Supersonic Thrust Vector Control for Jet Engines Using Staggered Flaps

Tech ID: 25977 / UC Case 2016-824-0

ABSTRACT

Researchers at the University of California, Davis have developed a novel mechanism for vectoring the thrust of supersonic, air-breathing jet engines for aircraft applications.

FULL DESCRIPTION

Since the late 1930s, jet engines have become ubiquitous in the aviation industry with turbojet and mixed-flow turbofan engines seeing particular use in highly maneuverable military aircraft. The application of turbojet engines for military use has further supported the development to vector aircraft engine thrust, providing advantages to aircraft that would be otherwise unavailable.

Researchers at the University of California, Davis have developed a novel mechanism for vectoring the thrust of supersonic, air-breathing engines. The mechanism uses two asymmetrically staggered ramps; one placed at the throat of the engine nozzle, the other positioned at the exit lip of the nozzle. Thrust vector control (TVC) provides several advantages, such as increased lift and maneuverability.

APPLICATIONS

- Supersonic, air-breathing engines

FEATURES/BENEFITS

- Lower external profile
- Increased maneuverability
- Increased lift

PATENT STATUS

Country	Type	Number	Dated	Case
United States Of America	Published Application	20190195169	06/27/2019	2016-824

CONTACT

Michael M. Mueller

mmmueller@ucdavis.edu

tel: .



INVENTORS

- Davis, Roger L.
- Montes, Carlos F.

OTHER INFORMATION

KEYWORDS

Thrust vector, nozzle, supersonic, flap, sonic skewing, jet engine, aircraft

CATEGORIZED AS

- **Engineering**
  - Engineering
  - Other
- **Security and Defense**
  - Other
- **Transportation**
  - Aerospace
  - Other

RELATED CASES

2016-824-0

University of California, Davis
Technology Transfer Office
1 Shields Avenue, Mrak Hall 4th Floor,
Davis,CA 95616

Tel: 530.754.8649
techtransfer@ucdavis.edu
https://research.ucdavis.edu/technology-transfer/
Fax: 530.754.7620

© 2016 - 2019, The Regents of the University of California
Terms of use
Privacy Notice