

Turbo-Fan Computer Assignment.

This assignment will investigate the effect of by-pass ratio, B , on the performance of a turbo-fan engine (assume no mixing of the hot (m_h) and cold (m_c) streams of air; i.e., there are separate hot and cold nozzles.)

Assume everything is identical to that given in the Twin-Spool Turbo-jet assignment (HW#5) except:

$$OPR = 24.$$

$$T_{INT} = 1400K$$

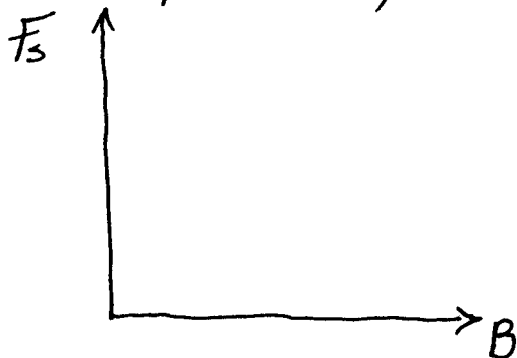
$$PRC_{LP} = PRF = 2.0$$

$$\Rightarrow PRC_{HP} = OPR / PRF = 24 / 2.0 = 12.0$$

Assume isentropic efficiency of the "cold" nozzle is same as "hot" nozzle. ($\eta_N^c = \eta_N^h = 0.95$)

Let $B = 0, 0.25, 0.50, 0.75, 1.0, 1.25 \dots, B_{max}$

Compute F_s , t_{sfc} ; tabulate and plot results



Discuss Results: