Knowing that *Montgomery's* lifespan fits the negative binomial distribution and considering that the number of the weeks of *Montgomery's* being hit as the number of "successes" (r) and his lifespan as the number of the total trials (X) in the negative binomial distribution, we could calculate the probability that Montgomery will survive for another 2 years (104 weeks) if he has 1 and 9 lives left respectively.

According to the probability mass function derived:

$$P(\text{having k trials until r successes}) = \binom{\mathrm{k-1}}{\mathrm{r-1}} p^{r-1}(1-p)^{k-r} \cdot p = \binom{\mathrm{k-1}}{\mathrm{r-1}} p^{r}(1-p)^{k-r},$$

the probability of surviving for another 104 weeks if he has 1 life should be:

$$P(\text{having 104 trials until 1 successe}) = \binom{104-1}{1-1}\left(\frac{1}{20}\right)^1\left(1-\frac{1}{20}\right)^{104-1} \approx 0.0002538,$$

and the probability of surviving for another 104 weeks id he has 9 lives should be:

$$P(\text{having 104 trials until 9 successe}) = \binom{104-1}{9-1}\left(\frac{1}{20}\right)^9\left(1-\frac{1}{20}\right)^{104-9} \approx 0.003553.$$