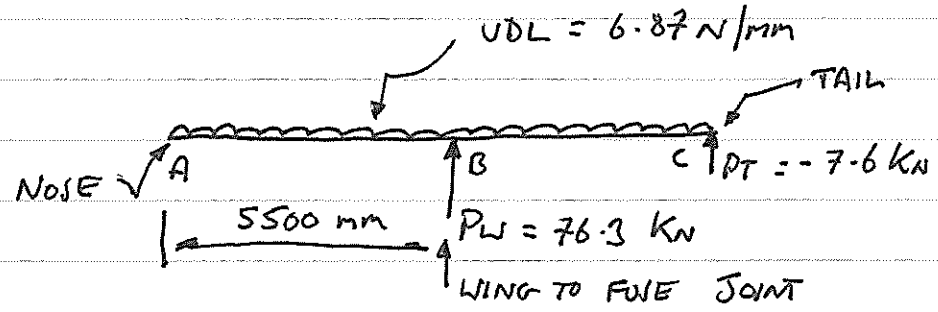
CALCULATION OF SHEARING FORCE & BENDING MOMENT MAXIMUMS FOR G280 BUSINESS JET EXAMPLE.

CONSIDER FUSELAGE AS A BEAM WITH A UNIFORMLY DISTRIBUTED LOAD OF 6·87 N/mm

WING TO FUSELAGE JOIN IS AT POINT 5500 mm AFT FROM THE NOSE



SHEAR FORCE AT POINT B = SUMMATION OF ALL FORCES FORWARD OF POINT B

= UDL × LENGTH

= 6·87 × 5500 $\left(\frac{KN}{mm} \times mm\right)$

= 37·8 KN

BENDING MOMENT AT POINT B = SUMMATION OF ALL MOMENTS ACTING FORWARD OF POINT B

= MOMENT DUE TO UDL

= (TOTAL FORCE) × (DISTANCE TO CENTRE OF ACTION OF FORCE)

= (6·87 × 5500) × (5500/2)

= 37·785 KN × 2750 mm

= 103·9 × 10^6 KN mm

= 103·9 KNm