

Trabble Trubble

THIS ISSUE'S PUZZLES

1. Speed Limit Puzzle: A car travels at a speed of 40 miles per hour on a 1,000-mile trip.

How fast must the car travel on its return trip in order that the average speed for the total round trip is doubled, i.e. 80 miles an hour?

[The answer for this puzzle is posted on the bottom of page 75—please do not send solutions.]

I decided to expand on the theme of last issue's puzzle somewhat after realizing that there just might be a market for reserved seating insurance. So here we go again with those confused and confusing travelers....

2. C & C Travel Insurance Puzzle

DEPARTING FLIGHT: An airplane has exactly 80 passenger seats. 80 passengers are in a single line to get on board, and



each has a reserved assigned seat. Each passenger gets on one at a time to select his or her seat. However, the **first** passenger on line does not look at the assigned seat number and randomly selects a seat on the plane. Thereafter, each passenger takes his or her assigned seat—if it is already taken, the passenger selects at random another unoccupied seat.

RETURNING FLIGHT: The same passengers return in the same airplane. However, on the return flight, the first **Four**

passengers on line similarly disregard their reserved seat numbers, and randomly select an unoccupied seat. Thereafter, each passenger takes his or her assigned seat—if it is already taken, he/she selects, at random, another unoccupied seat

QUESTION: Suppose that the expected number of passengers not in their assigned seats on the Departing flight has value A. What is the expected number of passengers that are not in their assigned seats on the Returning flight?

[Note: The "expected number" referred to means the statistical mathematical expectation and is not necessarily integral.] Try to solve this puzzle the old fashioned way—i.e. without a computer or calculator.

Please submit your answers via email to PuzZzles@aol.com or by mail to PUZZLES, 17 Ravine Rd., Great Neck, NY 11023. No solution is required. Please submit answers as soon as possible to make the solvers list. Please send any new ideas, and favorite, as well as despised, puzzles that you think may be useful for future issues to the same address.

I'd like to thank Lev Epshteyn for providing the original idea for last issue's puzzles; and to extend my appreciation to Albert Kovalyov for his helpful feedback on this issue's C&C puzzle.

ANSWER TO LAST ISSUE'S PUZZLES:

1. Confused and confusing passenger—The probability is 1/2.

2. The 2 Confused and Confusing passengers—The probability is 1/3.

I will discuss the solution in the next issue.

1/3
Lynchval
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JANUARY/FEBRUARY SOLVERS

Bruno Benoit, Joseph Demty, Andrew Erman, Paul Fung, Tom Henning, Bob Howard, Matt Lynch, Brian Miller, Sarah Mu, Stephen Peeples, Steve Shadwick, Ronald Stokes, Gary Strunk, James Washer, Larry Williams, Richard Wolf.

MARCH/APRIL SOLVERS

Robert Ballmer, Bob Bartholomew, Liz Baumann, Dick Botteli, Doug Brooks, Roger Burton, Joseph Bussillo, Jared Calvert, Lois Cappellano, William Carroll, Jim Chapman, Robert Conger, John Crooks, Bill Cross, Cho Da, Andrew Dean, Lance Dyrland, Michael Failor, Yan Fridman, Mark Glickman, Brian Goldberg, Yasmin Guilor, Mark Hamwee, Brett Hodgson, Bob Howard, Jim Huard, Jim Keilman, Todd Kennedy, Chi Kwok, Alan Lange, Bob Lyle, Steve Mendelsohn, Achilles Natsis, Chris Noble, Dave Oakden, Don Onnen, Stephen Peeples, David Promislow, Honglei Qu, Michael Raad, Michael Shackelford, Don Sondergold, Al Spooner, Elnatan Sulimanoff, Gerald Teig, Chuck Underwood, Jeremy Wessels, Dick Wendt, Scott Wiley, Jenny Young, Darin Zimmerman.

Pretty darned fast! Looks like the car would have traveled at infinite or "instantaneous" speed. This is because the formula for average speed is, of course (total distance)/(total travel time). In this case we would have 2,000/(time traveled going + travel time returning). Solving for an average speed of 80mph, the return trip time must be zero, i.e. the return flight speed is infinite. And it is noteworthy, since cars these days can't go faster than infinite speed [although I heard that next year's models are in fact shooting for "judicious" speed], an average of 80 miles per hour is indeed the speed limit....

(And here's one more thought for the road. Suppose you go on a 1,000 mile journey that is a circular loop, and travel at 40 mph. A few days later, you decide to retrace the 1,000 mile trip in the opposite direction—so you turn the car around, run the engine, and then abruptly shut it off. Having just instantaneously arrived at your destination, you jump out of the car, and run in— "and you're home!"—"Home? I'm home!" if you thank your lucky stars that despite the having driven 2,000 miles at an average speed of 80mph, you were not given a single speeding ticket!)

ANSWER TO SPEED LIMIT PUZZLE

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