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# THE EVOLUTION AND INNOVATION OF THE ASTRONAUT SELECTION PROCESS OVER TIME

## Abstract

Since the first man to space, many astronaut training programs underwent improvement to meet current needs and limitations. The astronaut's selection process is relatively infrequent due to the many applicants and low acceptance rate. Initially, personnel with a military background were preferred compared with others as the military training and expertise prepare an individual to work in an operational scenario with similarities of that in space. More recently, crewed missions focus on research and experiments in space that requires candidates to have a wider variety of skills. Therefore, astronaut selection becomes progressively more inclusive of scientists. This paper explores trends in various aspects of the astronaut training program over time. The goal is to highlight significant differences in training methods by reviewing published literature on topics not limited to astronaut training, training tools, equipment, and technological advancements. The intent is to anticipate strategies for future missions. Mission-specific training can vary from months to years; however, recent progress and encouragement of private agencies have helped make the training program more cost-effective, safer, and optimal time taking. Also, new technologies, such as artificial intelligence and virtual reality, have enabled astronauts to dive deep into the training and experience it more pragmatically. For example, Space X Dragon capsule's simplicity reduced the astronauts' workload and successfully laid the path for future crewed missions. Please, note that the present abstract is submitted under the Space Generation Advisory Council's auspices as part of the Space Exploration Project Group's research.

Keywords: astronaut training, astronaut selection, SpaceX Dragon, virtual reality