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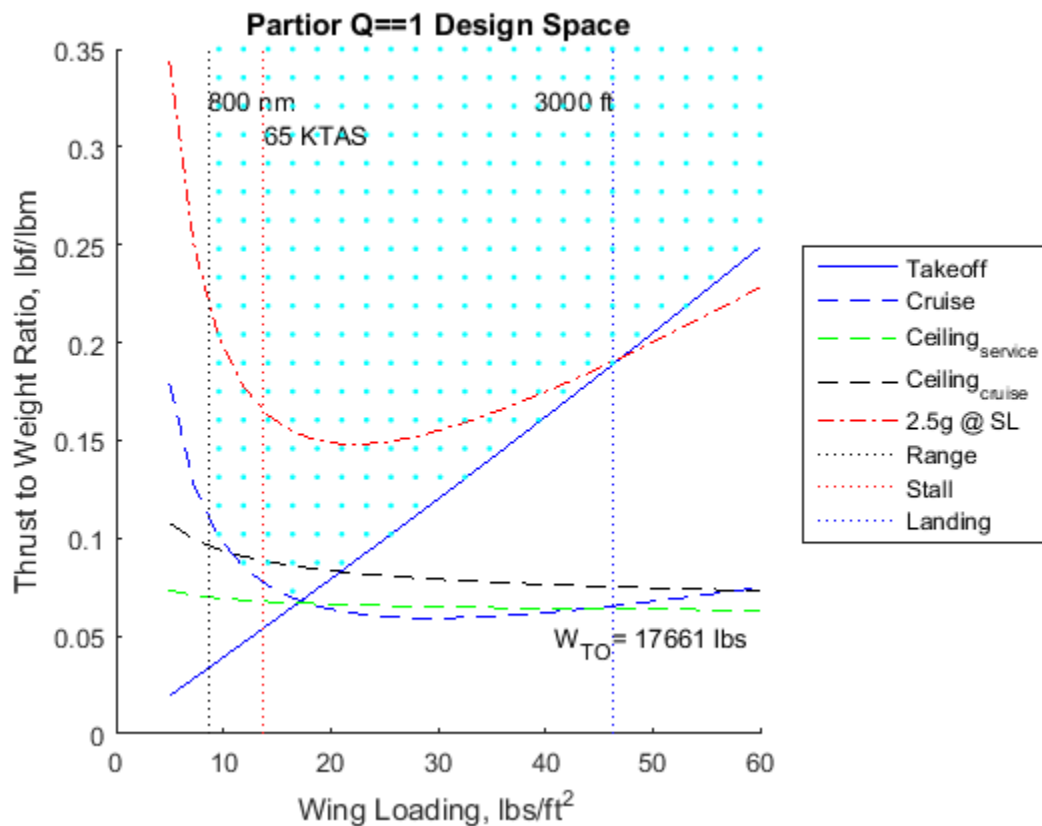
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## Power to Constraints

Designed to take T/W data from Constraint Graphic, and transform that to Power required at Various Altitudes

```
close all; clear; clc
cnstr
```



## Cruise Conditions

Equilvant Power to various altitudes

```
D=@(ws,v,p) Cd0*0.5*p*v.^2.*(Wto./ws)+K*ws*Wto./(0.5*p*v.^2);
```

```
% Straight, Level Flight
```

```
Preq_cruise=D(WSdom,V_c,p_c)*V_c/(p_c/p_sl);
```

```
% Service Ceiling
```

```

Preq_serv=D(WSdom,V_md(WSdom,p_sc),p_sc).*V_md(WSdom,p_sc)/(p_sc/
p_sl);
% Cruise Ceiling
Preq_cc=D(WSdom,V_md(WSdom,p_c),p_sc).*V_md(WSdom,p_c)/(p_c/p_sl);
% 2.5g Maneuver at Sea Level
Preq_man=D(WSdom,V_c,p_sl)*V_c/(p_sl/p_sl);

```

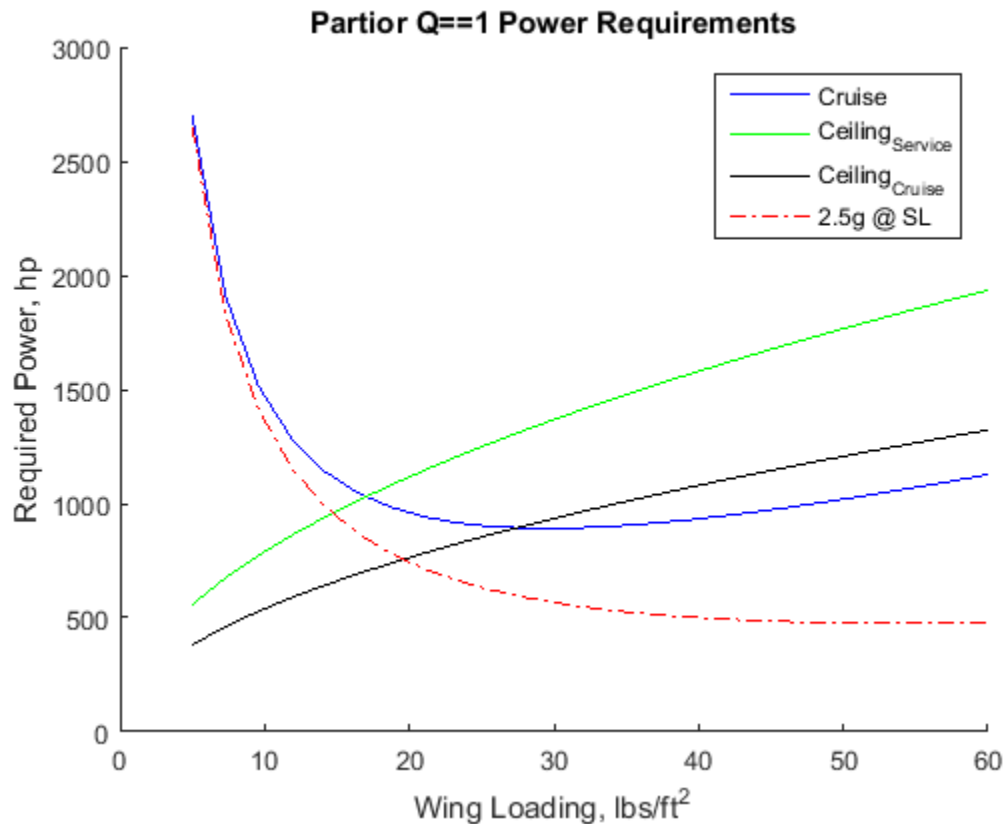
## Graphic Output

```

f2=figure(2); clf
hold on
plot(WSdom,Preq_cruise/550,'b-')
plot(WSdom,Preq_serv/550,'g-')
plot(WSdom,Preq_cc/550,'k-')
plot(WSdom,Preq_man/550,'r-.')

legend({'Cruise','Ceiling_{Service}','Ceiling_{Cruise}','2.5g @ SL'})
xlabel('Wing Loading, lbs/ft^2')
ylabel('Required Power, hp')
title('Partior Q=1 Power Requirements')

```



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