exhaust steam and gases of combustion. The tunnel is now as clean and well lighted as a city street, and the air is as pure as the St. Clair River air. Air brakes can now be used on all trains. With the steam service hand brakes had to be used on freight trains. Had the air brakes been used a break-intwo in the tunnel would have held the engine in the tunnel beyond the danger limit. Fortunately no accident ever occurred to a passenger train during the eighteen years of steam service. There have been of course numerous break-in-twos and occasional derailments with freight trains, some of which accidents were accompanied with results that gave the tunnel a sinister reputation. With the electric service the tunnel trip is a safe and comfortable one. Moreover, the elimination of the exhaust steam and the corroding fumes has done away with what was a source of depreciation on the passenger rolling stock. A further saving in operation has been effected, due to the fact that the electric locomotives are less severe on the rails than the steam locomotives were.

The fuel bills for the locomotives during the last six months of steam service averaged \$4,956.00 per month. The fuel bill for the first six months of the electric service averaged \$1,152.60 per month. Hard coal costing \$6.00 per ton was used on the steam locomotives, bituminous coal costing \$2.00 per ton is used in the tunnel power station. The maintenance of the steam locomotives averaged 13.6 cents per locomotive mile. The maintenance of the electric locomotives during the first six months of service was 4.3 cents per locomotive mile. There has been a fifteen per cent. reduction in the total wages paid to locomotive crews and 23 per cent. reduction in the total wages paid to train crews. The first six months of electric operation shows a 44 per cent. reduction on the cost of steam operation.

The electric locomotives have handled the entire tunnel service since May 17th, 1908, prior to which date there were two months of 18 hours per day electric service and prior to which period there was some preliminary electric operation. The transition period occupied about ten weeks, continuous electric service not being inaugurated until the men and equipment were thoroughly seasoned. Gradual transition was of course but common prudence, as the results have abundantly proved. The change-over was made with practically no interference to traffic, and the new service has been a success from the start. But each of the five original locomotives has made more than 23,000 miles. The wear on the gears is inappreciable, and the pinions, from present indications, will each make 50,000 miles. Main motor brushes are making 15,000 miles and the pantagraph shoes average 2,000, some have made 3,400 miles. The life of the brake shoes has been quite variable, however. The original shoes made from 5,000 to 6,000 miles.