The invention relates to rocket engineering and can be used for testing ballistic rockets. A method for experimental verification of characteristics of a rocket at flight tests is in launching a rocket from a launch unit. At that the rocket with operating engine is kept on the launching device till burning out part of fuel with following link disconnection between the rocket and the launching device, with provision of motion of the rocket at fuel reserves to distance restricted by conditions of the testing range. The method makes it possible to verify experimentally characteristics of the rocket at flight tests under condition of restricted dimensions of testing ranges in length, this is specific for densely populated territory of states that have no possibility to carry out rocket testing to long ranges.