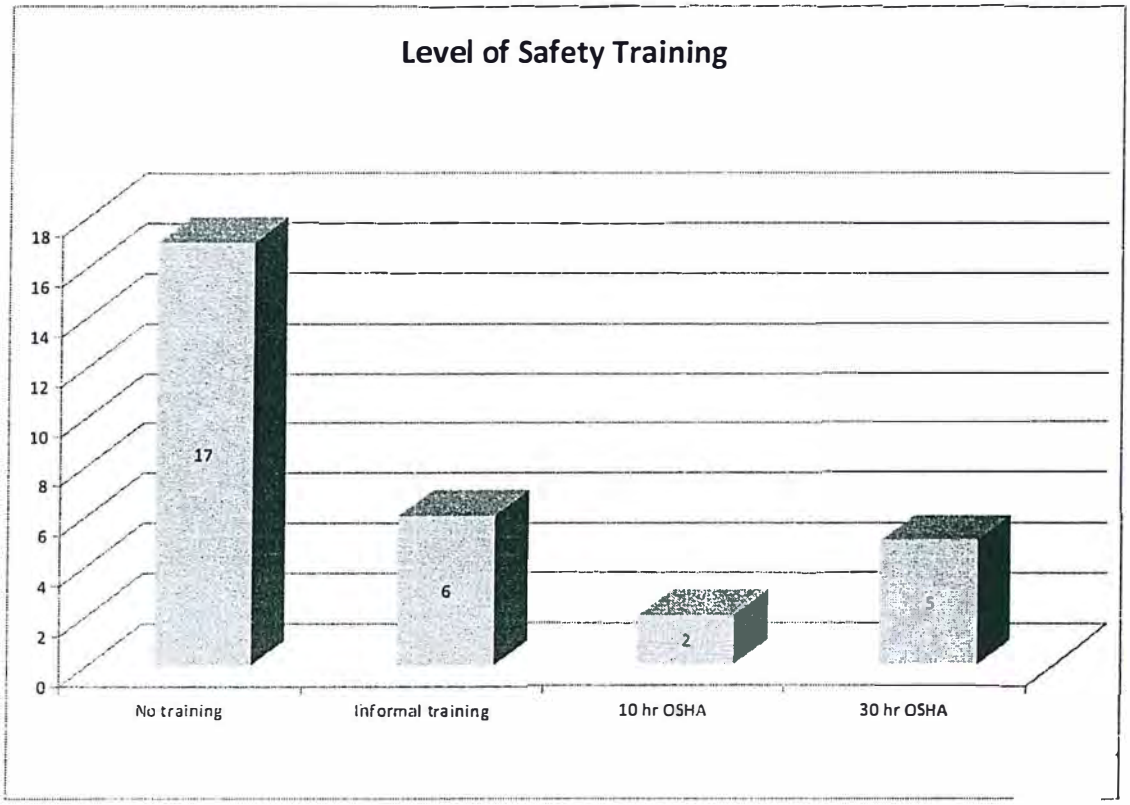



Educational Level
14
12
10
8
6
4
2
0
1
None
Elementary
Middleschool
Highschool
Some College


Years of Experience in Construction
20
18
16
14
12
10
8
6
4
2
0
3
19
4
3
1
<1
1 to 5
6 to 10
11 to 20
25 +
Years of experience

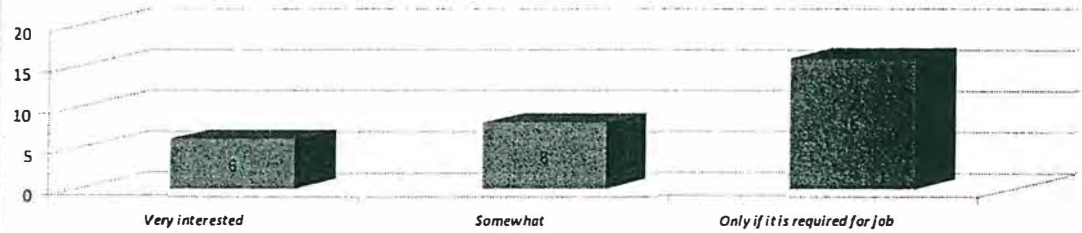

Job Position
25
20
15
10
5
0
23
6
1
0
Laborer
Specialty trade
Foreman
Superintendent


Worker has done other kinds of work besides construction
YES
41%
NO
59%

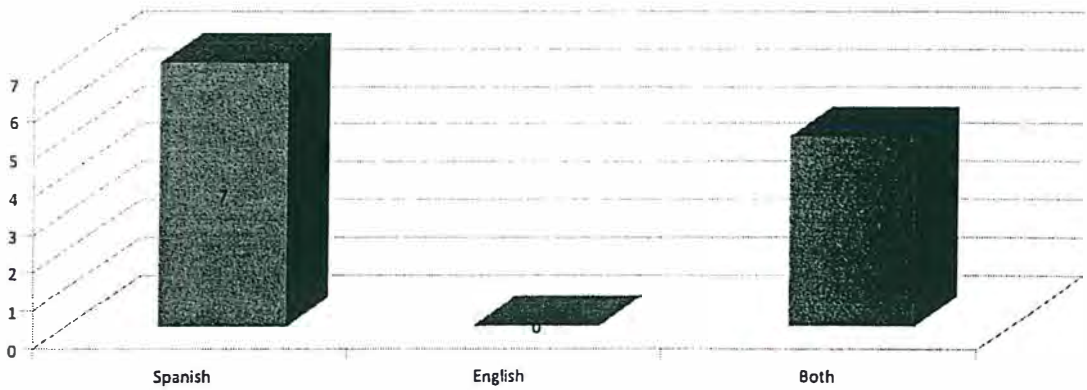

Level of Safety Training
18
16
14
12
10
8
6
4
2
0
17
6
2
5
No training
Informal training
10 hr OSHA
30 hr OSHA


Received Adequate Safety Training

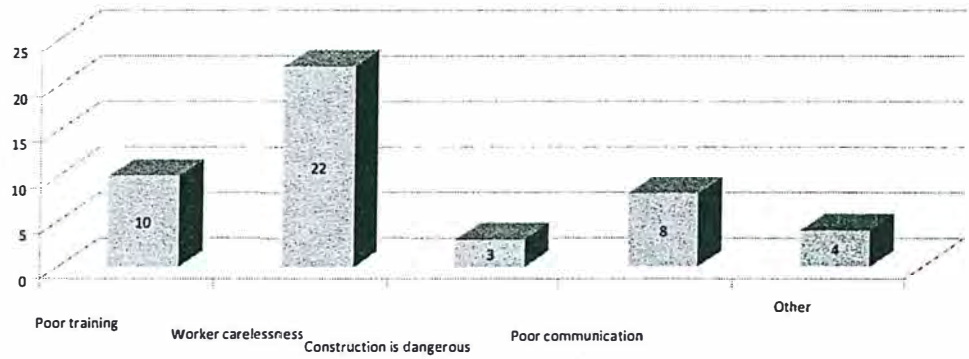
Interested in taking Safety Training Course



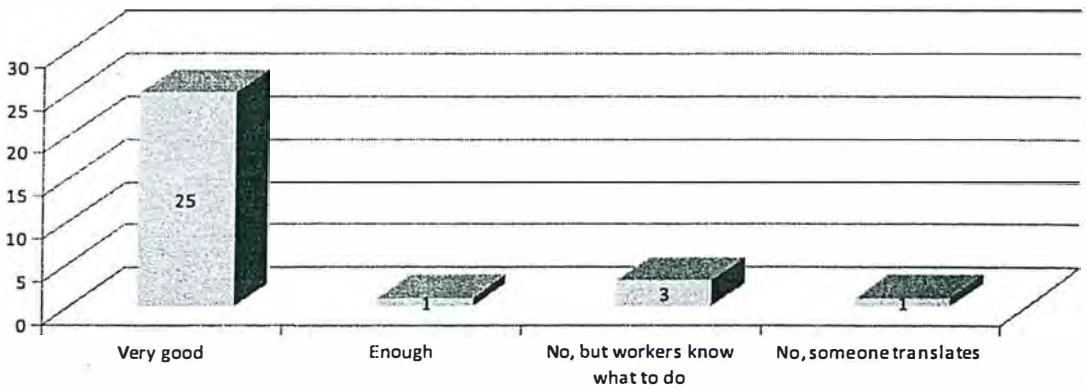
What language was the safety training provided in?



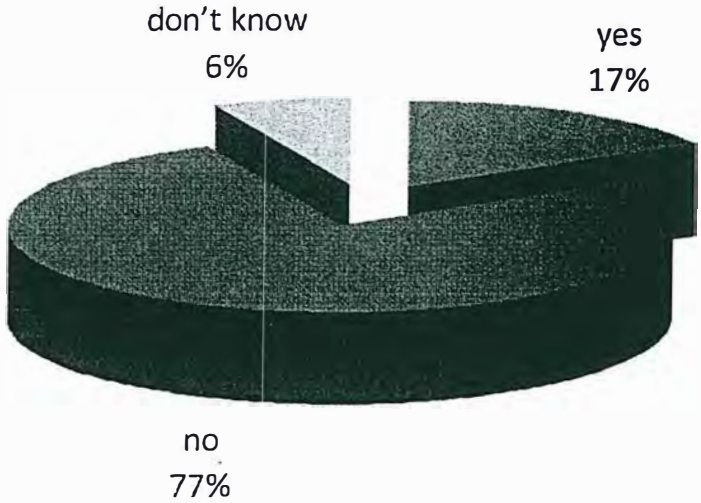
Main Cause of Accidents



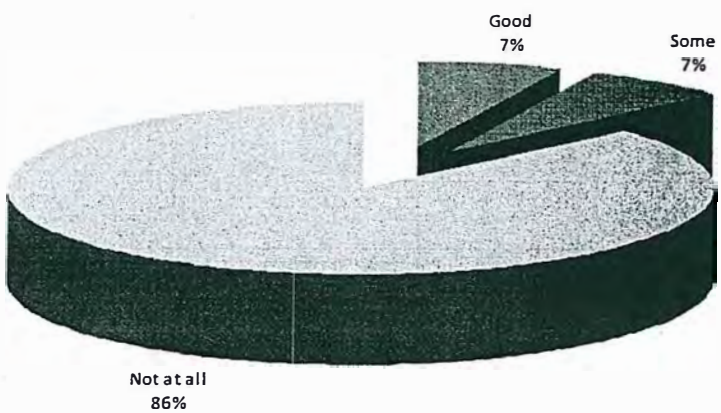
Does Immediate Supervisor speak Spanish?

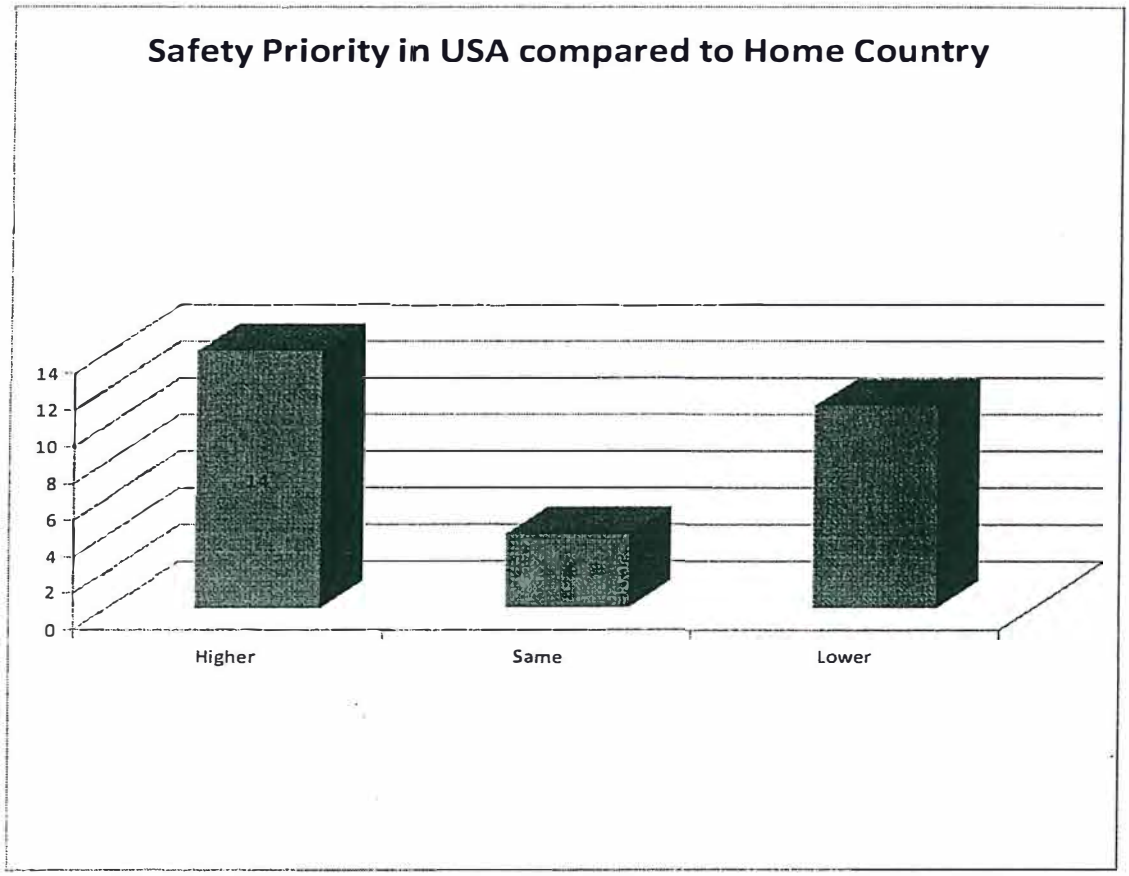


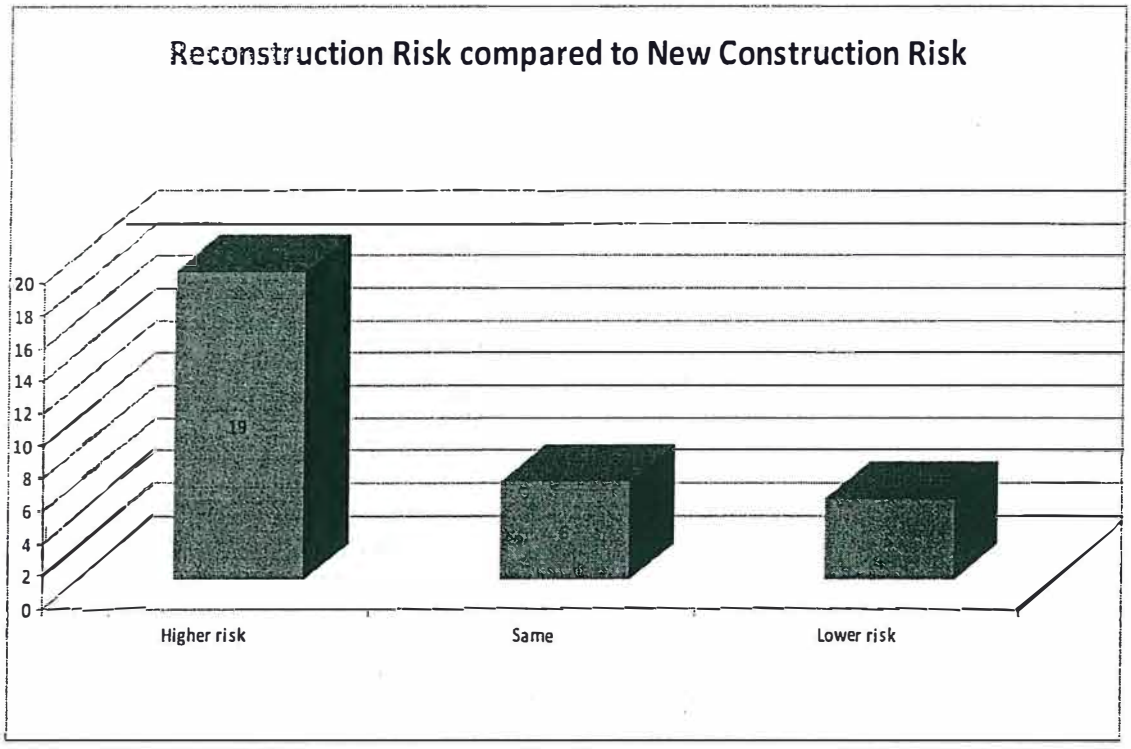
Are the equipments and mehtods used in your Home Country compared to USA the Same?

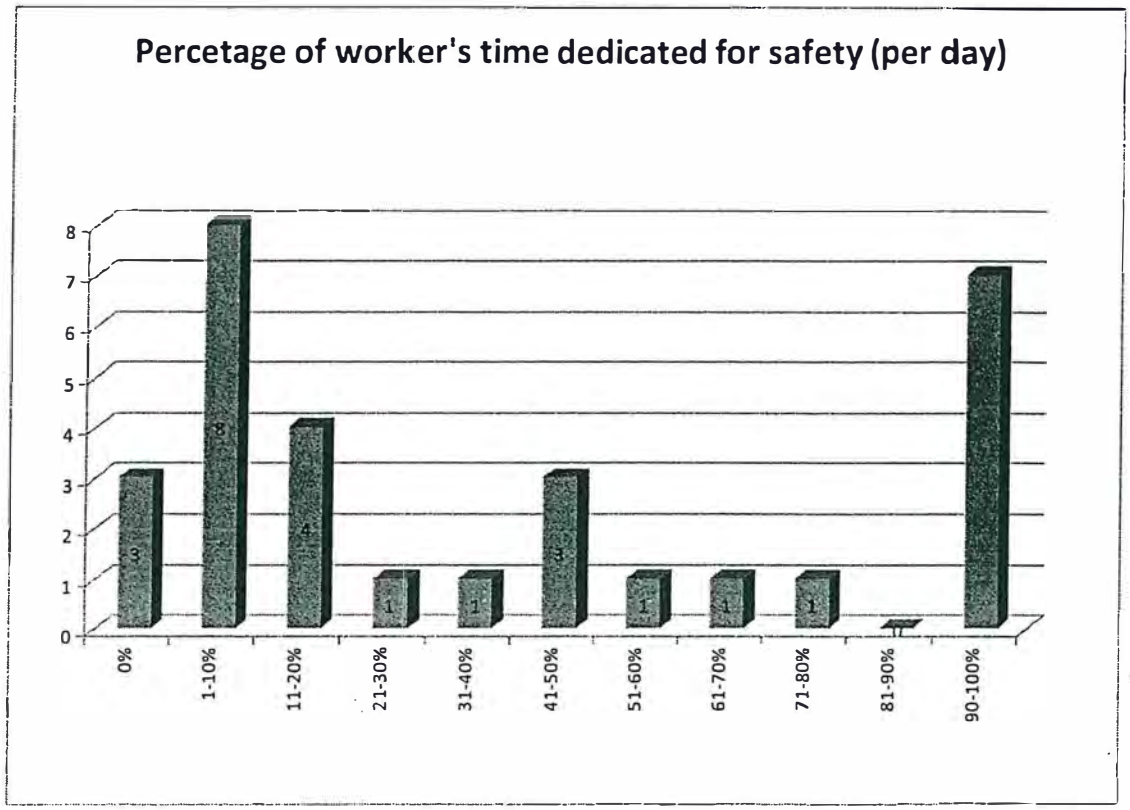


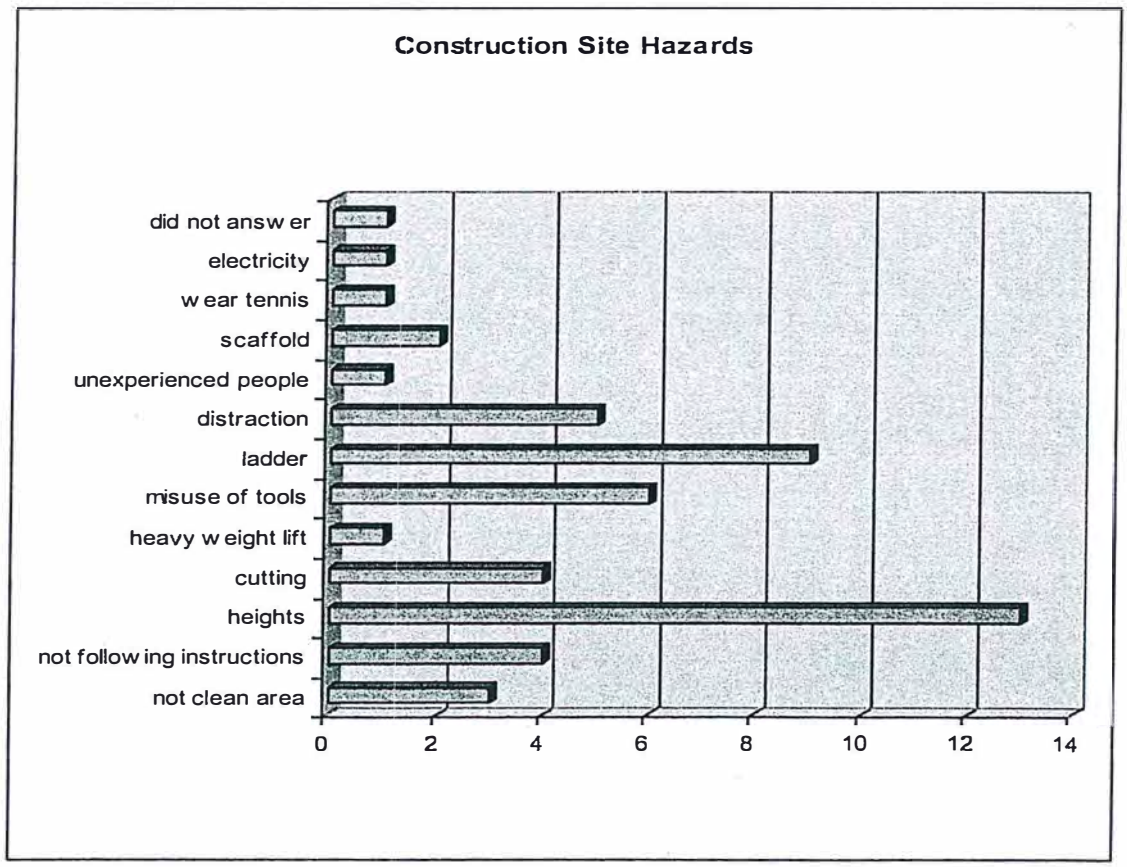
English Language Level

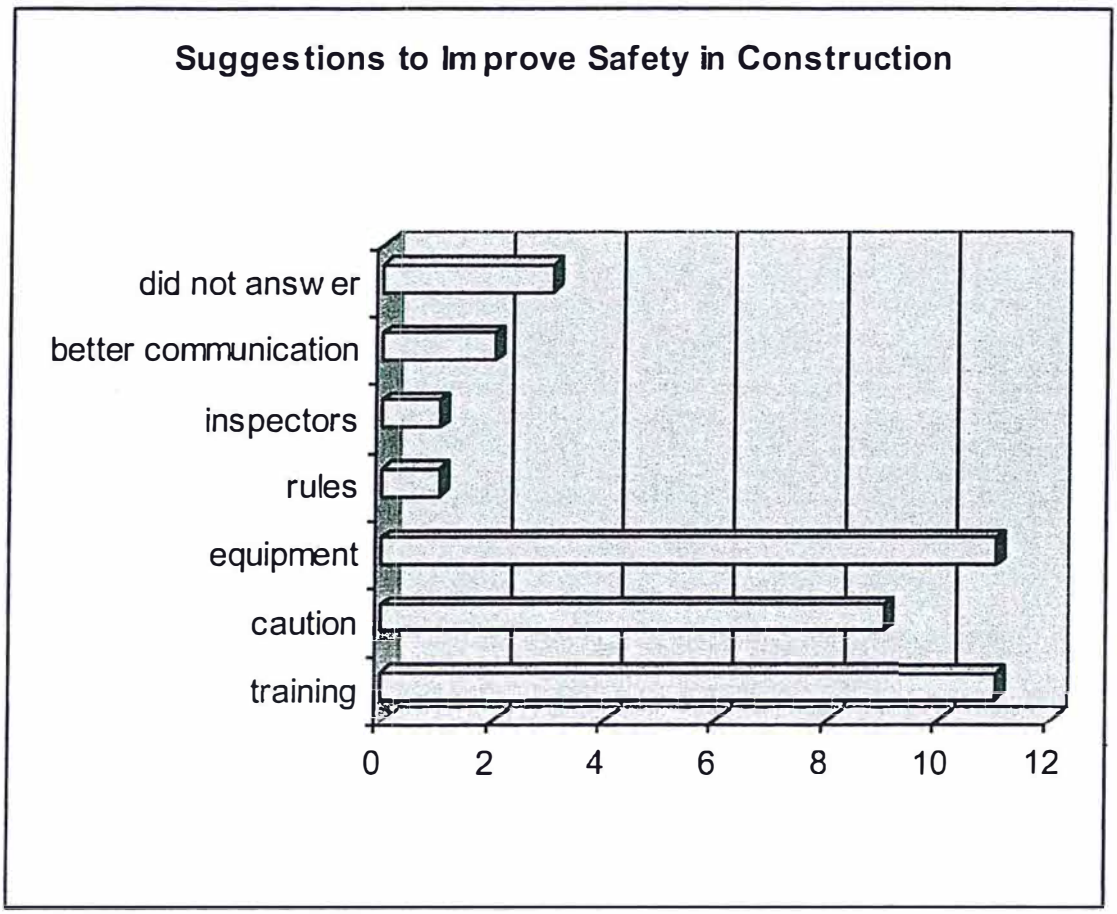



Safety Priority in USA compared to Home Country
14
12
10
8
6
4
2
0
Higher
Same
Lower


Reconstruction Risk compared to New Construction Risk
20
18
16
14
12
10
8
6
4
2
0
19
Higher risk
Same
Lower risk


Percetage of worker's time dedicated for safety (per day)
8
7
6
5
4
3
2
1
0
3
8
4
1
1
3
1
1
1
1
0%
1-10%
11-20%
21-30%
31-40%
41-50%
51-60%
61-70%
71-80%
81-90%
90-100%


Construction Site Hazards
did not answ er
electricity
w ear tennis
scaffold
unexperienced people
distraction
ladder
misuse of tools
heavy w eight lift
cutting
heights
not follow ing instructions
not clean area
0
2
4
6
8
10
12
14


Suggestions to Improve Safety in Construction
did not answer
better communication
inspectors
rules
equipment
caution
training
0
2
4
6
8
10
12

Data Results:

After collecting, organizing and analyzing all the data the following results were obtained. From the graphs we can summarize the following:

1. **Honduras** is the home country of most of the interviewed workers (15) followed by Mexico with 11.

2. **19 to 35 years of age** is the age range of most of the interviewed workers. Most of them are under 26 years of age.

3. **Elementary school** was the highest educational level attained by the workers. Most of them did not make it past 6^{th} grade.

4. **1-5 years** is the range of **experience** that the majority of the interviewed workers have. Most of them have 3 years or less.

5. **Laborer** is the job position for most of the interviewed people (23). Most of them have worked in residential and commercial construction sites. The great majority has been on a ladder higher than one story and on the roof of a house.

6. **59% of the workers have worked only in construction**

7. **Most of those interviewed do NOT have Construction Safety training (17).** The rest (13) have had some kind of formal (OSHA) or informal training. For those who had the training everyone stated that they **understood the material** and all of them say **the course was given in Spanish,** or Spanish and English together.

8. **53% of the interviewed workers AGREE** that they receive **adequate safety instructions in their jobs (feel safe).**

9. Most of the workers would take safety training **only if it is a requirement for their jobs.**

10. **Worker carelessness is the main cause of accidents** on a construction site according to most of the Hispanic interviewed workers (22) followed by poor training (10).

11. A great majority say that their **immediate supervisor speaks Spanish (25).** Only 3 people said that the immediate supervisor does not speak Spanish but they know what to do.

12. **Different equipment and methods** are used in the U.S. from those used in their home countries according to 77% of the interviewed workers.

13. **The United States is safer country to work at** (higher safety priority and lower risks at work) **than their home countries** (14), however the number is not that far from those who think the other way (11)

14. **Reconstruction work risks are higher** than new construction work according to most of the workers (19 out of 30).

15. **Construction safety takes up from 1-10% of the worker's time** on a daily basis based on the slightly majority of the answers (8). A group of 7 workers answered that safety in the workplace should take 90-100% of their time. It was difficult to get an answer to this question probably because most of the workers do not have a systematic or fixed way to arrange security in their workplace. Most of them answered "You just have to be careful all the time." After the question was explained and asked again, they still did not know what to answer. Most of their safety "rules" are based on their personal experiences or common sense.

16. **Working on elevated surfaces** is the most dangerous situation in construction according to most of the Hispanic workers.

17. **Appropriate training and equipment** are side by side according to the suggestions by the workers as to how to improve security in their workplace.

Both answers to parts 17 and 18 were difficult to obtain during the survey. Workers were asked for 3 job hazards and 3 job suggestions which would improve safety. They hardly mentioned one, some of them did not answer at all or simply kept quiet. There are many possible reasons, the most consistent with the rest of the data may be that they actually do feel safe in their workplace or they have never learned about the risks.

18. The very last question in the survey had to do with the knowledge of about 19 different safety terms. The majority of those interviewed did not know any of the terms being asked. **86% of the interviewed workers do NOT speak English at all.**

Conclusions:

The more we analyze the pattern on the answers it becomes more and more evident that equipment and safety rules are not used by these workers. Most of them seem to put their trust mostly in the skills gained through their own experience. One of the most safety conscious workers, who has a college degree from Mexico, responded to some questions with interesting suggestions as to how to increase safety, he said "Inspectors should constantly check if the safety rules and equipment are being applied. It is mandatory that employers supply the safety equipment and workers to use it. This is already being done in other states, and it works ...but I have not seen any of that in Louisiana..." he said.

Philip Ford, president of the Charleston Trident Homebuilders Association, said "I think it is amazing that many more are not injured." After this research his statement makes more sense to us. With no equipment or safety rules to follow, it is reasonable to think that more accidents could have happened.

Finally, after intense scrutiny of our data we feel highly confident in rejecting our initial hypothesis that language barrier is the main cause of the accidents, since there is usually someone (in this case the supervisor) who speaks Spanish as well as English. There also those wokers who have had some formal training, they said that such training was given in Spanish and that they completely understood its content.

As for the second part of our hypothesis which states poor or lack of safety training as being responsible for the increase of job fatalities among Hispanic workers, we strongly feel that we can NOT reject such hypothesis. Certainly, lack of safety training appears to be the main reason that accounts for the majority of the fatalities.

Bibliography

- AFL-CIO. The American Federation of Labor and Congress of Industrial Organizations. Death on the Job: The Toll of Neglect. 12th Edition. April, 2003. http://www.bctgm.org/pdf%20files/deathonjob.pdf

- Dayton, Kathleen. S.C. Takings Steps to Make Dangerous Job a Little Safer. Hispanic Worker Safety Task Force. August 6, 2006. http://www.llr.state.sc.us/HispanicTaskForce/index.asp?file=nr/dangerousjob.htm

- Greenhouse, Steven. Hispanic Workers Die at Higher Rate. The New York Times, July 16, 2001 Monday, Late Edition-Final, Section A; Column 1; National Desk; pg 11.

- Hopkins, Jim. Deaths of Hispanic workers soar 53%. USA Today. March 25, 2002. Database: Academic Search Premier.

- Professional Safety. Alliance Formed to Reduce Construction Deaths Among Spanish-Speaking Workers. Hispanic Contractors of America. May 2002, Vol. 47 Issue 5, p14, 1/3p. (Article) Database: Academic Search Complete.

- Professional Safety. Hispanic Worker's Deaths, Injuries Cause for Concern, OSHA says. April 2002, Vol. 47 Issue 4, p1, ¼ p. (Article) Database: Academic Search Complete.

- Professional Safety. SPALW Conference Addresses Safety for Latino Workers. April 2005, Vol. 50 Issue 4, p23-27, 2p (Article) Database: Academic Search Complete.

- Richardson, Scott. A visual essay: Fatal work injuries among foreign-born Hispanic workers. Monthly Labor Review Online. October 2005, Vol. 128, No. 10. http://www.bls.gov/opub/mlr/2005/10/ressum.htm

- Sant, Brad. Spanish-speaking safety. Roads & Bridges, April 2003, Vol. 41 Issue 4, p18, 1p. (Article) Database: Academic Search Premier

- Sarmiento Sheila. Worker's Death Rises Concern Over Safety of Hispanic Immigrant Workers. BYU NewsNet. April 9, 2007. http://newsnet.byu.edu/story.cfm/63984

Appendix A
Survey in English

NIOSH Research Project Construction Safety Survey **ID #** _____
Winter 2007

Location _____

1) What is your age _____

2) What is your education level _____

3) Gender ☐ Male ☐ Female

4) How many total years of construction experience _____

5) How many years of experience in the U.S. Construction Industry _____

6) What is your job position

☐ Laborer
☐ Specialty trade (for example, painter) Trade _____
☐ Foreman
☐ Superintendent

7) List other kinds of work you have done (e.g. drywall, electrical, etc.)

8) Exposure to construction jobs (Please check all that apply)

☐ I have worked on a residential construction site
☐ I have worked on a commercial construction site (e.g. office building, or store)
☐ I have worked on a road construction site
☐ I have worked on a chemical plant or power plant construction site

9) Please check all that apply

☐ I have helped wire an electrical outlet
☐ I have been on a ladder higher than 1 story
☐ I have been on the roof of a house
☐ I have been in a hole or excavation more than 4 feet deep
☐ I have worked around farm machinery
☐ I have worked around heavy construction equipment
☐ I have used power tools (drill, circular saw, etc..)
☐ I have used power lawn and garden equipment

10) Level of safety training (Please check all that apply)

- ☐ I have no formal construction safety training
- ☐ I have had some informal safety training (for example, safety walk through a site or a tool box talk)
- ☐ I have completed an OSHA 10 Hour Course
- ☐ I have completed an OSHA 30 Hour Course
- ☐ Other safety training (please list)

11) I receive adequate safety training for my job

- ☐ I agree
- ☐ I disagree

12) Are you interested in taking a safety training course?

- ☐ I am very interested in taking a course
- ☐ I am somewhat interested in taking a course
- ☐ I would only take this course if it is a requirement for my job

13) **If you have had safety training:** I have a better understanding of safety on the job site than I did prior to the training.

- ☐ Strongly Agree
- ☐ Agree
- ☐ Undecided
- ☐ Disagree
- ☐ Strongly Disagree

14) What language was safety training provided in?

- ☐ English
- ☐ Spanish
- ☐ Both English and Spanish

15) If training was provided in Spanish or in both English and Spanish, please clarify (check all that apply)

- ☐ The trainer spoke English and Spanish
- ☐ The trainer brought an interpreter to assist in communication
- ☐ One of the workers helped translate when necessary

16) I understood the examples used in class, such as putting on a safety harness.

- ☐ Strongly Agree
- ☐ Agree
- ☐ Undecided
- ☐ Disagree
- ☐ Strongly Disagree

17) List three things that you think are hazards (reasons for accidents) on a construction jobsite

1.

2.

3.

18) List three things that you think would improve safety on a construction jobsite

1.

2.

3.

19) Do you think that the main cause of accidents on a construction site occur because of:

- ☐ Poor or inadequate training of workers
- ☐ Worker carelessness
- ☐ Construction is dangerous and accidents are inevitable
- ☐ Poor Communication
- ☐ Other (Please List) _____

20) As a construction worker on a job site, I would expect construction safety to take up _____% of my time on a daily basis

Communication with Supervisor if you are originally from outside the U.S.

21) Does your immediate supervisor speak Spanish?

- ☐ Yes, my supervisor speaks Spanish very well
- ☐ Yes, my supervisor speaks enough Spanish to tell us what we need to do although he doesn't speak Spanish well
- ☐ No, my supervisor doesn't speak Spanish well but we know what to do and don't need much input from the supervisor
- ☐ No, my supervisor doesn't speak Spanish well but someone translates

22) Are there a lot of differences in construction terms used in your home country and the United States?

- ☐ Yes, there are a lot of differences in terms and construction language
- ☐ No, many terms and a lot of the language used in construction are the same

If yes, please give some examples:

23) Do you use the same kind of equipment and methods when working in your home country and the United States?

- ☐ Yes, we use a lot of the same equipment and methods
- ☐ No, many terms are different in Mexico and the United States

24) What priority does safety have in your home country compared to the United States?

- ☐ Higher
- ☐ Same
- ☐ Lower

25) How would you classify the safety risk of your work in construction in the United States?

- ☐ Higher
- ☐ Same
- ☐ Lower

26) Does re-construction work have similar safety risks to new construction work?

☐ Higher risk
☐ Same (Yes).
☐ Lower risk

If not, please give some reasons why there are higher or lower risks:

27) Are there any construction terms used on the job site that you do not understand? Please list

28) Do you know what the following terms mean?

Yes	No	Term
		Tag line
		Lock out/Tag out
		Egress (path entering/exitting building)
		Bird Caging
		Base Plates
		Spoil Pile
		Out Riggers
		Toe Boards
		GFI
		Benching
		Rebar Caps
		Trench plate
		Welding Shield
		Lanyard
		MSDS
		Slip Forms
		Flammable Cabinet
		Mud Sills
		Rigging

Appendix B
Survey in Spanish

Proyecto de Investigación NIOSH
Encuesta de Seguridad en Construcción **ID #** _____
Invierno 2007

Lugar _____

1) Cuál es su edad? _____

2) Cuál es su nivel de educación? _____

3) Género ☐ Masculino ☐ Femenino

4) En total, tiene cuántos años de experiencia en construcción? _____

5) Cuántos años de experiencia en construcción tiene en Estados Unidos? _____

6) Cuál es su posición de trabajo?

☐ Obrero
☐ Trabajador especializado (por ejemplo, pintor) Especialización _____
☐ Capataz
☐ Superintendente

7) Escriba otros tipos de trabajos que ha hecho (por ejemplo, tableros de yeso, eléctricos, etc.)

8) Exposición a trabajos de construcción (Seleccione todo lo que aplique)

☐ He trabajado en construcción de residencias
☐ He trabajado en construcción de comercios (edificios de oficinas o tiendas)
☐ He trabajado en construcción de calles
☐ He trabajado en construcción de plantas químicas o centrales eléctricas

9) Seleccione todo lo que aplique:

☐ He ayudado a conectar/electrificar salidas eléctricas/tomas de corriente
☐ He estado en escaleras más altas de un piso
☐ He estado en el techo de una casa
☐ He estado en una excavación de más de 4 pies de profundidad
☐ He trabajado alrededor de maquinaria de granja
☐ He trabajado alrededor de equipos de construcción pesados

☐ He utilizado herramientas eléctricas (perforadoras eléctricas, sierras circulares, etc..)
☐ He utilizado equipos de jardín

10) Nivel de entrenamiento de seguridad (Seleccione todo lo que aplique)

☐ No tengo entrenamiento formal de seguridad en construcción
☐ He tenido entrenamiento de seguridad informal (por ejemplo, caminatas de seguridad en el sitio de contrucción o charlas de cajas de herramientas)
☐ He completado un curso de 10 horas de OSHA
☐ He completado un curso de 30 horas de OSHA
☐ Otros entrenamientos de seguridad (por favor enumerar)

11) Recibo entrenamiento de seguridad adecuado para mi trabajo

☐ Estoy de acuerdo
☐ No estoy de acuerdo

12) Está interesado en tomar un curso de entrenamiento de seguridad?

☐ Estoy muy interesado en tomar un curso.
☐ Estoy un poco interesado en tomar un curso.
☐ Sólo tomaría este curso si es requerido por mi trabajo.

13) **Si ha tenido entrenamiento de seguridad:** Ahora tengo un mejor entendimiento de lo que es la seguridad en el trabajo del que tenía antes del entrenamiento.

☐ Estoy muy de acuerdo
☐ Estoy de acuerdo
☐ No sé
☐ Estoy en desacuerdo
☐ Estoy muy en desacuerdo

14) En qué idioma fue el entrenamiento de seguridad?

☐ Inglés
☐ Español
☐ Inglés y Español (ambos)

15) Si el entrenamiento fue en español o en inglés y español (ambos), por favor clarifique (seleccione todo lo que aplique):

☐ El instructor habló inglés y español

☐ El instructor trajo un traductor para ayudar en la comunicación
☐ Uno de los trabajadores ayudó a traducir cuando fue necesario

16) Comprendí los ejemplos utilizados en clase, como el ejemplo de cómo ponerse un arnés de seguridad

☐ Estoy muy de acuerdo
☐ Estoy de acuerdo
☐ No sé
☐ Estoy en desacuerdo
☐ Estoy muy en desacuerdo

17) Escriba tres cosas que usted piensa son peligros (causas de accidentes) en un sitio de construcción.

1.

2.

3.

18) Escriba tres cosas que usted piensa aumentarían la seguridad en un sitio de construcción.

1.

2.

3.

19) Cuál piensa usted que es la principal causa de accidentes en un sitio de construcción?

☐ Entrenamiento pobre o inadecuado de los trabajadores
☐ Descuido de los trabajadores
☐ La construcción es peligrosa y los accidentes son inevitables
☐ Falta de comunicación
☐ Otros (Por favor enumere) _____

20) Como un trabajador en el sitio de construcción, la seguridad en construcción tomaría _____% de mi tiempo cada día

Comunicación con el supervisor si usted no es originario de los Estados Unidos

21) Su supervisor inmediato habla español?

☐ Sí, mi supervisor inmediato habla español muy bien
☐ Sí, mi supervisor habla suficiente español para decirnos lo que tenemos que hacer, aunque no habla español muy bien
☐ No, mi supervisor no habla español bien, pero nosotros sabemos lo que tenemos que hacer y no necesitamos mucha dirección del supervisor
☐ No, mi supervisor no habla español, pero alguien traduce

22) Hay muchas diferencias entre el vocabulario de construcción utilizado en su país y el utilizado en Estados Unidos?

☐ Sí, hay muchas diferencias en el vocabulario de construcción
☐ No, una gran parte del vocabulario de construcción utilizado es igual en ambos países

Si su respuesta es sí, por favor escriba algunos ejemplos:

23) Usted utiliza los mismos equipos y métodos cuando trabaja en construcción en su país y en Estados Unidos?

☐ Sí, utilizamos los mismos equipos y métodos
☐ No, son diferentes en México y Estados Unidos

24) Qué prioridad tiene la seguridad en su país en comparación con los Estados Unidos?

☐ Más prioridad en mi país
☐ La misma prioridad
☐ Menor prioridad en mi país

25) Cómo clasificaría los riesgos de seguridad de su trabajo en construcción en los Estados Unidos?

☐ Mayores riesgos
☐ Iguales
☐ Menores riegos

26) El trabajo de reconstrucción tiene riesgos de seguridad similares a los de nuevos trabajos de construcción?

☐ Mayor riesgo
☐ Igual riesgo
☐ Menor riesgo

Si tiene mayor o menor riesgo, escriba algunas razones:

27) Hay alguna palabra en el vocabulario de construcción utilizado en el trabajo que usted no comprende? Por favor enumere.

28) Sabe que significan las siguientes palabras?

Sí	No	Palabra
		Tag line
		Lock out/Tag out
		Egress (path entering/exiting building)
		Bird Caging
		Base Plates
		Spoil Pile
		Out Riggers
		Toe Boards
		GFI
		Benching
		Rebar Caps
		Trench plate
		Welding Shield
		Lanyard
		MSDS
		Slip Forms
		Flammable Cabinet
		Mud Sills
		Rigging

Appendix C
Safety Glossary

Tag line -- Cord that is used to move around an object connected to a crane. For example: If a worker was placing a piece of steel on a building they would use the tag line to guide the piece of steel into the proper location.

Lock out/Tag out -- When you "Lock out / Tag Out" an electrical connection you put a lock on the electrical box so that it cannot be energized. You must always label the lock so that other workers know who has it locked out and why.

Egress -- path entering/exiting building

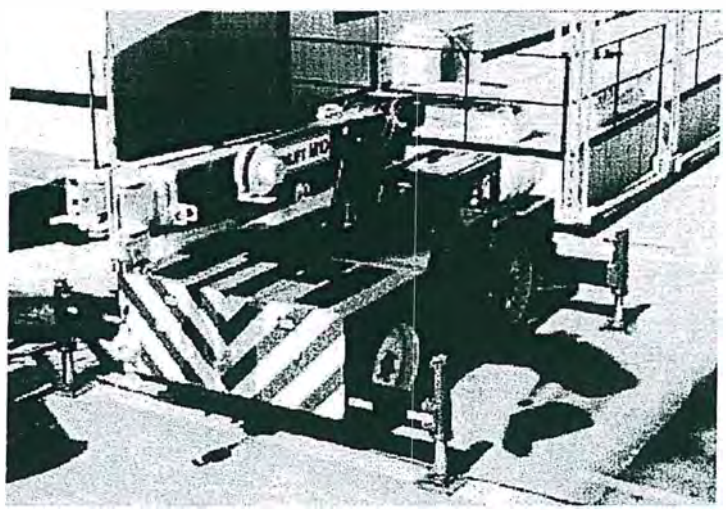
Bird Caging – damage to wire rope


Bird Caging

Base Plates – A steel plate placed under a piece of equipment or scaffold to stabilize and to provide an adequate foundation. On a scaffold, the base plates typically sit on top of the mudsill (see below).

Spoil Pile – The mound of dirt removed from an excavation (if placed near a trench, the spoil pile can create enough weight to collapse the trench).

Out Riggers -- Adjustable legs that assist in stabilizing a crane or other device.



Toe Boards – The lowest piece on a railing

GFI Ground Fault Interrupter (To avoid electrical shock in wet conditions)

Benching -- When digging a trench, the soil is terraced or sloped to reduce the risks of cave-ins. This is called benching.

Rebar Caps -- A protective device over the end of the rebar to prevent injury (impalement) if someone falls on a piece of rebar sticking up through the concrete.

Trench plate -- A plate used to shore a trench so that it does not collapse.

Welding Shield - A curtain or other means to shield people from a welding operation.

Lanyard – The rope or cord that is used to hook a safety harness (fall protection) to a stable point.

MSDS -- Material Safety Data Sheet -- a description of a chemical product (e.g., glue), the precautions that must be taken when using the product, and emergency information.

Slip Forms -- A type of concrete form.

Flammable Cabinet – A cabinet used to store flammable items, such as gasoline .

Mud Sills -- A plank used to help distribute the load of the scaffold.

Rigging -- The chains, ropes, and steel beams used to hoist an object with a crane.