

Section 10.4.7, "Constraint 3: Take-off Ground Run Constraint", page 156

The equation for the required thrust to weight ratio should read:

$$\frac{T}{W} = 1.21 \frac{W/S}{\rho C_{Lmax}^{TO} g d_{GR}} + \frac{1}{2} \frac{C_D^{TO}}{C_L^{TO}} + \frac{1}{2} \mu_{TO}$$

Note the appearance of the maximum lift coefficient in the take-off configuration – this comes from the link between the required lift-off speed being linked to the stall speed:

$$V_R = 1.1 V_{SI}^{TO} = 1.1 \sqrt{\frac{2W/S}{\rho C_{Lmax}^{TO}}}$$

The corresponding Python code snippet (including the maximum lift coefficient, which did not feature in the original equation) should read:

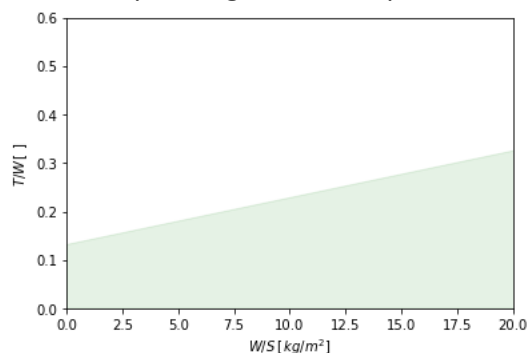
```
from scipy import constants
CLmaxTO = 1.7

WSlistGR_Pa = np.linspace(Start_Pa, 8500, Resolution)
TWlistGR = []
i = 0

for WS in WSlistGR_Pa:
    TW = 1.21 * WSlistGR_Pa[i] / (TakeOffDens_kgm3 * CLmaxTO * constants.g * GroundRun_m) + \
        0.5 * CDTO / CLTO + 0.5 * muTO

    TWlistGR.append(TW)
    i = i + 1
WSlistGR_kgm2 = [x*0.101971621 for x in WSlistGR_Pa]
```

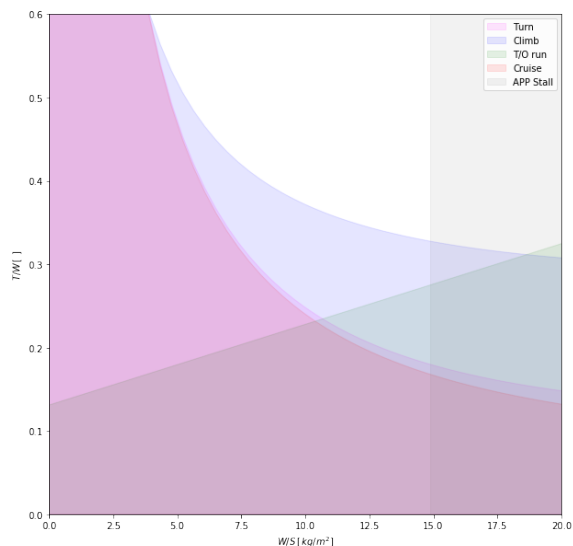
The corresponding constraint plot should look like this...:



Section 10.4.7, "Combined Constraint Diagram", page 160

The vertical axis of the combined constraint diagram for thrust to weight on page 160 should be marked "T/W (-)" and the correct combined constraint diagram should look like this...:

Combined constraint diagram



Note that both the take-off run and climb plots have been updated. The climb constraint was simply incorrectly plotted in the original book (the correct climb constraint was shown in Section 10.4.7, “Constraint 2: Rate of Climb”).

The corresponding Python code snippet for the ground roll constraint on engine power should read:

```

WSlistGR_Pa = np.linspace(Start_Pa,8500,Resolution)
PlistGR_kW = []
i = 0
for WS in WSlistGR_Pa:

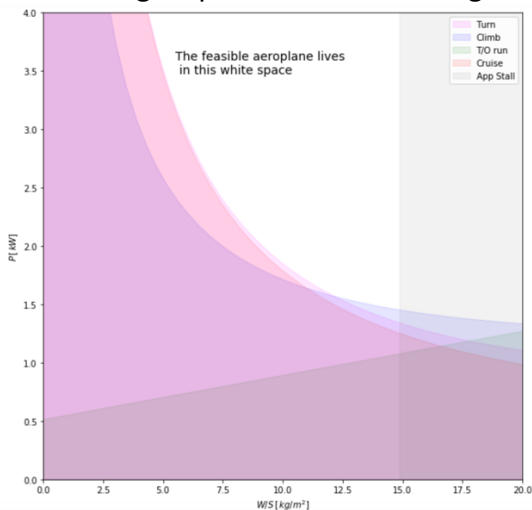
    TW = 1.21 * WSlistGR_Pa[i] / (TakeOffDens_kgm3 * CLmaxTO * constants.g * GroundRun_m) + \
    0.5 * CDTO / CLTO + 0.5 * muTO

    P_kW = 9.81 * TW * DesignGrossWeight_kg \
    * TakeOffSpeed_mpsCAS / PropEff \
    / (1.132*TakeOffDens_kgm3/SeaLevelDens_kgm3-0.132)/1000
    PlistGR_kW.append(P_kW)

    i = i + 1
WSlistGR_kgm2 = [x*0.101971621 for x in WSlistGR_Pa]

```

The final engine power constraint diagram (Figure 10.6) is then:



Section 13.6.3 “Analyzing Decode-1 with XFLR5: Stability”, page 224

The equation for C_{ma} is missing a trailing bracket.

Section 13.6.3 “Analyzing Decode-1 with XFLR5: Stability”, page 227

There is a typo in Table 13.2: pPhugoid -> Phugoid