LIST OF SYMBOLS

SYMBOLS

Chapter 1

A	Area
B	Broyden Approximation to the Jacobian Matrix
CFG	Nozzle Thrust Coefficient
D	Diameter
f	Fuel – Air Ratio; A Function
F	Thrust; A System of Equations
h	Enthalpy
$\dot{m}$	Mass Flow Rate
N	Rotation Speed
P	Pressure
$PSFC$	Power Specific Fuel Consumption
S	Scalar Value
SFC	Specific Fuel Consumption
$TSFC$	Thrust Specific Fuel Consumption
V	Velocity
$\dot{W}$	Power
X	A Vector of Unknown Variables in an Equation System
x	An Unknown Variable in an Equation
η	Isentropic Efficiency

θ	Ratio of Temperature to Reference Temperature
δ	Ratio of Pressure to Reference Pressure

Subscript and Superscripts

amb	Ambient
c	Corrected
C	Compressor
des	Design
f	Fuel
s	Static
t	Total
T	Turbine
TO	Take – Off

Chapter 2

A	Area
C_0	Isentropic Stage Velocity
Eff	Efficiency
h	Enthalpy
$\dot{m}$	Mass Flow Rate
Mn	Mach Number
P	Pressure
PR	Pressure Ratio
r	Radius

R	Reaction
U	Wheel Speed
V	Velocity
w	Blade Row Angular Speed
Wc	Corrected Mass Flow Rate
α	Absolute Frame Tangential Angle
β	Relative Frame Tangential Angle
δ	Deviation Angle
φ	Slope or Meridional Angle
ϕ	Flow Coefficient
ρ	Density
ψ	Loading Coefficient

Subscript and Superscripts

a	Blade Row Entrance Calculation Station
b	Blade Row Exit Calculation Station
i	Streamline or Blade Segment Number
m	Mean
rel	Relative
s	Static
t	Total
z	Axial Component
θ	Tangential Component

Chapter 3

c	Chord
C_{case}	Calibration Factor for Casing
C_{misc}	Empirical Coefficient for Burner
d	Profile Thickness Related to Chord Length at the Tip
D	Diameter
E	Modulus of Elasticity
E_{kin}	Kinetic Energy
h	Height
H	Total Enthalpy
H/T	Hub to Tip Ratio
ι	Ductile Deformation Coefficient
K	Blade Volume Factor
l, L	Length
l_p	Tip Perimeter
$\dot{m}$	Mass Flow Rate
m_B	Mass of One Blade
N_B	Number of Blade
P	Pressure
r	Radius or Radial Distance
r_{cg}	Radius of the Center of Gravity of the Dead Weight

r_l	Outer Radius of the Live Disk
S_f	Safety Factor
t	Thickness
T	Torque; Temperature
T_0	Reference Temperature
u	Radial Displacement
V	Volume
ω	Rotational Speed
W	Weight
ρ	Density
τ	Shear Stress
τ_{max}	Maximum Impact Stress
μ	Consolidation Coefficient
λ	Elastic Deformation Coefficient
κ	Shear Deformation Coefficient
σ	Stress
σ_e	Equivalent or Von Mises Stress
σ_r	Radial Stress
σ_{uts}	Ultimate Tensile Strength
σ_y	Yield Strength
σ_θ	Tangential Stress
ν	Poison's Ratio

α	Coefficient of Thermal Expansion
ΔT	Temperature Difference between Disk Rim and Bore

Subscript and Superscripts

all	Allowable
avg	Average
con	Connecting Hardware
B	Blade
h	Hub
i	Inner or Internal
j	Number of Segment
max	Maximum
min	Minimum
o	Outer
t	Total

Chapter 4

Eff	Efficiency
FAR	Fuel – Air Ratio
$Nmech$	Mechanical Speed of the Shaft
Nc	Corrected Shaft Speed
Pt_in	Inlet Total Pressure
r	Radius
R	Reaction

Tt_in	Inlet Total Temperature
$T4$	Combustor Exit Temperature
$T41$	HPT Rotor Inlet Temperature
V	Velocity
W_in	Inlet Mass Flow Rate
Wc	Corrected Mass Flow Rate
ϕ	Flow Coefficient
ψ	Loading Coefficient
μ	Velocity Ratio
υ	Radius Ratio

Subscript and Superscripts

m	Mean
z	Axial