

Configuration Factors

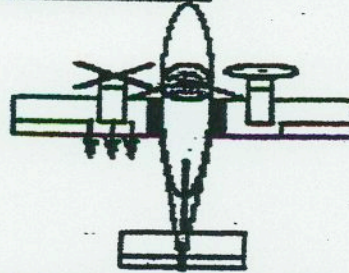
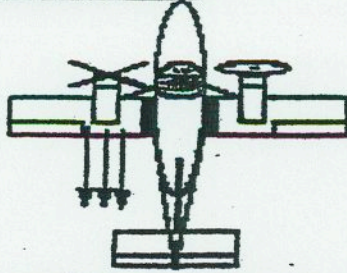
INCREASES V_{mc}

DECREASES V_{mc}

Propeller Condition

Windmilling Prop-

Feathered Prop-



-Increased drag - 1) Air stream turns prop against the engine, 2) Prop acts like a solid disk.

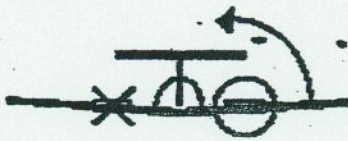
-Decreased drag- Prop stops turning and blades have almost 0 degrees A.O.A. into airplanes R.W.

WINDMILLING PROPELLER (worst case)

Gear Condition

Gear Up- Less lateral stability

Gear Down- Increased lateral stability due to Keel effect. Gear acts like a keel on a boat.



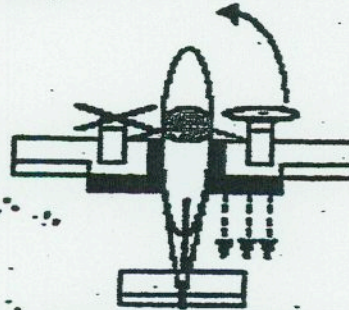
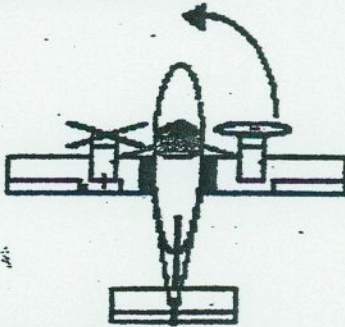
-Decreased roll tendency.

GEAR UP (worst case)

Flap Condition

Flaps at 0 Degrees- Less longitudinal stability.

Flaps Down- Increased longitudinal stability



-P-factor is greater
-increased yaw.

-Increased parasite drag, good engine
-Decreased P-factor
-Decreased yaw.

FLAPS AT 0 DEGREES (worst case)

Degrees of Bank

0 Degrees of Bank-

5 Degrees of Bank-(into good engine)

-Airplane flies in a side slip
-Increased form drag
-Decreased rudder effectiveness due to "blanket effect"

-HCl helps to relieve rudder pressure
-increased rudder effectiveness
-Decreased form drag
-Airplanes longitudinal axis is more parallel into R.W.

MAXIMUM 5 DEGREES OF BANK (not worst case)

Coordination

Airplane in Uncoordinated Flight-

Airplane with 1/2 Ball Slip-(into good engine)



-Airplane flies in a side slip
-increased form drag
-Decreased rudder effectiveness

-Decreased side slip
-Decreased drag
-increased rudder effectiveness

1/2 BALL SLIP (not worst case) (specified by manufacturer)