

**SA 03 EVOC**  
**Session 1 – Loss of Rolling Friction**  
**LD 19 Emergency Vehicle Operations Course**

**Purpose:** This learning activity gives the students the opportunity to observe an all-wheel locked skid. This will help them to understand how to achieve vehicle control by regaining rolling friction.

**Description:** The demonstration will take place on the skid recovery area, which will be wet down ahead of time. The vehicle used is a Department approved skid training vehicle in which the ABS has been disconnected.

The recruits will be staged in a designated safe area with an EVOC instructor in order to view the demonstration. The EVOC instructor who is staged with the recruits will brief them throughout the demonstration and explain step by step what they are observing. A second EVOC instructor will perform the actual demonstration. For safety purposes, both EVOC instructors will be in contact using their police radios.

Upon the commencement of the learning activity, the demonstrating instructor will drive in a direction toward a pre-designated course, which is delineated by 3 stanchions. Once the instructor attains the proper speed (it varies based on conditions), the instructor will apply and lock the brakes. This causes loss of rolling friction. The instructor will then turn the steering wheel to the left. Due to the loss of rolling friction, the vehicle will travel in a straight line, even though the wheels are turned, and will make contact with the cones simulating a traffic collision.

After the initial demonstration is completed, the instructor will explain that if the tires lose rolling friction due to the ABS failure when the wheels lock up, there will be no steering potential in the vehicle. The end result in a real world situation could be a traffic collision.

The procedure for the second demonstration begins the same. The instructor drives toward the stanchions and applies the brakes until they lock up. This will cause loss of rolling friction. The instructor then turns the steering wheel to the left. This time, the vehicle continues in a straight line. The instructor releases the brakes enough to allow the wheels to rotate, which allows the vehicle to regain rolling friction. As a result, the instructor is able to continue on the intended path of travel and avoid making contact with the cones.

After the demonstrations are completed, the instructor will stress the importance of releasing the brakes in order to regain steering potential and vehicle control. In the real world, this may help the students to prevent becoming involved in a traffic collision should the ABS fail and the wheels lock.

**Resources needed:**

- Department approved skid training vehicles

**SA 03 EVOC**  
**Session 1 – Loss of Rolling Friction**  
**LD 19 Emergency Vehicle Operations Course**

- Three stanchions
- Police radios
- Skid recovery course
- Designated safe zone for students and instructors

**Key learning points:**

- Students will understand what an all-wheel lock skid is and how it results in loss of rolling friction (**LD 19 IV. H. 1,2,3**)
- Students will understand what happens when a vehicle experiences an ABS failure
- Students will understand how to regain vehicle control in the event of an ABS failure and wheel lock up

**Time required:** 30 minutes