

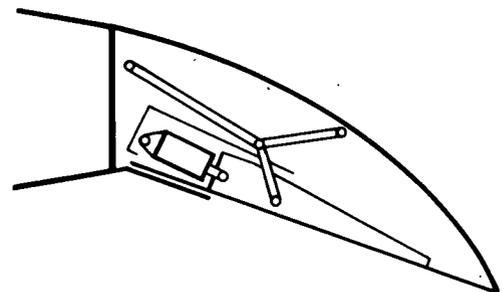
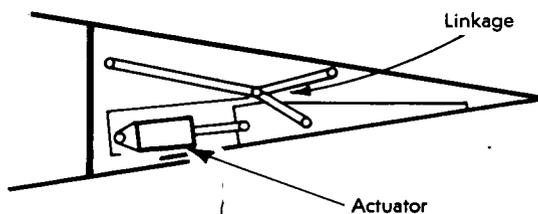
NASA TECH BRIEF

Ames Research Center



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Flex Flap



The problem:

To provide a flap with a large upper surface radius as required for airplanes with over-the-wing blowing.

The solution:

Distort the upper surface of the flap by an actuator.

How it's done:

The bottom stainless steel skin of the flap is allowed to telescope nearly undistorted into a channel as the upper skin is pulled forward and down by an actuator. As indicated in the diagrams, the pulled-down shape of the upper skin is controlled by linkages or other devices, as well as the elasticity of the metal; it may be necessary to fasten radius rods to the upper skin in order to ensure that the convex shape cannot be altered excessively by air loads or other stresses.

Although the flex flap concept is presented as a technique for achieving the extraordinary curvatures needed for blown wing structures, the flap can be used as a control surface at leading as well as trailing edges and, with minor modification, as a variant of the Jacobs-Hurkamp air flap (for STOL).

Note:

Requests for further information may be directed to:

Technology Utilization Officer
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Moffett Field, California 94035
Reference: TSP 73-10502

Patent status:

Inquiries concerning rights for the commercial use of this invention should be addressed to:

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