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NEW OBSERVATIONS ON REACTION-PROPELLED MANNED AIRCRAFT CONCEPTS, CA.
1670-1900, A SURVEY: PART 1 (1670-1869)**Abstract**

Konstantin Tsiolkovsky, Robert H. Goddard, Hermann Oberth, and Robert Esnault-Pelterie are deservedly renowned names in the history of astronautics; they developed, from the late 19th and early 20th centuries, among the earliest known concepts of rocket-propelled unmanned and manned spacecraft.

However, there is a gap in the literature of the history of rocketry and technology in general, on the history of the one of the most significant applications of the rocket—its potential use in propelling aircraft—that may be considered precursors to the earliest concepts of unmanned and manned spacecraft.

Previous IAC papers, such as Ramon Carreras' 1971 paper on the 1872 concept of a rocket-propelled aircraft by the Spaniard Frederico Gomez Arias, and other works such as Jules Duhem's 1959 *Histoire des Origines du vol à Réaction* (History of the Origins of Reactive Flight), provide insight into early concepts and experiments towards reactive flight, but many other pioneers in this area have come to light since these works were prepared.

This paper draws material from the work of Carreras, Duhem and others, as well as other sources not previously fully examined, especially patents, presenting several hitherto unknown pioneers of reactive flight. Included in this survey are the concepts of Honoré Fabry (1670), James Nye (1852), Konstantin Konstantinov (1856), and several more..

This survey, while not intended to be definitive, does include the most significant pioneers and others that are of unique interest. Part 2 of the survey will be presented in a future paper and will cover later pioneers from 1870 to 1900, as well as providing an overall conclusion.