Method for determining parameters of mobile firefighting unit operator involves applying a test stimulus on the operator with a priori specified value and measuring the time parameters of the signal characterizing the operator's response to this test stimulus. Wherein, one of these time parameters is equal to the time interval of the signal's appearance characterizing the operator's response to the test stimulus. The test stimulus on the operator is generated in the form of a signal described by the Heaviside function, after which the time intervals equal to the time of reaching two different a priori specified values of the signal characterizing the operator's response to the test stimulus are measured, and the parameters of the mobile firefighting unit operator are determined as the time of the signal's appearance characterizing the operator's response to the test stimulus, and using the expressions:

$$K_1 = \left| (t_1 - \tau_0) x_2^2 - (t_2 - \tau_0) x_1^2 \right| \left[2A \left[(t_1 - \tau_0) x_2 - (t_2 - \tau_0) x_1 \right] \right]^{-1};$$

$$\tau_1 = (t_1 - \tau_0) \left[x_1 (K_1 A)^{-1} \left[1 + 0{,}5 x_1 (K_1 A)^{-1} \right] \right]^{-1} = (t_2 - \tau_0) \left[x_2 (K_1 A)^{-1} \left[1 + 0{,}5 x_2 (K_1 A)^{-1} \right] \right]^{-1},$$

where τ_0 is the time of the signal's appearance characterizing the operator's response to the test stimulus - the delay time; A is the a priori specified value of the test stimulus; t_1, t_2 are the time intervals equal to the time intervals for reaching the a priori specified values x, та x_2, respectively, of the signal characterizing the operator's response to the test stimulus; K_1, τ_0 are the operator's parameters - the transfer constant and the time constant.