(3pts) Problem 26

According to a somewhat dubious product advertisement, a particular walkie-talkie has a transmit power of 500 W. When used with a 9.6 volt battery, which has a capacity of 900 mAh, how long would you be able to talk? Assume that battery can maintain its voltage rating until the last Coulomb of charge has been delivered. Express your answer in seconds.

$P_T = 500\ W$

$V_B = 9.6\ V$

$900\ mAh = .9\ Ah$

$P = IV$

$I = \frac{P}{V} = \frac{500}{9.6} = 52.08\ A$

$t = \frac{.9\ Ah}{52.08\ A} \approx 0.017\ h \times 3600 = \boxed{62.21\ sec}$