atsap
Air Traffic Safety Action Program

Briefing Sheet

March 2017

Passing or Diverging

Recent ATSAP Reports:

"...the arrival aircraft pilot asked for lower. Trying to accommodate I misjudged his proximity to the departure aircraft. I misused divergence. I needed 45 degrees more than the reciprocal of the other pilots heading. The departing aircraft was on a westbound heading. Legally I couldn't have issued a decent with any heading greater than a 45." ATSAP 2016

"Our STAR for 22L into [AIRPORT 1] crosses our departures. The arrival is at 4000. The Departures depart climbing to 3000. The STAR puts the arrivals on a 090 "Track". [ABC123] was on the STAR. [N123] was a departure, I turned him to a 110 "heading", waited until paths crossed, then climbed him to 5000. Apparently the wind was stronger or the aircraft got pushed more because he was lighter than I had anticipated and I went less than 15 degrees on my divergence." ATSAP 2017

"[N12345] departing [APRT 1] to [APRT 2] climbed the [N12345] and turned to a 240 heading to get him on course. [N34567] departed [APRT 3] shortly after and needed to go northeast bound by the flight of [N12345]. [N12345] was climbing to 80 and I stopped [N34567] at 35 and got a point out with the tower since it was going to be in tower's airspace. I put [N34567] on a heading of 050 to pass behind [N12345]; when I saw that [N34567] was going to pass behind I climbed him to 70 then went back to talk to another aircraft. Then I noticed that while the [N34567] was going to pass behind the [N12345] it looked a little close and it was showing 2.77. I gave traffic but he was already passing aircraft and never got him in sight....Speed of aircraft {was} unexpected and possibly wind pushing headings, I believe were some of the factors." ATSAP 2017

The intent of this Briefing Sheet is to make operational personnel aware of trending ATSAP data, and to provide a general overview of the safety issue. Mitigations should be explored in your Local Safety Council.

Loss of IFR to IFR separation is the most commonly occurring safety event in ATSAP reports. Event Review Committees (ERCs) recognize that the misapplication of Passing or Diverging Separation contributes largely to those events. Controllers report various reasons for this, such as, descending aircraft too soon, anticipating the aircraft will pass each other prior to losing other approved forms of separation. Also, not using enough divergence due to wind, miscalculating or simply not issuing the correct heading for the required 15 or 45 degrees divergence. Front line employees also frequently reported miscalculations in anticipating aircraft performance.

The top contributing factors identified by controllers and ERCs in these reports, during the past 12 months, in ranking order are:

- Controller Expectation Bias – A strong belief or mindset towards a particular outcome based on frequently encountered situations...'I expected the aircraft to climb faster...' or 'the aircraft slowed down sooner than I expected...'
- Pilot Actions Timely Aircraft Turn, Descent or Climb - Performance of the aircrew and the aircraft capability results in an untimely turn, descent or climb.
- Controller Action or Plan Execution - An individual's execution of a particular action and/or plan is inadequate for the situation.
- Training in Progress during Event
- Auditory or Visual Information Misinterpreted – Controllers action towards a situation is the result of misinterpreting an auditory cue (e.g. landline communication) or visual cue (e.g. radar display or flight progress strip).
- Duty Related Distractions
- Weather – Wind

Facility Discussion

- How is Passing or Diverging separation used at your facility?
- How is aircraft performance emphasized during training on passing or diverging?
- How do you calculate the degree of divergence for heading and/or track with reference to wind?

By filing an ATSAP report, you contribute important safety information that will help identify trends and issues and help the ATO measure success by what we fix.