

10 March 1966

Mr. Geoffrey Fairfax
Box 2780 - Oceanic Properties
Honolulu 3, Hawaii

Re: Surf Lighting at Sea Ranch; Final Report

Dear Geoff:

Immediately following a test demonstration of surf lighting - on 20 October of last year - undertaken by representatives of P. G. & E and General Electric, I sent you a preliminary report (dated 26 October 1965) of lighting of the surf west of the store/restaurant. I delayed sending a final report pending the receipt of comments (frequently promised) from the P. G. & E representative; however, I have received nothing but conversation from them so I have decided to wait no longer. This constitutes my final report.

Since there is little point in repeating what has already been written (on 26 October), the preliminary report should be considered as a part of this report.

Observations made originally, followed by subsequent observations, suggests that the primary efforts should be in the cove immediately west of the barn. The surf is better there (there is often little or no surf between Bihler's Point and the condominium) and there is no (or little) chance of creating a nuisance for the condominium owners. Further, because I believe the nuisance hazard to be so great, I do not recommend any lighting at all south of Bihler's Point.

The primary problems in achieving good results are:

- a.) To light the surf and only the surf; (any spill onto the rocks tends to "flatten" the rocks and make them seem relatively bright - and, because of the high percentage of lichens and serpentine, produces a sickly blue-green color.)
- b.) Avoid "halation" - (i. e. illumination of foreground mist) as much as possible.

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- c.) Concentrate the light in a beam with a broad horizontal spread but with a minimal vertical spread.
- d.) Keep maintenance and operating costs as low as possible.

The first three of the above are not nearly as well satisfied by the GE L-69A incandescent narrow beam flood used in tests as they would be by the use of GE QF-1500A quartz flood, also narrow beam. The former beam is 25° horizontally by 22° vertically; the latter is 120° horizontally by 15° vertically. Three such flood lights would, in my estimation, produce an effect far superior to six of the L-69's.

Halation can be avoided most easily by siting the lamps at least 15 feet below the cliff edge. Reasonably easily accessible ledges exist so it should be possible to provide good locations and not too difficult maintenance. The characteristics of the QF-1500A flood are such that an even lower location might be feasible, although I doubt much would be gained. In any case, a location, 15 feet down should not only keep the illumination of foreground mist within acceptable limits, but would also get the fixtures well out of one's daytime vision from virtually any point.

The recommended lamp will produce close to minimum operating costs, but the maintenance problem, in such an exposed location, is bound to be severe. Care will have to be taken to paint all ferrous materials very well, and to isolate them from aluminum. The aluminums will have to be carefully selected corrosion resistant alloys or will have to be painted or otherwise treated also.

In preparing this final report I consulted with our electrical engineer, Mr. Edward Shinn, who has submitted a preliminary cost analysis, a copy of which is enclosed. I concur with his recommendation that, if the project is to go ahead, the reserve of an additional three 1500W fixtures be allowed for and that service be provided to the barn. (The present flashlight or pick up headlight system must be a real nuisance). With service to the barn minor path lights could be added easily as they might be required.

Summary:

The basic issue still is - what degree of artificiality is tolerable - or is appropriate - at The Sea Ranch. I would argue that artificial "aids" should be kept to a minimum and that the surf lighting is not only unnecessary but undesirable. However, if it is felt that it must be done, then the recommendations above should be followed as a guide as to how to do it. Even so, I would argue to delay any such project until plans

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for the Lodge are more fully developed. At that time it might be revealed that other locations are preferable and in addition, that service from the Lodge itself may be far cheaper.

If there are any questions, or anything I may add, please call on me.

Sincerely,

Joseph Esherick

JE/jp