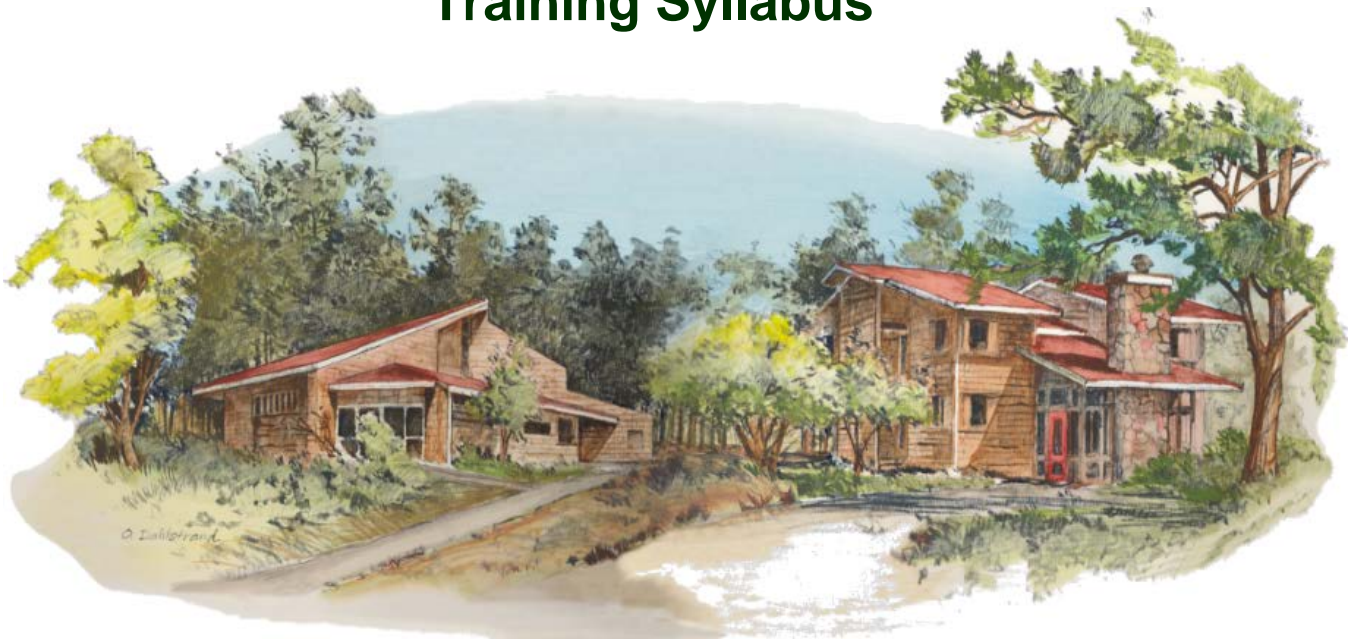


# ADVANCED ELECTRICAL SKILLS

February 12-17, 2017

Training Syllabus



William Penn Mott Jr. Training Center



# Memorandum

**Date:** January 17, 2017

**To:** Supervisor

**From:** Debbie L. Fredricks, Training Section Chief  
Training Section  
California State Parks

**Subject:** Employee Attendance at Formal Training  
Advanced Electrical Skills Group 14

An employee from your office will soon be attending the formal training program described in the attachment. Please ensure that the employee is fully prepared to attend the session and that the groundwork is laid for the employee's implementation of the training upon returning to work. You can assist with capturing the full value of the training by taking the following steps:

### Prior to Training

1. Make sure that **specific** employee needs are identified and, if necessary, called immediately to the attention of the Training Specialist.
2. Review with the employee the reason for the employee's attendance.
3. Review objectives and agenda with the employee.
4. Discuss objectives and performance expected after the training.

### Immediately Following Attendance

1. Discuss what was learned and intended uses of the training.
2. Review the employee's assessment of the training program for its impact at the workplace.
3. Support the employee's use of the training at the work place.

### Three Months Following Training

1. Supervisor evaluates the effectiveness of the training on the employee's job performance and meets with employee to discuss the evaluation.

Thank you for your assistance in seeing that the full benefit of training is realized.



Debbie L. Fredericks  
Training Section Chief

Attachment  
cc: Participant

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***Mission Statement  
Training Section***

***The mission of the Training Section is to improve  
organizational and individual performance and  
productivity through consulting, collaboration, training,  
and development.***

**MOTT TRAINING CENTER STAFF**

Debbie L. Fredricks.....Training Section Chief

Ann D. Slaughter ..... Mott Training Center Manager

Jack Futoran ..... EMS and LFG Training Coordinator

Jeff Beach..... Training Consultant

Dave Galanti ..... Training Consultant

Karyn Lombard ..... Training Consultant

Sara M. Skinner..... Training Consultant

Jason Smith..... Academy Coordinator

Jeremy Alling ..... Cadet Training Officer

Matt Cardinet ..... Cadet Training Officer

Raymund Nanadiego ..... Cadet Training Officer

Lisa Anthony ..... Program Coordinator

Edith Alhambra ..... Assistant Program Coordinator

Alex Franck..... Assistant Program Coordinator

Jessica Kohls..... Assistant Program Coordinator

Pamela Yaeger..... Assistant Program Coordinator

## THE MISSION

*of the California Department of Parks and Recreation is to provide for the health, inspiration and education of the people of California by helping to preserve the state's extraordinary biological diversity, protecting its most valued natural and cultural resources, and creating opportunities for high quality outdoor recreation.*



## FORMAL TRAINING GUIDELINES

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Welcome to formal training, an essential component in your career development.

Since 1969, our Department has been providing a continuously changing number of diverse training programs at its main training facility, the William Penn Mott Jr. Training Center, and other locations including Marconi Conference Center. The Department strives to enhance your learning and job performance with formal training of the highest quality.

Our Department's dedication to training is only one aspect of its commitment to you and to the public. This commitment is costly and represents an important investment in you and your career. You and the Department realize a return on that investment by your positive participation in formal training itself and post training follow-through.

The program you will be participating in is described in this training syllabus, which outlines what you can expect from this training and what is expected of you. This syllabus details what you should do before you leave for training; what to do when you arrive; what you will be doing while in training; and, importantly, what you should be able to do when you return to your work site. Specifically:

1. **SYLLABUS:** The syllabus is now accessible on the Employee Training Management System (ETMS) and on the California State Parks website under the Learning/Training Section. Your copy of this syllabus is an important part of your training experience and should be brought with you to training. Read it before you arrive and review it following the program along with material you received at training.
2. **PRE-TRAINING ASSIGNMENTS:** Your completion of pre-training assignments is essential to the success of your training. You are responsible for all reading assignments in preparation for classroom sessions. Time will be provided during working hours to accomplish any assignments which involve either individual or group efforts and resources.
3. **TRAVEL:** Arrange your travel to and from the training through your District or Office. (No reimbursement for travel expense - including per diem costs - will be approved for travel not specifically authorized in advance by the District)

Superintendent.) Individuals may claim reimbursement for incidental expenses incurred as outlined in DAM 0410.6. The Mott Training Center does not have the capability to provide transportation to/from Monterey airport.

The cost of your travel (airfare, mileage, rental car, etc.) is paid by your District or Office **to** and **from** the location of the training.

4. **HOUSING:** Housing will be assigned to you on a shared-room basis and will be available from 3:00 p.m. on the date of arrival to 12:00 noon on the date of departure. The Department provides your room and board expenses at the Mott Training Center only. No per diem allowance will be authorized for living off-grounds. This does not preclude living off-grounds at your own expense. Advise the Department Training Consultant no later than two weeks before your scheduled arrival if you plan to live off-grounds. No animals are permitted in Asilomar housing. In the event of an emergency, staff must know your room assignment; therefore, you may not switch rooms without staff approval. Overnight guests are not allowed in the buildings unless registered beforehand at the front desk in Asilomar's Administration Building. Quiet hour for lodge living areas is 10:00 p.m.

**Note:** You may be assigned a room at a motel while attending training. If so you may be asked to present a valid credit or debit card while checking in to your room. Many motels require a credit card to cover charges incurred such as telephone calls, damages to rooms and/or furnishings, fees to clean rooms that have been smoked in that are not designated as smoking rooms, etc. Be prepared to handle this appropriately.

5. **ENROLLMENT OR HOUSING CANCELLATION POLICY:** To cancel participation in a course, the participant must have their District Superintendent or Section/Office Manager send an email to the Training Consultant assigned to the course requesting to remove the participant. If you do not need lodging or must change or cancel your reservation for lodging, you must contact the Mott Training Center or Training Consultant assigned to the course at least 2 weeks prior to your date of arrival. Lodging, registration, and associated fees will be charged to the employee's District or Section/Office if a training cancellation is received with less than two weeks' notice.

**The Training Section is committed to ensuring that the reservation that has been made for you is accurate and needed.**

6. **OFF-GROUNDS ACCOMMODATIONS:** When authorized to stay off-grounds by the Department Training Consultant, the Mott Training Center will absorb the cost of your room and meals at the current CSP Asilomar rate. If you stay off-grounds and have meals on grounds, the Mott Training Center will authorize only what the Department pays Asilomar for lodging.

7. MEALS: Meals will be provided, semi-cafeteria style, from dinner on the date of arrival through lunch on the date of departure. Meals will be served at 7:15 a.m. for breakfast, 12:00 noon for lunch, and 6:00 p.m. for dinner. Hot or box lunches may be provided on some days. If you require a special diet, contact the Training Specialist Jeff Beach to request the Asilomar Dietary Restriction form no later than two weeks prior to the course start date. The Training Specialist will forward the form to the appropriate Asilomar Conference Grounds staff.

In order to assist participants with limited mobility, Asilomar provides a shuttle to and from the dining hall. Contact either Asilomar staff upon check-in, or Mott Training Center staff upon your arrival, for instructions on arranging a transport.

8. CLOTHING: Field uniforms as found in "Description of Required Field Uniforms", DOM Chapter 2300, Uniform Handbooks, will be worn daily by all uniformed employees during formal training sessions **unless otherwise specified in the Program Attendance Checklist**. Non-uniformed employees shall wear apparel normally worn on the job. Appropriate attire includes apparel suitable for professional office dress. It does not include such items as shorts, t-shirts, tank tops, or sandals.

Because we are on the conference grounds with many other groups, and the image we project as State Park employees is important not only during working hours but off duty hours as well, your informal sportswear should be appropriate.

9. ROOM SAFES: Two safes have been installed in each of the lodge rooms used by the Mott Training Center (Live Oak, Tree Tops, and Deer Lodge). These safes are a type that allows the user to input their own combination of numbers to facilitate opening and closing. The Mott Training Center has a master key for emergency entry. Safes are to be left in the open position when checking out of your room.
10. WEAPONS: Weapons are permitted in rooms under the following conditions. Authorized firearms and magazines stored while at the Mott Training Center shall be in a safe condition and stored in one of the following locations: your room safe in Live Oak, Tree Tops, or Deer Lodge, one of the Mott Training Center's safes in the Whitehead Room or secured in your vehicle.
11. ALCOHOLIC BEVERAGES: Participants shall not possess or consume alcoholic beverages in common areas (living room) while on the Asilomar Conference Grounds unless provided and hosted by Concessionaire ARAMARK.
12. SMOKING: Smoking is not permitted in the Mott Training Center or in any lodge or guest room on the Asilomar Conference Grounds.
13. TRAINING CENTER: The Mott Training Center is located on Asilomar Conference Grounds, part of Asilomar State Beach. The Conference Grounds are operated for our Department by a concessionaire, and all lodging and food services are provided to us by employees of the concessionaire. Constant efforts are made to maintain a sound, harmonious working relationship between the

Department and concessionaire. None of us can expect preferential treatment for any reason and, as a departmental employee you will be expected to join in our continuing effort toward an effective relationship with each Asilomar concession staff member. On occasion, non-departmental groups may be staying in the same lodges. It is imperative that you represent the Department well on and off duty.

14. **REGISTRATION:** When you arrive at Asilomar Conference Grounds, proceed directly to the front desk at the Asilomar Administration Building for your room key and dining room ticket. If you require vegetarian meals, notify the front desk representative and your meal ticket will be marked accordingly.
15. **COURSE LEADERS:** The formal training you will attend is developed and, for the most part, conducted by experienced State Park employees in field and staff positions. Some courses will be conducted by qualified instructors from other agencies and educational institutions. Your course leaders have proven their ability and knowledge in their profession, and provide a level of expertise difficult to match.
16. **TRAINING SECTION STAFF:** Jeff Beach is your Training Specialist and has been assigned the responsibility for your training group. That staff member usually serves as a Course Leader as well as a Coordinator. During the program, you may be asked to assist Training Section Staff in the logistics of your training program (organizing field trip transportation, supervising classroom breaks, etc.). Training Section Staff will do all within their power to make your training experience pleasant and meaningful.
17. **TRAINING MATERIALS:** May be made available to you at both your unit and the Mott Training Center. Handout materials issued at your unit should be brought to training for possible use. A conference binder or notebook will be issued to you at the training session for note taking and convenience in handling materials. Bring your own pens and pencils.
18. **ATTENDANCE:** Regular attendance is a critical course requirement and your participation is important to the success of this training. An absence of more than 10% of the course hours constitutes grounds for dropping a participant from the course. The Department Training Consultant may modify this requirement based upon participant knowledge level and/or the portion of the course missed. All absences, except those of an emergency nature, must be approved in advance by the Training Consultant.
19. **VEHICLES:** All vehicles should be parked in the lots adjacent to the Mott Training Center. Any questions regarding use of a State vehicle while at the Mott Training Center should be discussed with your supervisor prior to your departure for training, or with your Program Coordinator while at the Mott Training Center.
20. **BICYCLES:** If you bring your bicycle, store it in the bicycle shed next to the Mott Training Center (acquire combo from the staff). Bicycles shall not be brought into any building nor chained to lamp posts, trees, etc.

21. MAIL: Mail forwarded to you during your time at the Center should be addressed to you in care of:

California State Parks  
WILLIAM PENN MOTT JR. TRAINING CENTER  
PO Box 699, Pacific Grove, CA 93950

22. CELL PHONES: As a courtesy to your fellow participants and course leaders ensure that your cell phone is turned off during classes. Participants should not receive or make cell phone calls during class time. Limit those calls to your breaks.
23. FAX: The Mott Training Center's FAX number is (831) 649-2824.
24. TELEPHONE: Limit phone calls during classroom hours to urgent business or emergencies. Anyone wishing to contact you by telephone during working hours should call the Center at (831) 649-2954. Calls after 5:00 p.m. or during weekends should be made to (831) 372-8016, Asilomar Conference Grounds, and the caller should tell the switchboard operator you are with a California State Parks training group. **Note: There are no longer pay telephones outside of the Mott Training Center. There are pay telephones located at the Asilomar Administration Building.**
25. LAUNDRY AND DRY CLEANING: May be taken care of by you at one of several local establishments.
26. RECREATION: Facilities available on grounds include a heated swimming pool, pool tables, and a volleyball court. The Monterey area offers horseback riding, golf, tennis, racquetball, deep sea fishing, and many historical landmarks and scenic sights to explore.
27. POST-TRAINING ASSIGNMENTS: In connection with formal training are to be completed under the direction of your supervisor.
28. COFFEE BREAK REFRESHMENTS: Will be available throughout each session. You will be asked to contribute to the "Hospitality Fund" to defray expenses. Bring your own coffee cup.



## PROGRAM ATTENDANCE CHECKLIST

To assist you in your preparation for formal training session at the William Penn Mott Jr. Training Center the following list is provided:

1. Read and understand the Advanced Electrical Skills Program Syllabus prior to your arrival at the Training Center.
2. Complete the following pre-training assignment.
  - Discuss the Advanced Electrical Skills program with your supervisor. What specific changes in your abilities and performance are expected to result from attending this training?
  - Review all materials received in Basic and Intermediate Electrical classes.

**NOTE:** Completion of the pre-training assignment is mandatory and with personal protection equipment will count for 20% of your program grade. If you have questions or need help, call the Program Coordinator, Jeff Beach at (831) 901-5864 or email [Jeffrey.Beach@parks.ca.gov](mailto:Jeffrey.Beach@parks.ca.gov).

3. Remember to bring the following with you to training:
  - Program syllabus.
  - Ugly's Electrical Reference Booklet* (2014 edition). If you don't have one, contact Jeff.
  - Personal protection equipment (head, eye and ear protection + **leather** gloves).
  - Coveralls or appropriate work clothing.
  - In case of inclement weather, bring serviceable rain gear.
  - Proper field uniform. See uniform handbook and note in formal training guidelines 8.
  - If available, bring digital multimeter.
  - Calculator
  - Coffee cup, alarm clock, pens, pencils.

## **POST-TRAINING ASSIGNMENT**

Prior to ninety days after the completion of this program, the employee and his/her supervisor should discuss the impact and assess the effectiveness this program has had on the employee.

The post-training evaluation process is intended to provide a bridge between classroom instruction and the on-the-job application of training. The information obtained through this process will assist the employee, supervisor, and Training Section in providing a return on the training investment to the Department.

**ADVANCED ELECTRICAL SKILLS GROUP 14 – A G E N D A**  
**February 12-17, 2017**

Lead Instructor: Lawrence Ross  
Assistant Program Coordinators: Kevin Mathews, Angel Alba  
Ernie Rivas, and Orvel Black

**Special Notice:** This program will be conducted at the Mott Training Center Shop Annex, 2211 Garden Road, Building C, Monterey, California. Vans are available to transport you to and from the Shop Annex and will leave the Mott Training Center promptly at 0800 daily and return by 1700.

**Sunday**  
**February 12**

1500	REGISTRATION: <i>Check in at the Asilomar Registration Building</i>	All
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**Monday**  
**February 13**

0830-0930	Orientation	Beach
0930-1200	Electrical Review: Basic and Intermediate Practices	Ross
1200-1300	Lunch	
1300-1500	Power Distribution, Controls and Codes	Ross
1500-1630	Transformers: Practical Applications and Codes	Ross

**Tuesday**  
**February 14**

0830-1000	Motors: Practical Applications	Mathews
1000-1200	Safety, Project Reviews, Task Hazard Analysis, Tool Check	All
1200-1300	Lunch	
1300-1600	Shop Projects	All
1600-1630	Troubleshooting	All

**Wednesday**  
**February 15**

0830-0900	Troubleshooting	All
0900-1200	Shop Projects	All
1200-1300	Lunch	
1300-1600	Shop Projects	All
1600-1630	Troubleshooting	All

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**Thursday**

**February 16**

0830-0900	Troubleshooting	All
0900-1200	Shop Projects	All
1200-1300	Lunch	
1300-1600	Shop Projects	All
1600-1630	Review and Questions	Ross

**Friday**

**February 17**

0830-0900	Equipment Check-in and Cleanup	All
0900-1000	Sustainability; Good Practices and Technology	All
1000-1100	Final Examination	Ross
1100-1130	Exam Review	Ross
1130-1200	Program Summary and Evaluation	Beach
1200	Lunch and Depart	

**PROGRAM: ADVANCED ELECTRICAL SKILLS**

**36 HOURS**

PROGRAM OUTLINE

	<u>Total Hours</u>
<u>PROGRAM ORIENTATION AND OVERVIEW</u> .....	1.0
<u>ELECTRICAL SYSTEMS</u> .....	6.0
Residential 110/220 Volt System Review.....	
Commercial Wiring Codes .....	
Poly Phase Circuits .....	
Circuit Design.....	
<u>ELECTRICAL WIRING</u> .....	20.0
Tools .....	
Materials.....	
Commercial Wiring Techniques .....	
Motors, Motor Controls and Transformers .....	
DC Circuits .....	
Troubleshooting .....	
Practical Performance Evaluation .....	
<u>RELATED SUBJECTS</u> .....	8.5
Safety .....	
Inspections and Preventative Maintenance.....	
Examinations.....	
Material Storage and Clean-up .....	
<u>PROGRAM EVALUATION</u> .....	<u>0.5</u>
	Total Hours 36.0

## **ADVANCED ELECTRICAL SKILLS**

### **PROGRAM ORIENTATION**

Purpose: Participants will meet one another and the program coordinator and facilitator. The group will share expectations for the training program. In addition, program content will be reviewed.

Performance Objectives: By the close of the session the participant will

1. Review program content, procedure and evaluation processes.
2. Share and record expectations with the group participants.
3. Adhere to all Training Center guidelines.

### **DEVELOPING ELECTRICAL SYSTEMS**

Purpose: Develop the participant's ability to plan and construct single and poly phase commercial electrical systems.

Performance Objectives: By the close of the session the participant will

1. Demonstrate knowledge and understanding of the National Electric Code, California Administrative Code and Cal OSHA requirements for public use buildings, shops and other industrial or commercial electrical installations.
2. Identify single phase, 3 phase WYE, and 3 phase Delta electrical systems.
3. Demonstrate ability to design and construct single and poly phase electrical systems.

### **WIRING COMMERCIAL ELECTRICAL SYSTEMS**

Purpose: Provide participants with a working knowledge of single, poly phase electrical systems, and system components.

Performance Objectives: By the close of the session the participant will

1. Recognize and maintain phasing in 3 phase systems.
2. Identify panels, breakers, motor starters and different wire sizes associated with single and poly phase systems.
3. Layout and install feeder and control circuitry.

## **ELECTRICAL SYSTEMS INSPECTION**

Purpose: Provide the participant with the knowledge and skills required to inspect and perform periodic preventative maintenance on single and poly phase electrical systems and system components.

Performance Objectives: By the close of the session the participant will

1. Identify voltage and amperage of systems and components.
2. Inspect for worn contacts, corrosion, loose connections and broken components.
3. Manually test control circuits to verify proper operation.
4. Check for power quality in single and 3 phase systems.

## **ELECTRICAL SYSTEMS TROUBLESHOOTING**

Purpose: The participant will develop the ability to troubleshoot common problems in single, poly phase electrical systems, and system components.

Performance Objectives: By the close of the session the participant will

1. Demonstrate the operation of systems and components to verify order of functions (logical progression).
2. Identify a problem by listening to the operator of the equipment (what the equipment is or is not doing).
3. Review what will occur when various components of a system do not function.

## **MOTORS AND MOTOR CONTROLS**

Purpose: Upon completion of this course, participants will have a working knowledge of the operation and maintenance of common types of motor control equipment.

Performance Objectives: By the close of the session the participant will

1. Demonstrate how electric motors function and be familiar with the components of electric motors.
2. List the maintenance required for longevity and efficient operation of motors.
3. Restate the function and operation of motor controls.
4. Recognize the skills needed for troubleshooting and maintaining existing equipment and electrical systems.

## **RELATED TOPICS**

Purpose: To develop an understanding of test equipment, specialty circuits and devices that the Park Maintenance Worker may be required to use and or repair.

Performance Objectives: By the close of the session the participant will

1. Employ a working knowledge of electrical test equipment commonly used in the electrical trade.
2. Demonstrate a basic understanding of telephone and network wiring systems and alarm systems.