

It was then after lighting-up time and the whole apparatus was at work—the engine, the lighthouse, the radio beacon (we could hear the resonant signal from the next room), the generators, and the anemometer, this hard-worked instrument scribbling with its three self-inking pens (two for wind direction, one for volume) the whole twenty-four hours of the day.

The wind was blowing hard as we bullied our way across to the lighthouse, outside the plantation belt. The sun was setting over toward Nelson and the sea had gone the colours of petrol on asphalt. The "Tamahine" was pushing in and the coastal steamer "Tiroa" was slipping quietly past the heads as we went into the base of the lighthouse tower.

This tower is somewhat unusual in design. Many New Zealand lighthouse towers have been constructed with iron, being made at foundries such as Chas. Judd's in Thames, or Luke Brothers' in Wellington. But Baring Head has 40 ft. of reinforced concrete (2 tons of reinforcement, 45 cubic yards of concrete), buttressed by six flanges, which make it look as solid as Gibraltar Rock. Its erection was undertaken by the Public Works Department, supervised by the Marine Engineer. In profile the tower differs from the usual, the balcony being kept as small as possible. A short steel ladder from the first landing gives the keeper access to the balcony from the outside and enables him to clean the transparent panes. There are forty-two in all, but those toward the land are whitewashed. The lantern itself came originally from Cape Egmont and many of the prisms are clipped from long service and transportation.

No better scene for a murder novel or a thriller film was ever described by Ngaio Marsh or photographed by Hitchcock. Above us, as we began to climb the tower, was the lantern obscured by the landings, but fitfully flashing, making long shadows wax and wane on the white-washed lower walls. Outside (through latticed rectangular windows), the wind washing the steep walls and the light falling intermittently on the grass; inside, the runged steel ladder, glistening with oil; now at the first landing;

now at the lantern, and a sudden blinding flash from the lens as the light comes to a peak—then fading—then blinding again—far out to sea the flicker of other lighthouses, as though in response. To us, strange to the lighthouse routine, it was so eerie and fascinating, the regular recurrence of that brightness, that signal reaching through the dark like a quick dawn, that for a moment or two we forgot our job.

It looks quite simple, the lantern of a modern lighthouse—two big globes ("1,000 watts each," said Mr. Wylie), the reserve one canted over, and the other set at the focal centre of a 7 ft. wide bull's-eye lantern, and if one burns out (they hardly ever do) before its one thousand hours are up, the reserve comes up automatically and the alarm bell rings. Quite simple. But behind that delicate mechanism, and the design of those prisms and lenses, was a century of research and invention.

"Second order dioptric," says the "Nautical Almanac." That means that the lens has a focal distance of 700 mm., while the light diverging from the white-hot filament is caught by the upper and lower sets of prisms and is reflected back so that all rays emerge from the main lens in a narrow band, thus increasing their power and range. Above the lantern is a ventilated double-shelled copper dome, topped by a weather cock and a lightning conductor—below it an iron grill you can walk on. Outside the lantern (whose glass panes have to be cleaned of salt spray and dust every day) is a balcony where sometimes the birds fall after stunning themselves against the glass. If birds or stones smash the panes, as they do occasionally, there are storm panes handy which can be screwed in until the glazier can come and make a permanent job. That's all there is to this modern lighthouse—no sign of wave-pounded rock, spiral staircase, rocket gun, or lighthouse-keeper's daughters.

We asked Mr. Wylie about the famous Dalem sun-valve used as an automatic controlling device in modern lighthouses. The sun-valve starts the light at sunset and stops it at dawn by the effect of sunlight on two bulbs filled with ether, one black and the other transparent.