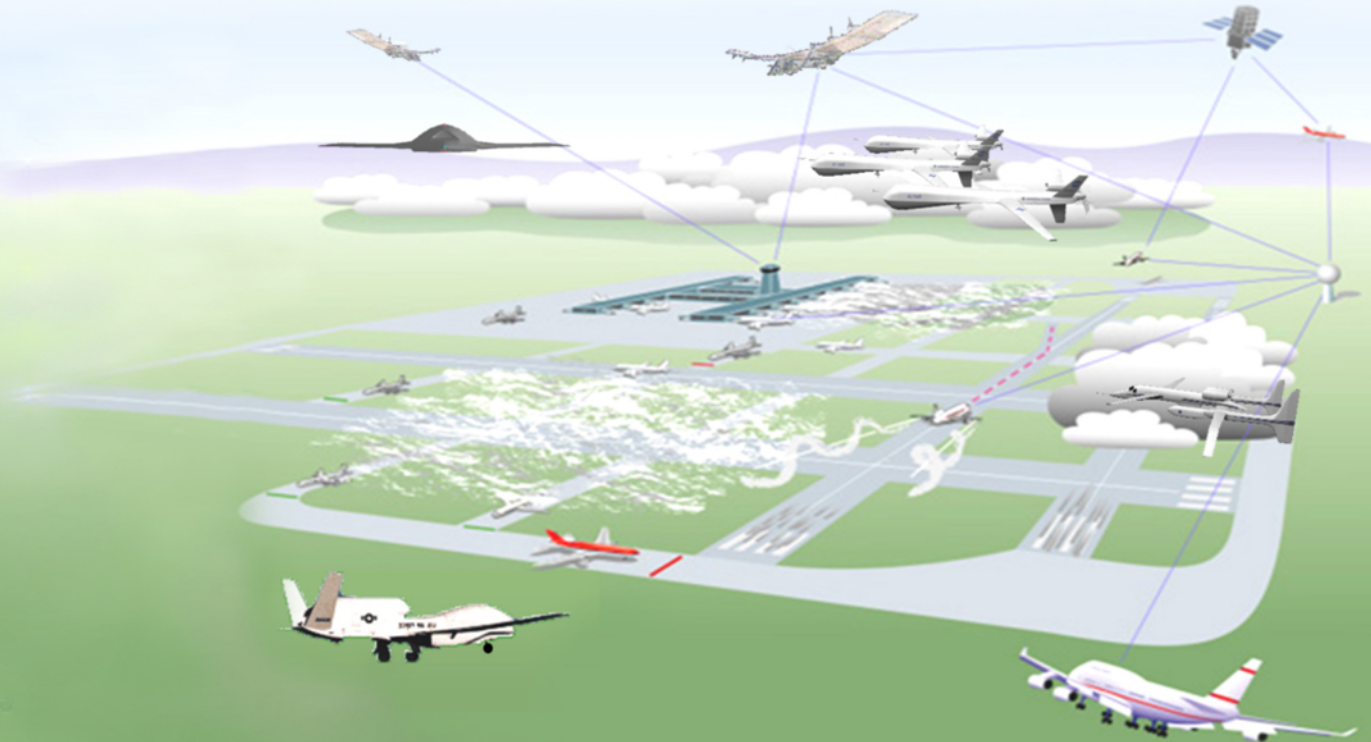




National Aeronautics and Space Administration

# UAS Integration into the NAS: TCAS Mini HITL Subjective Results Human Systems Integration

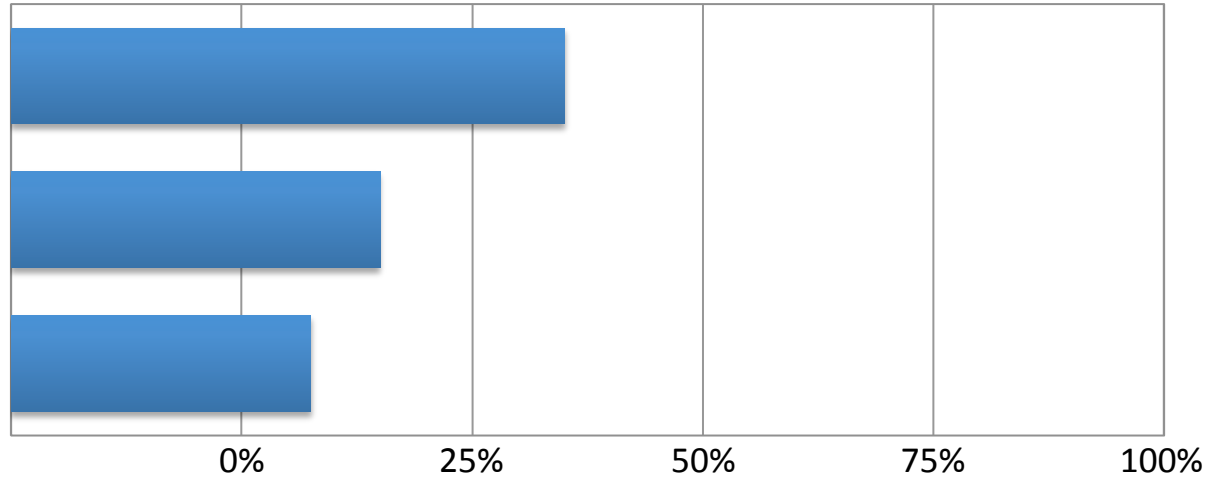




# TCAS RAs and Warning Alerts



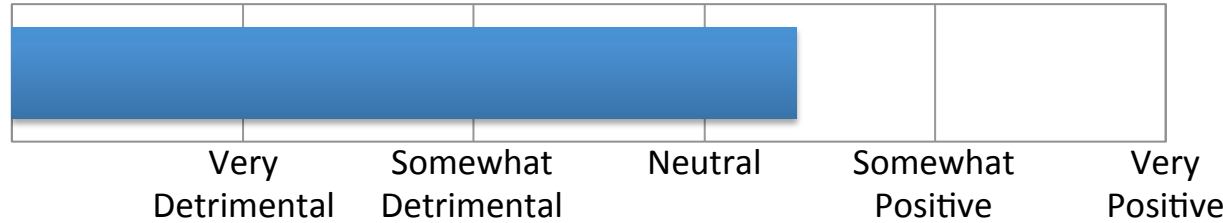
Percentage of time my reaction to a Warning alert was interrupted by the onset of a TCAS RA (for the same intruder)



Percentage of time I misidentified a Warning alert as a TCAS RA

Percentage of time I misidentified a TCAS RA as a Warning alert

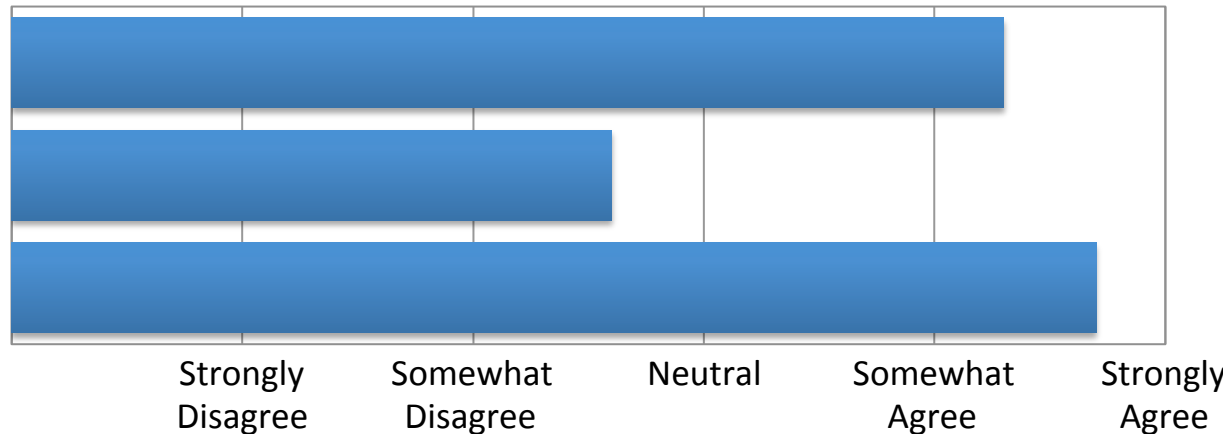
The occurrence of a Warning alert prior to a TCAS RA for the same intruder had a \_\_\_ effect on my ability to maintain well clear



I always prioritized responding to TCAS RA over a Warning when they occurred at the same time

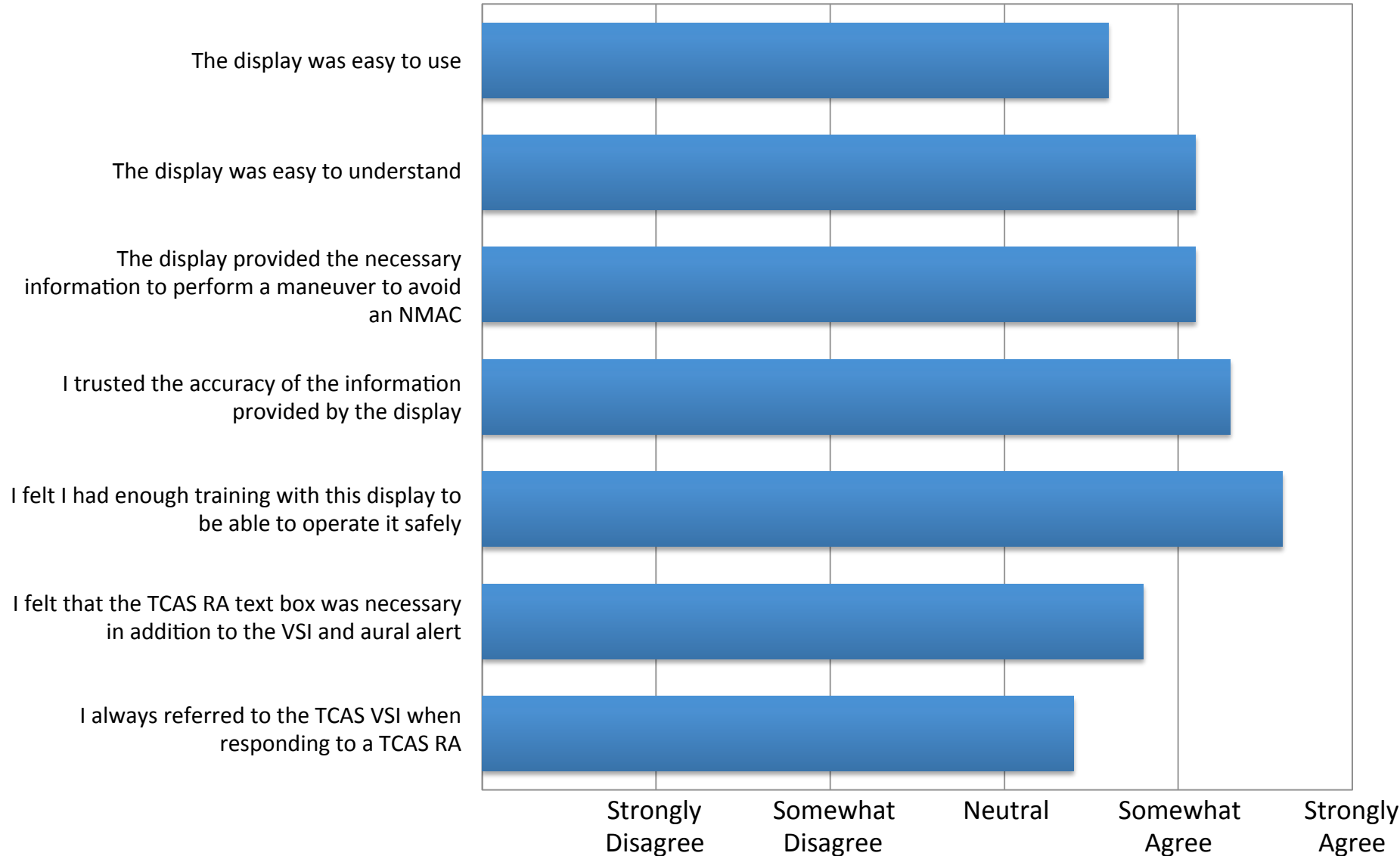
I believe that having both a Warning alert and a TCAS RA alert for the same aircraft IS NOT necessary

I believe that having a Warning alert for non-cooperative aircraft IS necessary



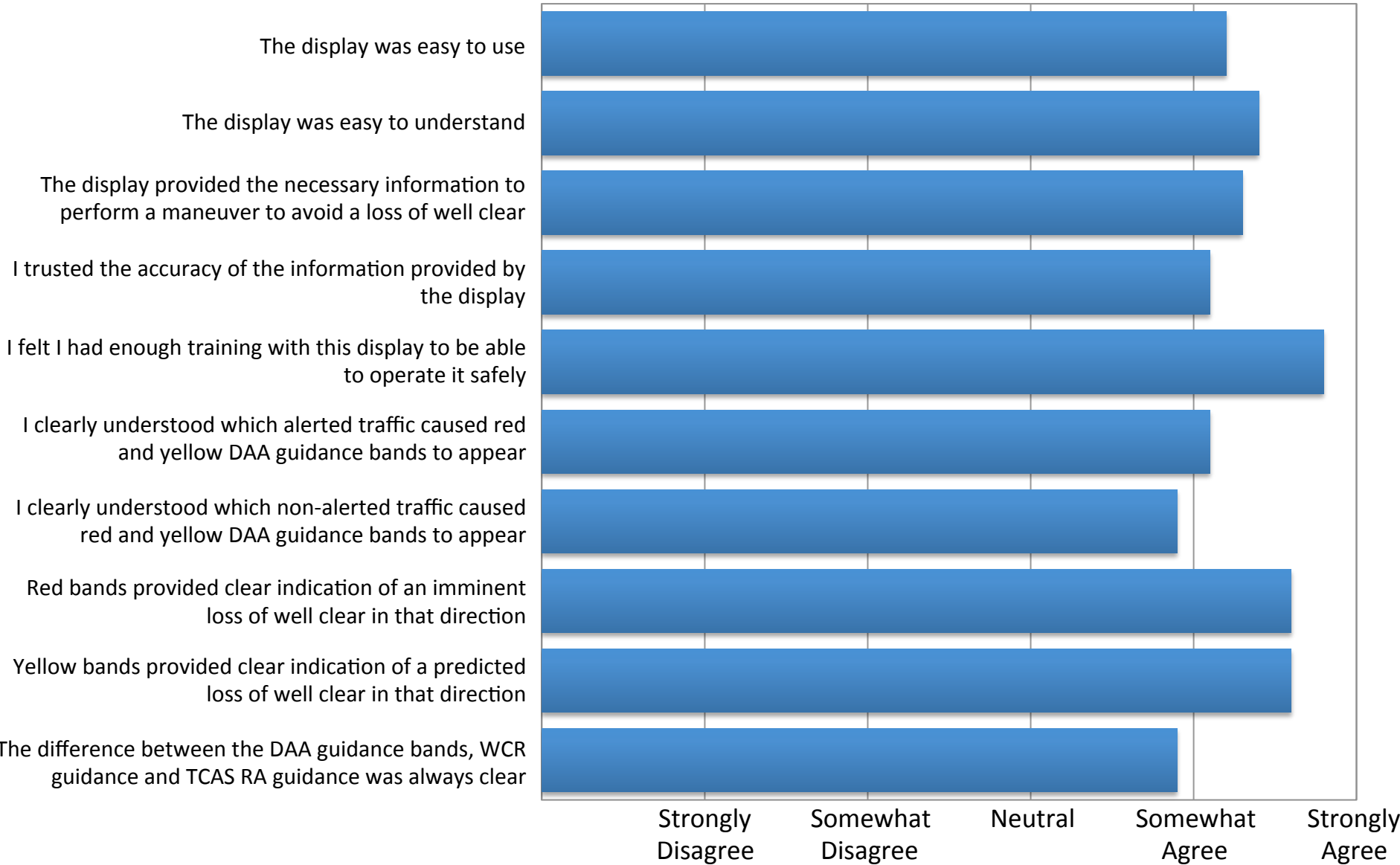


# TCAS Vertical Speed Indicator



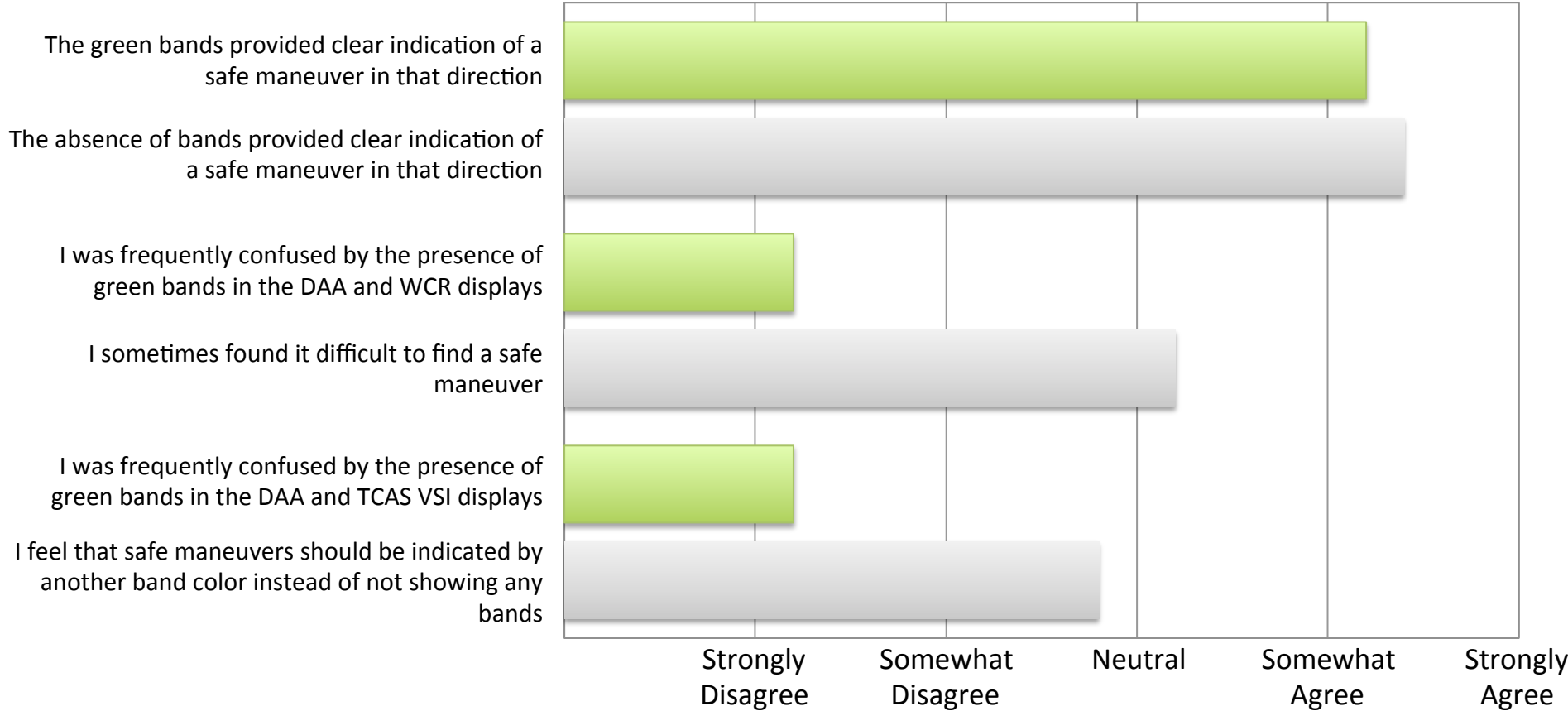


# DAA Guidance Bands





# DAA Guidance Bands





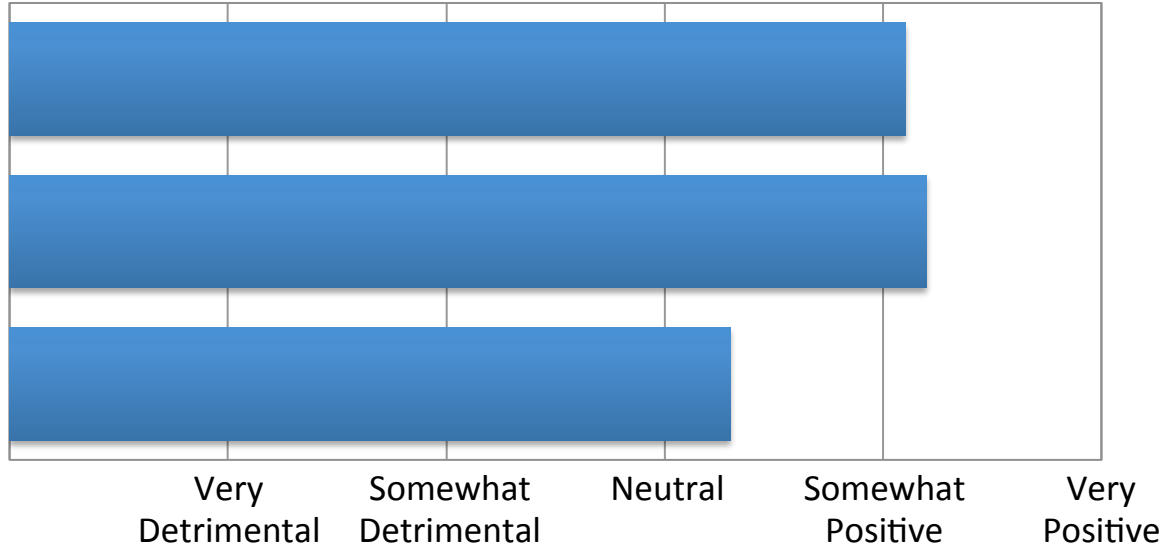
# Well Clear Recovery



The effect of the DIRECTIONAL well clear recovery guidance on my ability to reduce the severity of or prevent an imminent loss of well clear was

The effect of the LIMITED SUGGESTIVE well clear recovery guidance on my ability to reduce the severity of or prevent an imminent loss of well clear was

The effect of the well clear recovery guidance text box on my ability to reduce the severity of or prevent an imminent loss of well clear was



Percentage of time that I confused the well clear recovery text box with the TCAS RA text box was

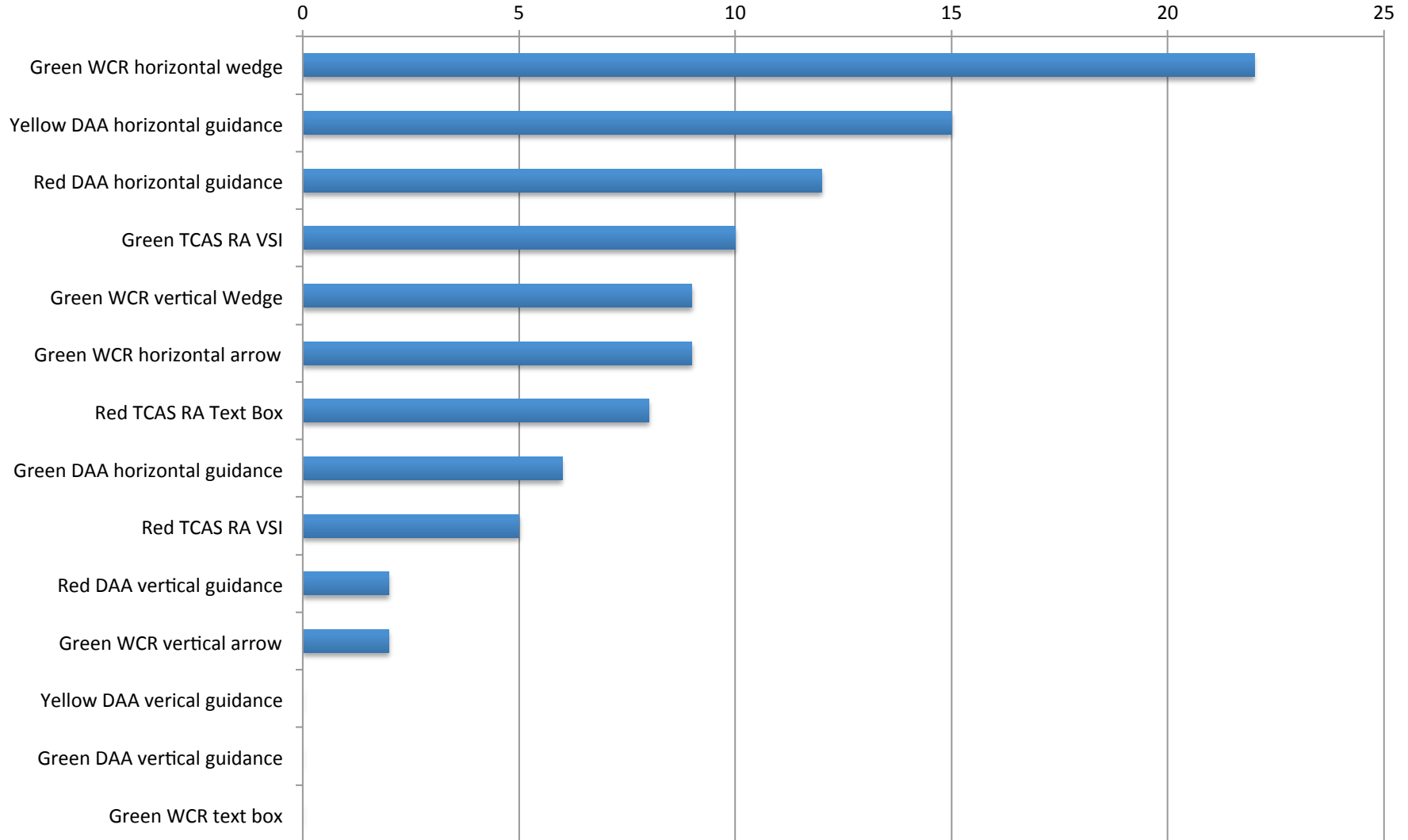


Which of the two well clear recovery display configurations had the most positive effect on your ability to maintain well clear?



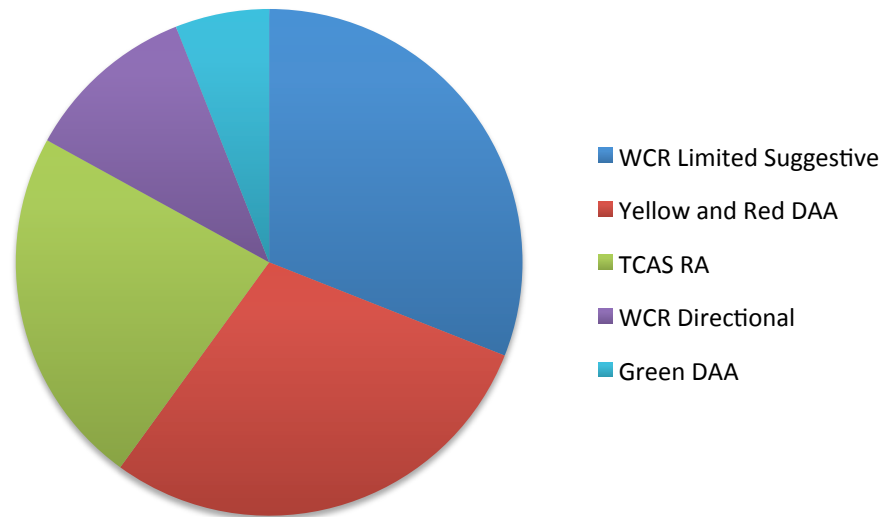
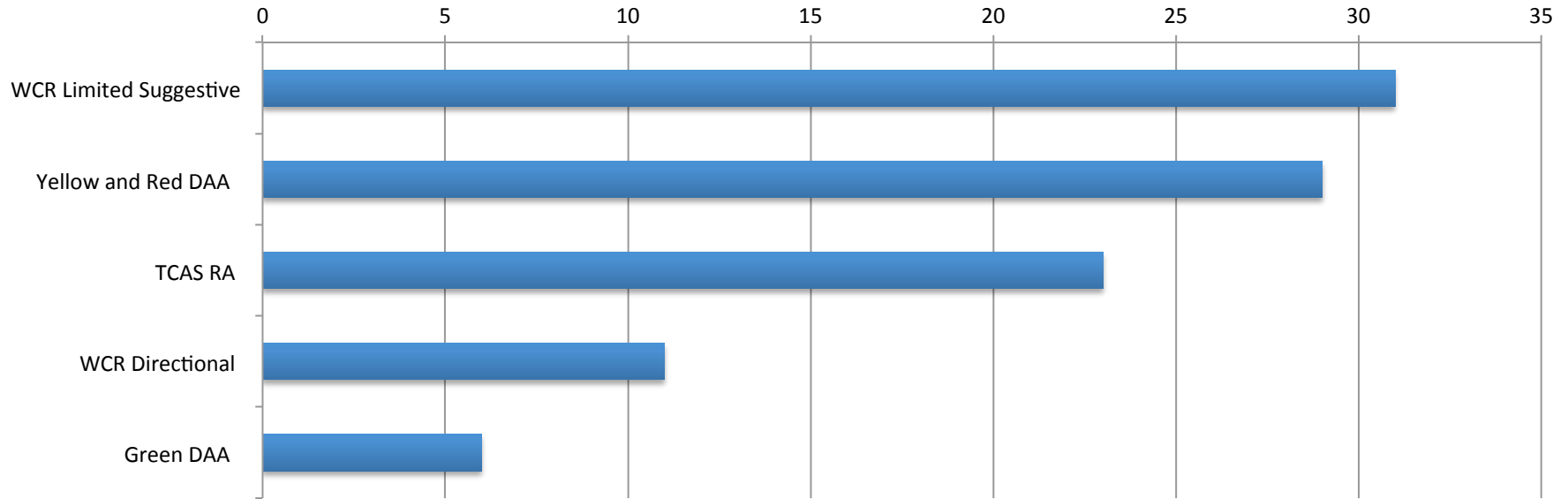


# Preference Rating Score





# Preference Rating Score





# Alert Levels



■ TCAS RA ■ Warning ■ Corrective ■ Preventive





# Alert Levels

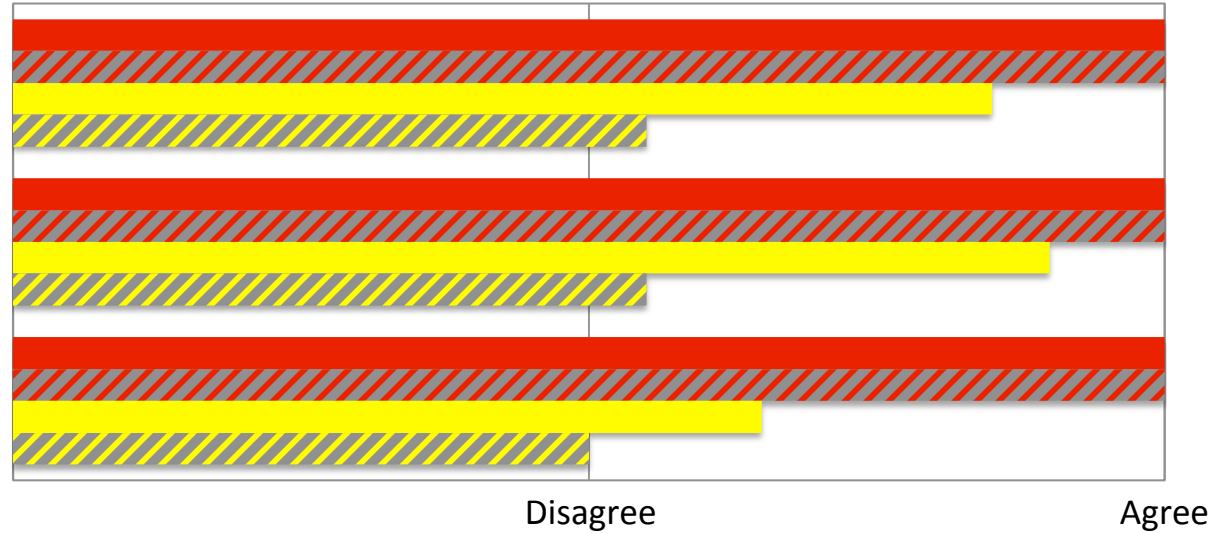


■ TCAS RA ■ Warning ■ Corrective ■ Preventive

If ownship and intruder trajectories remained unchanged, this alert indicated an eventual loss of ATC separation

If ownship and intruder trajectories remained unchanged, this alert indicated an eventual loss of Well Clear

If ownship and intruder trajectories remained unchanged, this alert indicated an eventual collision, collision hazard, or NMAC



■ TCAS RA ■ Warning ■ Corrective ■ Preventive

The onset of this alert was

