WINDSHEAR

ON THE SITA FLIGHT PLAN

by:
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1. Windshear is shown on the Sita Flight Plan as a shear rate (SR) and is based on an analysis of the vertical vector difference between the wind at the cruise flight level and that at a level 4000 feet above, it is averaged between 2 waypoints to present the 'SR' value on the flight plan. No assessment of horizontal windshear is made concerning the 'SR' value. Horizontal differences in wind can/do effect the route selected.

2. The 'SR' is calculated by measuring the difference in Groundspeed between that shown on the flight plan and that that would be found 4000 feet above assuming the TAS remains the same.

   The value shown on the CFP as 'SR' is the difference in groundspeed per 1000 feet above the cruise flight level.

e.g Flight Level 370 Groundspeed 440 knots *(TAS = 400 knots)* Cruise Flight Level 330 Groundspeed 460 knots Groundspeed difference is 20 knots, Groundspeed difference per 1000 feet is therefore 5 knots so, SR is 5

This is done at each waypoint and if there is a mid weather point due to the leg distance being greater than 240 nmls, an analysis is also done at this midpoint. The value shown for each leg on the flight plan is the average of the calculated values at the beginning and the end of the leg, (and the mid point if necessary as described above).

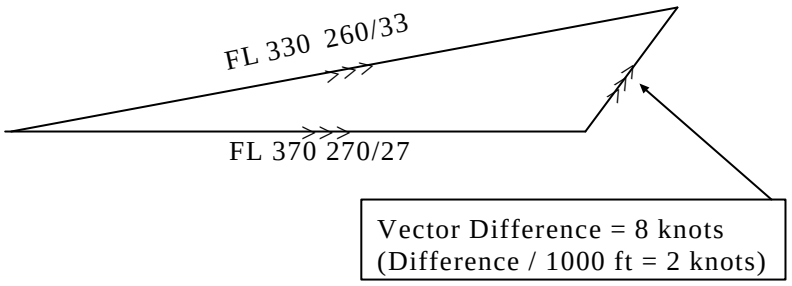
	Waypoint X	*TAS 400*	Waypoint Y
Flight Level 370	Groundspeed 440 knots		Groundspeed 424 knots
Cruise Flight Level 330	Groundspeed 460 knots		Groundspeed 460 knots
	GS difference is 20 knots		GS difference is 36 knots,
	GS difference per 1000 feet is 5 knots		GS difference per 1000 feet is 9 knots
	SR = 5		SR = 9

SR for leg shown as '7'

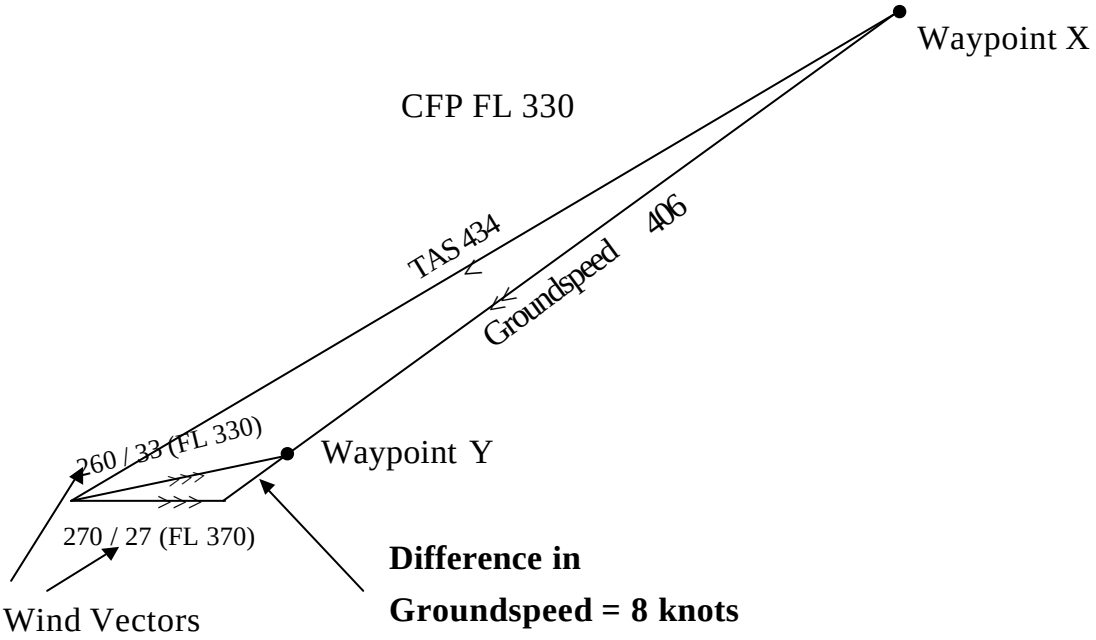
3. Using the method previously described, that is by evaluating the difference in groundspeed, the vector difference between the 2 winds is assessed. Both wind direction and wind speed are considered. This can be proven as follows:

Assume: TAS is 434, Wind at FL370 is 270/27 and at Cruise Level FL330 is 260/33.

The Wind Vector Diagram would appear thus:



The Wind vector can be directly transposed to the the 'Triangle of velocities Diagram representing Heading and TAS, Wind Vector and subsequent Track and Groundspeed.



4. Windshear, whilst being a possible cause of Clear Air Turbulence (CAT) is not the only cause. Horizontal shear, temperature shear and jetstream proximity can cause CAT. There should therefore be no direct assumptions made that a low value of SR will ensure no turbulence, or on the contrary that a high SR value will confirm turbulence