

## notes

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# Constant Speed Propellor

## Part 1

<https://www.youtube.com/watch?v=4ckZXoNTuhg>

- Fixed pitch propellor
    - angle between plane of rotation and chord line is blade angle or pitch angle
    - higher blade angle at propellor root to produce even thrust along propellor blade
    - vertical component of relative air flow caused by propellor rotation
    - sum of vectors 1. vertical component 2. component of relative air flow by travelling forward = resultant relative air flow
    - AoA between propellor blade and resultant relative air flow decreases as forward speed increases, reducing total thrust
    - sum of vectors 1. propellor torque (opposite to propellor rotation direction) 2. thrust = resultant force
    - RPM increase causes increases vertical component of relative air flow and increased propellor AoA
    - Propellor efficiency is a consequence of
      - \* TAS
      - \* RPM
    - *todo draw diagram*
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## This document

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