

tained for another 45 min in the chamber while their clinical condition, CO<sub>2</sub> production and behavioral task performance were monitored. CO<sub>2</sub> and CO concentrations were monitored continuously using infrared analyzers. Five preliminary experiments were conducted on CO at 1,000 ppm, followed by the main experimental series that consisted of 10 exposures at 900 ppm, three for each animal, and one preliminary run. For three exposures (one for each animal), the animals were removed from the chamber 5 min after the exposure period so that venous blood samples could be taken for COHb analysis.

During the four preliminary exposures to CO at 1,000 ppm, there was generally no visible effect on the animals until 18-20 min of exposure had elapsed, at which time they generally became less active, occasionally sitting down for short periods. At approximately 25 min, a dramatic change occurred over a period of 1-2 min, and the animals went from an apparently normal state to one of severe intoxication. This change was preceded by one or more warning signs at approximately 23 min, which consisted of momentary closure of eyes, yawning and shaking of the head. Immediately prior to collapse the animals sometimes paced around in a mechanical fashion, often swaying as they walked. As few as 20 seconds (s) later, the animals were lying or rolling on the floor, sometimes attempting to rise before sitting on the floor or lying down again. During recovery, the animals remained in a state of severe intoxication for approximately 30 min, lying down with their eyes closed. On three occasions animals vomited during this period. After 25-30 min the animals were usually sufficiently recovered to get up and move around the chamber, in response to the buzzer they would sometimes move toward or even press the lever, although they made no attempt to fetch the candy. The performance of the behavioral task was unaffected during the first 15 min of exposure, but before the first minor clinical signs there was generally a slowing of response.

During exposures to 900 ppm, the first signs generally occurred after 20-25 min when the animals became less active, followed by the minor warning signs at approximately 26 min. Although in most cases the animals were lying down at the end of the exposure period, they did not appear to be severely intoxicated and in six of nine exposures the signs were mild, and the animals did not reach a state of collapse. During the recovery period the animals remained in a state of intoxication for approximately 16 min. Recovery was more rapid than that following exposure to 1,000 ppm, as all animals performed the behavioral task within 25 min of the exposure. The first effects upon the chamber traverse time occurred at 15 min into the exposure as a slight, statistically significant decrement in performance. The decrement at 20 min was not statistically significant while at 25 min it was highly significant, as the mean response time was twice the preexposure response time (1.10 s vs. 0.62 s). The first time that the test was conducted successfully on all occasions was after 25 min of recovery when the mean chamber traverse time was three times as long as the mean pre-exposure time. From 30 to 45 min, the animals were more active and response times gradually improved but did not reach the pre-exposure level.