

## PACIFIC GAS AND ELECTRIC COMPANY

PGE



245 MARKET STREET • SAN FRANCISCO, CALIFORNIA 94106 • (415) 781-4211 • TWX 910-372-6587

November 9, 1981

Local Union No. 1245  
International Brotherhood of  
Electrical Workers, AFL-CIO  
P. O. Box 4790  
Walnut Creek, California 94596

Attention: Mr. Jack McNally, Business Manager

Gentlemen:

This letter cancels and supersedes our previous letter dated January 27, 1981 on the same subject.

Company proposes to establish a General Construction Three Day Climbing School which will serve the same purpose as that of the Division Three Day Climbing School.

The attached training and testing program will be administered as follows:

1. General Construction employees shall attend and successfully complete the Three Day Climbing School prior to attending the Basic Climbing course at Kettleman.
2. Successful completion of this course will meet the entry requirements of a Division for entry to climbing classifications.
3. Employees will be granted two opportunities to complete the requirements of the General Construction Climbing School. If unsuccessful on the first attempt, another attempt may be made within 30 days of the date of failure. Company will hold classes as necessary. The final test will be evaluated by the General Foreman and the Instructor.
4. An employee who has successfully completed the school but who has not been placed in a Climbing Apprenticeship within 12 months of such completion must be rescheduled to the school, and again successfully complete it, prior to being sent to Kettleman for attendance at the Basic Climbing School.
5. General Construction Line Department will schedule employees by areas (as defined in Title 305 and Exhibit II) to attend the school on the basis of need, availability and Service.
6. Grievances will be handled as provided in paragraph F of the General Construction Master Apprenticeship Agreement.

November 9, 1981

7. Prior to attending the Basic Climbing School at Kettleman, an employee shall pass the Arithmetic Computation Test.

If you are in accord with the foregoing and the attachment and agree thereto, please so indicate in the space provided below and return one executed copy of this letter to Company.

Yours very truly,

PACIFIC GAS AND ELECTRIC COMPANY

By *J. W. Bonbright*  
Manager of Industrial Relations

The Union is in accord with the foregoing and the attachment and it agrees thereto as of the date hereof.

LOCAL UNION NO. 1245, INTERNATIONAL  
BROTHERHOOD OF ELECTRICAL WORKERS, AFL-CIO

Nov 18, 1981

By *Jack Wehner*  
Business Manager

**PG and E**

**FOR INTRA - COMPANY USES**

From Division or Department **LINE CONSTRUCTION DEPARTMENT**

FILE NO. **762.3**

RE LETTER OF SUBJECT **Three Day Climbing School**

\_\_\_\_\_ Date

MR. \_\_\_\_\_ Payroll No. \_\_\_\_\_  
(Foreman)

Mr. \_\_\_\_\_ (SS No. \_\_\_\_\_) of your crew has been selected to attend the G.C. Three Day Climbing School from Tuesday, \_\_\_\_\_, to Thursday, \_\_\_\_\_.

The School Location will be:

He is to report to Mr. R. V. Thrope, ready to attend the start of the class at 0800 a.m. Tuesday, \_\_\_\_\_. All travel time to and from this school will be paid at the straight time rate of pay.

Employees will be on "Special Assignment" while attending this school and provisions under Section 301.9 will apply. Employees on per diem may elect to receive per diem allowance equal to the amount allowable under Subsection 301.4 of the agreement by writing the entry of their Daily Time Report. Expenses claimed under 301.9 will be claimed on the "Expense Account", form #62-4556.

The time and expense in connection with this school is to be charged to Division 03, Account 9261, Activity Item 130, using RC #03-302.

The present classification of the trainee will be retained during his assignment. Lineman's tools, belts, and climbers will be furnished by the School for classifications other than Apprentice Lineman. Employees who are already in the Apprentice Lineman classification should bring their own climbing gear. The employees must bring his own work clothes, Lineman's boots, safety hat, gloves, safety glasses, and Accident Prevention Rules Book.

Please notify this office immediately if for any reason the employee is unable to attend.

W. M. STUBBLEFIELD

KRGrierson(5835):vjm

- cc: \_\_\_\_\_  
Employee
- \_\_\_\_\_
- Superintendent
- \_\_\_\_\_
- General Foreman

THREE DAY CLIMBING

COURSE

MANUAL for  
INSTRUCTOR and  
STUDENT

## General Construction Pole Climbing School

Welcome to the G.C. Climbing School. The purpose of this course is to determine if you can acquire the skills necessary to qualify you for climbing in line construction. While at the Climbing School you will be given concentrated instruction on pole climbing techniques and an opportunity to apply this training on a basic climbing project.

During the next three days you will be observed and graded on your performance and improvement in the following areas:

Safety Habits

Climbing Ability

Working Ability

Mechanical Dexterity

Comprehension and Initiative

After the first day of training your instructor will discuss your performance and indicate those areas you should work towards improving. Upon completion of this course your final evaluation will be discussed with you. This grade will become part of your personnel record and a copy will be directed to your supervisor.

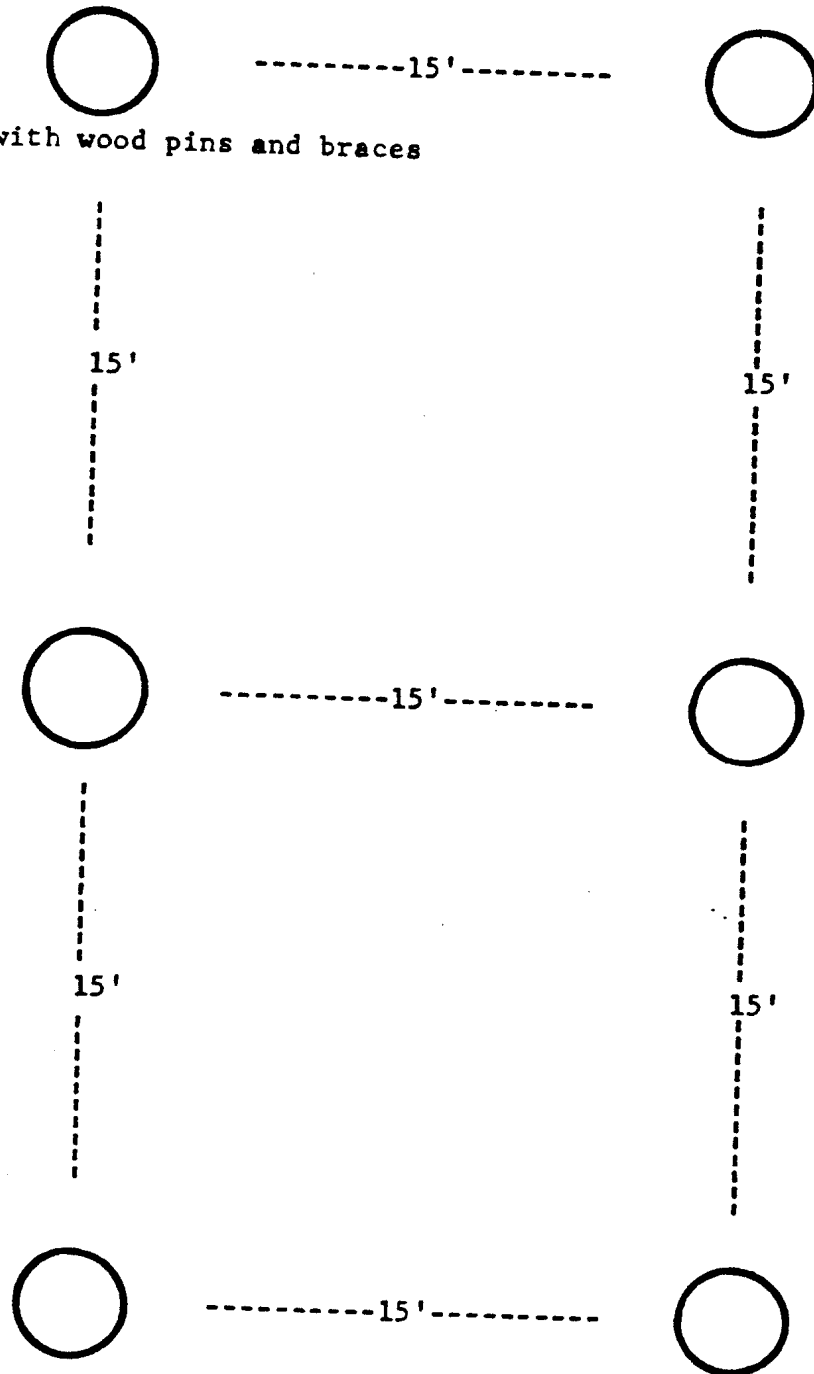
It will be important during the next three days for you to ask questions, discuss your problems and work to improve yourself. It is your responsibility to gain the maximum available benefit while attending this training session.

PRACTICE POLE AREA

G.C. CLIMBING SCHOOL

Material Required;  
6-40' poles  
6-8' LW crossarms with wood pins and braces  
3-insulators

(May vary at different locations)



Place wood chips, shavings, sawdust, etc. around the base of practice poles to a depth of approximately 24". Tree trimming crews using "Chippers" should be able to provide this material.

Poles should be separated a minimum of 15' in all directions.

## SAFE WORKING PRACTICE RULES

Objective: To determine if employees are qualified to perform overhead line construction.

### First Day - 8:00 a.m.

- A. Welcome the students to the school
- B. Cover pertinent Accident Prevention Rules & S.W.P. Rules.

### 10:30 a.m.

- C. Issue climbing tools and check for proper fit, gauge check gaffs.

### 12:00 to 12:30 p.m. - Lunch (Each Day)

### 12:30 p.m.

- D. Instructor will demonstrate proper climbing methods.

### 1:30 to 4:30 p.m.

- E. The Instructor will check each student's climbing ability individually before allowing the student to practice without direct supervision. Students should not be allowed to climb above 15 feet on the first day. Eight foot crossarms to be mounted 10 feet above ground level for student familiarization.

### Second Day - 8:00 a.m.

- A. Students practice climbing for one hour, then (if the Instructor feels they are qualified) climb over a crossarm six feet down from the top of a 40 foot pole. CAUTION - For student protection, remove eight foot crossarms mounted ten feet above ground level prior to students climbing to pole top.

### 10:30 a.m.

- B. Instructor will demonstrate the installation of line equipment that will be used by the students, then he will tailboard them on the particulars of the required project. Students then to start projects.

### 12:30 to 4:30 p.m.

- C. Instructor will rotate students that need additional help from the project poles to the practice poles.

### Third Day - 8:00 a.m.

- A. Students practice climbing for one half hour, then students to climb over the crossarm in practice area without the use of their safety strap.

### 10:30 a.m. to 3:30 p.m.

- B. All students to complete projects.

### 3:30 to 4:30 p.m.

- C. Instructor will check in all tools issued and counsel students on their grades.

NOTE: In order to successfully complete the training course, each student will demonstrate the ability to do the following:

1. Climb over a crossarm mounted 6' below the top of a 40' pole.
2. Working unassisted on a pole, the student will:
  - A. Climb to the 25' level carrying the hand line.
  - B. Mount the hand line tool holder at the 25' level.
  - C. Using a brace and bit, hand bore an 11/16" hole through the pole.
  - D. Install an 8' LW crossarm, level arm and lag braces.
  - E. Using the outside pin position install and remove insulator.
  - F. Remove arm from pole and lower to ground using the hand line.
  - G. Remove hand line tool holder and lower to ground using the hand line.
  - H. Lower the hand line and descend pole.

G.C. CLIMBING SCHOOL REPORT

NAME \_\_\_\_\_

DIVISION \_\_\_\_\_

HEADQUARTERS \_\_\_\_\_

CLASSIFICATION \_\_\_\_\_

DATES ATTENDED \_\_\_\_\_

PERFORMANCE RATING	SATISFACTORY	UNSATISFACTORY
SAFETY HABITS		
CLIMBING ABILITY		
WORKING ABILITY		
COMPREHENSION AND INITIATIVE		
MECHANICAL DEXTERITY		

PASS	FAIL

REQUIRED PROJECT COMPLETION

SUMMARY:

\_\_\_\_\_  
INSTRUCTOR



## THE BODY BELT

- A. The body belt consists of a cushion section, a belt section with tongue and buckle ends, a tool saddle and D rings which are attached solidly to the cushion or on shifting D ring belts attached solidly to a D ring saddle. The body belt usually has provisions made for a holster which will carry one or more tools in addition to the tools which are carried in the tool loops.
- B. The body belt should be worn snugly but not too tightly. The end of the strap should always be passed through the keeper when the belt is being worn. Manufacturers have standardized on a relationship between "D" sizes and waist sizes; body belts should be ordered by "D" size, as the waist size is adjustable.
- C. Employees purchasing new belts:
  1. When you are purchasing a new body belt, make sure the body belt has no tool loops for two inches on either side of the center in the back; this is a Federal requirement.
  2. The absence of tool loops in this area prevents the carrying of tools in a manner that could increase the possibility of damage to the spine in case of an accidental fall.

## LINEMAN'S SAFETY STRAP

The lineman's safety strap is probably the most important part of his tools. This is where he is putting his complete confidence and therefore, it must be absolutely dependable. The companies who manufacture safety straps are governed as to the quality of the strap by standards set forth by the Accident Prevention Committee of the Edison Electric Institute of which most major utilities in the United States are subscribing members including P G and E.

Safety straps often called a pole safety strap are made from either leather, rope or fabric. P G and E purchases only the fabric type for pole safeties as experience has shown these to be preferred over leather and rope due to their ability to withstand greater abuse in the field.

The safety strap has a breaking strength of not less than 2500 pounds per inch of width for a section free from buckle holes, and not less than 1800 pounds per inch of belt width for a section containing buckle holes for the specified buckle.

Inspection of your safety strap shall be made at least once each day or whenever there is any doubt as to its condition. Carefully inspect all parts of the strap making sure both snap keepers have strong spring tension, the buckles and rivets are in good condition and most important that there are no cuts, tears or abrasions on the belt itself that expose the inner plies of fabric.

When using a safety strap on a pole, the following steps are advisable. When stowing the safety on the body belt, the safety strap should be hung on the "Dee" ring opposite your dominant hand, e.g., if you are right-handed, the strap should be stowed on the left "Dee" ring. Place the snap stirrups facing opposite each other so that the snap stirrup supporting the double part of the strap is on the inside closest to the body.

Before climbing a pole always determine the diameter of the pole at the level that you are going to work. Adjust the safety strap accordingly by sliding the adjusting buckle up or down and affixing the tongue in the desired hole. Slide the leather keeper to the end of the strap to keep the snap stirrup stationary. Ascend the pole with the safety strap in the stowed position.

When reaching the desired level on the pole make sure your hooks are in solid, then reach down and grasp the back of the single strap snap with the thumb, placing the four fingers on the front. Depress the snap keeper with the index finger, detaching the snap stirrup from the "Dee" ring.

Place the safety strap half way around the pole, transferring it to the opposite hand. Attach the snap to the outer "Dee" ring with the snap keeper facing away from your body.

Visually check both snaps in place. CAUTION: DO NOT rely on hearing the "click" of the snap keeper to determine that the snap is in place because it is possible to snap around a tool in your pouch rather than the "Dee" ring. After determining that both snaps are correctly placed, hold the strap at the desired position on the pole with one hand while slowly letting your body weight into it with the other hand.

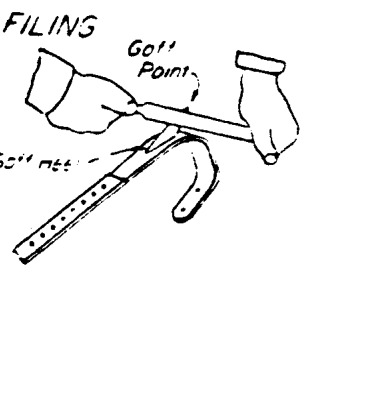
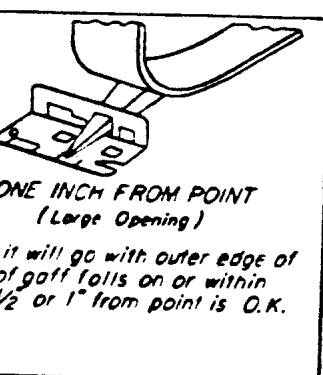
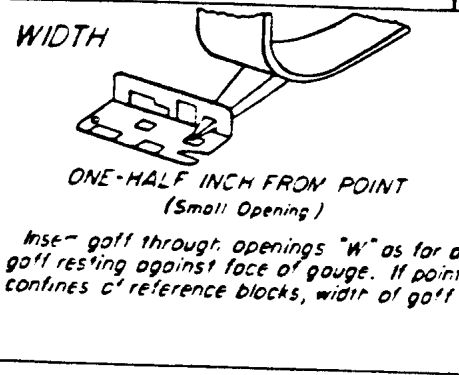
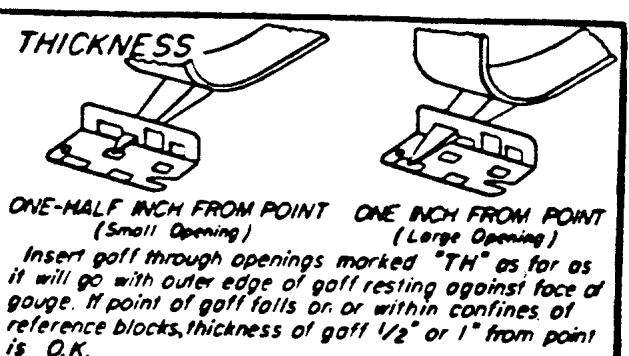
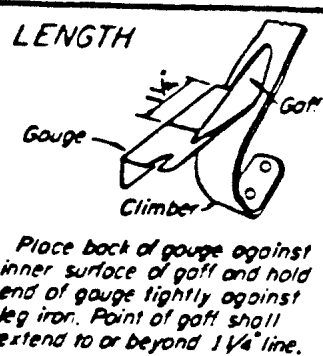
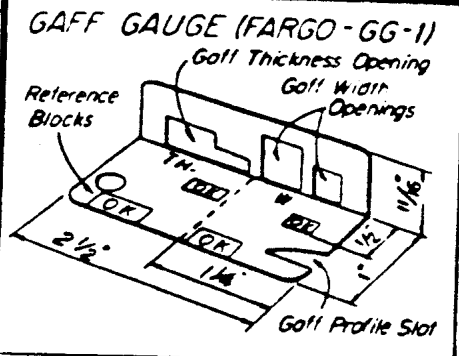
#### CLIMBERS

Climbers, hooks or leg irons as they are often called by P G and E linemen, are made of an aluminum alloy or high grade steel. They are made in adjustable or fixed lengths. Gaffs attached to the climbers may be either fixed or replaceable depending on the preference of the individual.

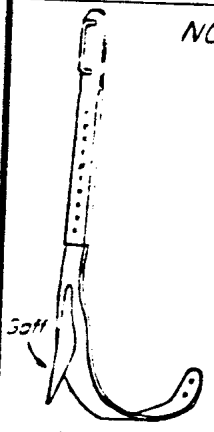
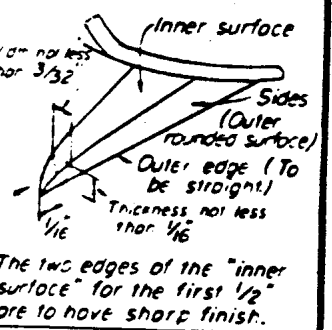
It is most important when acquiring climbers for your use that they be of the proper length, with reference to your knee to instep measurement. To select the proper length of climber, measure from the instep of your climbing boot to 1/2" below the inside low point of the knee joint.

Your climbers are carefully engineered and made to exacting standards. They should (with proper prior measurement) fit your legs comfortably and securely. Care should be taken not to bend the body of the climber either purposely or accidentally. Bending will affect the gaff angle, effective pole penetration, mechanical strength and could contribute to the gaffs cutting out, leading to possible injury.

The correct methods of measuring, sizing and adjusting will be explained and demonstrated by your instructors before you begin the actual practice climbing. A guide to the proper procedure for "Gauging and Sharpening Gaffs on Linemans Climbers" can be found in the Line Construction Standards, Drawing #030884. This drawing is a P G and E Company Standard and must be strictly adhered to. A copy of this drawing is attached and the information on it will be discussed with you by your instructor.



If gaff thickness, width, or profile is incorrect, it shall be filed to proper dimensions. Filing of linemen's climbers requires precise filing and should be assigned to experienced men. A ten inch, smooth hand file, with handle should be used when filing climbers. An emery wheel shall not be used, because it may draw the temper from the gaff. To obtain proper width, sides of gaff shall be filed working from heel to point as shown. Climbers shall never be sharpened to a needlepoint. Inner surface of gaff shall be kept flat and filed only to remove burrs, make point conform with profile of gaff gauge or to obtain proper thickness. Filing should be done carefully, so sides are symmetrical and original shape of gaff is not changed. The gaffs of a pair of climbers shall not differ in length by more than 1/8". Should filing operation necessitate filing either gaff of climbers until it is less than allowable minimum length (1 1/4"), climber shall be re-gaffed or replaced.



- NOTES:**
- PRECAUTIONS** The following precautions shall be observed when storing and using linemen's climbers.
    - In general, climbers shall not be placed in same container with body belts and safety straps. However should this be necessary, care shall be taken to avoid the gaffs cutting or puncturing them.
    - Climbers shall not be worn on work where they are not required, such as on ladders or vehicles, when walking between long spans, over wet, brushy, rocky or snow covered terrain, crossing fences, climbing up or down embankments, trees or steel structures.
    - Exercise caution not to gaff self or fellow worker and avoid gaffing other employee's safety strap.
    - Any variation from the three (3) dimensions shown above and reduction in the leg angle to the pole will lead to cutouts. (The leg angle to the pole should be not less than 30°).
  - These instructions apply to all makes of gaffs that can be measured properly with the Fargo Gauge.
  - In lieu of compliance with these instructions, other gauges may be used if designed particularly for the gaff to be measured. However, gauges other than the Fargo will not be supplied by Company.
  - TREE CLIMBERS** shall be kept in good shape. The gauge as shown here is not adaptable to tree climbers. However, the original shape shall be maintained as nearly as practicable and the principal indicated herein shall be used.

**ADJUSTABLE LINEMEN'S CLIMBERS**

2	5-21-69	Revised notes 2 and 3		4	3-16-75	Removed "Eng Std" from Title Block.	
1	7-27-61	Added notes 2 and 3		3	4-24-73	For filing date.	
CHG	DATE	DESCRIPTION	APPROVED	CHG	DATE	DESCRIPTION	APPROVED

APPROVED *JAC*

By: SP	<p align="center"><b>GAGING AND SHARPENING GAFFS ON LINEMEN'S CLIMBERS</b></p> <p align="center">ELECTRIC OPERATIONS PACIFIC GAS AND ELECTRIC COMPANY SAN FRANCISCO CAL.</p>	SUPERSEDED 025857
DR PGT TR		SUPERSEDED BY
CH HVW		SHEET NO.
O.K. <i>JL</i>		SHEETS
DATE 2-9-54	SCALE	SHEET NO. 030884 SHEETS 4

## MAJOR CAUSES OF CLIMBING CUTOUTS AND FALLS

### 1. Condition of Poles

Prevention: The prevention of climbing accidents due to the condition of the poles can be aided in several ways. For example, give the pole a good thorough inspection, before ascending or descending the pole. Check and test the pole in accordance with Accident Prevention Rule 417 A and B & S.W.P. Make sure the pole is adequately guyed or braced to withstand any change in strain. As a lineman, you should be alert to the hazards mentioned above, and be continually on the lookout for these hazards so you will not cutout or fall.

### 2. Condition on Poles

Prevention: Cutouts and falls resulting from conditions on poles can be eliminated by planning the proper method of construction and building all poles in accordance with the Line Standards and G.O. 95. However, when a lineman finds an unsafe condition on a pole, it should be properly reported and extra precautions taken if the pole must be climbed. Always be alert and use precaution at all times when climbing.

### 3. Clothing

Prevention: The elimination of cutouts and other accidents due to the unsafe conditions of clothing is the responsibility of the lineman himself. However, supervisors and foremen are alert to recognize such hazards and will insist that all employees wear suitable and safe clothing in accordance with the Accident Prevention Rule Book.

### 4. Bad Climbing Practices:

#### A. Specific Causes:

1. Climbing or descending too fast
2. Climbing the low side of the pole
3. Not driving gaffs hard enough in pole
4. Climbing when fatigued
5. Hugging too close to the pole
6. Climbing thru unprotected conductors without caution
7. Climbing without observing the condition of the pole and the placements of the gaffs
8. Aiming gaffs at the pole at an improper angle
9. Body belt too loose
10. Taking too long of steps in climbing or descending poles
11. Not inspecting or checking poles before and while climbing
12. Inattention or watching something else when ascending or descending poles
13. Improper balance of the body weight on gaffs
14. Belting off to a pole in the wrong position
15. Horseplaying around while climbing or showing off
16. Climbing too close to block lines and handline ropes hanging from the pole
17. Catching material thrown from the ground (while working on a pole)
18. Placing climber gaffs on exposed ground wires and receiving electrical shocks

19. Failure to get a good handhold before shifting weight from one hand to the other
20. Climbing by grabbing hold of quarter braces and hardware
21. Climbing in a stiff or mechanical manner
22. Sliding climber gaffs when climbing or sneak climbing

Prevention: Experienced linemen, as well as new apprentices, need to constantly remind themselves about the pitfalls involved in the above unsafe climbing practices. A lineman should watch other linemen and if he notices any bad climbing practices help him to correct them before accidents occur. Remember, a good climber is one that is well trained in the safe methods of climbing and working on poles.

## 5. Climbers

The importance of the climbers themselves in the prevention of cutout accidents cannot be emphasized too strongly. This is the major cause of all climbing cut-outs and falls in the P G and E system.

Prevention: As linemen for P G and E, we often wonder what we can do to prevent those types of accidents that are caused by defective gaffs. Here are two simple rules to follow.

1. Have a rigid and frequent inspection of climbers, leg straps, leg irons, etc., with special attention being given to the gaffs, the shape and sharpness of the gaff points, the proper angle of the gaff with the leg iron.
2. Use the Fargo gaff gauge, because it is simple and easy to use. Minimum lengths of gaffs shall be strictly enforced. Gaff shape and size shall meet the requirements of the Accident Prevention Rule Book on Data Sheet No. 15.

When working as a lineman for P G and E, you should always be aware of the pitfalls that we have mentioned. Remember, only you can prevent these types of climbing accidents. Therefore, it is you who will generally suffer the aches and pains that result in the failure to observe the few simple rules mentioned above. Remember the old slogan "The Life You Save May Be Your Own;" no truer words can be spoken for a lineman.

## SAFE CLIMBING TECHNIQUES

1. Inspect the pole for defects before climbing it.
2. Watch where your gaffs enter the pole and make sure they strike the pole at the proper angle.
3. Take short steps - this provides better balance.
4. Climb and descend the pole slowly and carefully.
5. Secure a proper handhold.
6. Avoid holding your body too straight while climbing or descending.
7. Before changing your position on a pole, give some thought first to what you are going to do.

8. Avoid climbing the underside of the pole, even if it is only slightly tilted.
9. Don't attempt to catch material thrown from the ground while you're working on a pole.
10. Never smoke while climbing.
11. Keep in mind that experienced climbers are more likely to develop unsafe climbing habits than those with less experience.
12. Safety hats.
13. Eye protection - safety glasses or goggles.
14. Gloves - with gauntlets.
15. Body and safety belts.
16. Climbers (properly sharpened and straps).

NOTE: Shirts and jackets worn should be of sufficient weight to resist splinters and creosote. Sleeves shall be rolled down at all times. A good lineman's boot should be worn. Due to the high percentage of working time spent aloft, proper support of the feet and ankles is a must.

#### PROPER GLOVES AND LONG SLEEVE SHIRTS

1. Linemen will always work and climb with long leather gauntlet gloves for the protection of their wrists and hands. This will protect them from wood splinters and sharp objects projecting from poles and crossarms.

When a lineman wears damaged gloves with holes or torn stitching, the chance of obtaining a puncture wound is greatly increased.

Wearing short gauntlet gloves will result in exposed skin which could result in cuts or puncture wounds. This type of glove being worn by a lineman could also result in an electrical shock in the area of exposed skin.

2. Linemen should not wear synthetics or polyester shirts as these are easily ignited in an electrical flash or arc from secondary or primary voltages.

Wearing shirts outside of pants and over a lineman belt can be very dangerous when snapping your safety into a "Dee" ring or could cause you to miss a tool loop when storing hand tools in your belt loops.

Shirts shall be buttoned in the front and shirt sleeves shall be rolled down and buttoned. This will keep the shirt from being entangled in ropes or blocks when working on a pole.

#### PROPER METHODS OF CLIMBING WOOD POLES

##### METHODS TO USE IN ASCENDING A POLE

When ascending the pole, keep the arms and body relaxed with the hips and shoulders. The climber should be at a 30° angle from the pole or the top of the climber should be approximately 8 inches from the pole; in most cases this will put the knee at a comfortable distance from the pole.

Take it easy; favor short steps (step length should be natural for each lineman), use the hands and arms for balance only.

Climb with the legs (do not be tempted to "pull up" with the hands or arms). Let the legs take the initiative over the hands (the legs "push" the hands).

It is necessary that the gaffs be directed toward the center (or heart) of the pole in a natural manner. The size of the pole and the length of leg between hip and knee will determine automatically the amount of gaff separation on the pole.

Beginning climbers tend to climb with their body too far away from the pole causing undue strain on their arms and hands.

Some climbers will have a tendency to hug a pole; this will cause them to not have an effective leg stroke and therefore their hooks will not penetrate the pole deep enough or at the correct angle.

#### METHODS TO USE IN DESCENDING

In descent, the hands are lowered first. Each leg is straightened before lowering. When the straightened leg is "lined up" with the center of the pole and the body weight has been shifted above the gaffs, drop the gaff into the pole.

In descent the leg is not stroked; it is merely lowered into position with the body weight behind it. The hands and arms take the initiative over the feet. The hands "push" the feet, which is opposite from ascending the pole when the feet "push" the hands. Keep shoulders and knees away from the pole. Do not take long steps or try to coast or slide when descending.

In descent the climber gaffs should naturally break out with the outward and lowering movement of the knee.

Removal of the climber when the last step to ground is taken is accomplished by a slight twisting and prying action as in ascending.

#### GRADING OF STUDENTS

Each student will be graded on an individual basis with respect to ability and daily improvement. As can be imagined the intent of the training period is not to produce "Linemen", but merely to give each applicant an opportunity to realize what the work aspects of a lineman are.

During the three day session you will gain some additional experience which will help you to decide whether or not you wish to work towards a lineman's position.

The required project (listed on the daily schedule) is a means by which your instructor can ascertain your potential climbing ability.