

## CTPAC-PROPOSAL

SUBJECT Change language in permit manual on Mixed Suspensions Systems  
DATE: November 12, 2003  
POLICY: Permit Manual Policy #302.4

### I. OBJECTIVE

Add a new paragraph to the Transportation Permit Manual in section 302.4 Mixed Suspensions Systems and/or use current chart weights for bonus purple. This addition will allow the construction of and use of trailer fleets that meet California laws while giving the customer a solution for moving loads interstate and intrastate without the need to swap trailers. This trailer with the third axle will meet laws or regulations for out-of-State tridem and trunnion regulations.

Additionally allowing the loaded tires to be designed for equal weight on each tire provides for superior safety. The equal tire loading on all tires will maximize braking efficiency during all stopping conditions and when regulated based on the tolerances between actual axle/tire loading and the allowable maximum permit weight, neither the trunnion axle nor the single axle will exceeds axle weights authorized in the Transportation Permit Manual as noted in Caltrans letter of Sept. 9, 2003.

### II. BACKGROUND

Caltrans Permit Manual mandates common suspension between all axles of a loading group. This requirement assumes that all axles are of the same design and shall apply the same extralegal weight to each axle. This design and equal loading provides for uniform braking and maximum safety. This logic was appropriate for trailer designs in 1974 when the Manual was first printed.

This regulation does not provide for mixed rated axles in the same axle group. Nor does allow for equal tire loading when using mixed rated axles (8 tired axle vs. 4 tired axle). If mixed rated axles are used in the same group with equal weight distribution on each axle it may cause unsafe breaking condition.

As noted in Caltrans letter of Sept.9, 2003, Caltrans rejected a proposal by Murray Trailers based on section 302.4, second paragraph. It requires common suspension between all axles in any suspension group. In the same letter Caltrans acknowledges that permit policy would authorize 60,000 pounds on the 16-tire trunnion group and a maximum of 28,000 pounds on the single axle.

Murray Trailers has design a trailer axle assembly with mixed rated axles. Murray Trailers is not asking for 88,000 pounds as noted in the Caltrans letter. Murray Trailers is only asking for 65,625 pounds on the trailer suspension with a 16 tire expando grouping & 4 tire single axle. Additionally Murray Trailers ask to design for equal weight on each tire to maximize braking efficiency.

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The Caltrans purple chart for bonus weight for 10' axle spacing the weight is 65,625 pounds. The trailer would have as little as 26,250 pounds with 8 tires across on trailer axle #1 and 26,250 with 8 tires across on axle #2 and axle #3 with 4 tires across 13,125 pounds. Under this loading all tires would have the same loaded weight

per tire. Never would the three-axle assembly exceed 65,626 pounds, nor the trunnion axles exceed 60,000 pounds nor will the single axle exceed 28,000 pounds. At all times this design would be within the purple or green weight limits authorized by the transportation Permit Policy.

### III EXISTING DOCUMENTATION

- A. See enclosed Drawings and brochures.
- B. Caltrans letter Dated 9/16/03
- C. Purple weight chart
- D. 302.4 Suspension Systems (Out of Permit Manual)

### IV CURRENT PRACTICE

Mixed rated axles in the same loading group are not spoken to under current permit policies. Loads are moved on three axle trailers with mixed suspensions that are never inspected. Loads are moved on three axle trailers with mixed suspensions that incorporate a lift or flip axle. Loads are often changed at the Calif. border before coming in. Often they are overloaded and never go through CHP scales for verification.

### V PROPOSED CHANGES

Authorize the use of mix suspension in a three-axle group consisting of a 16 tire 10' 0" wide trunnion group working in conjunction with a 4 tire 8' 6" wide single axle. The axle spacing between the first and third axle may range from 8' 1" to 10' 0". Based on the purple weight chart calculations for mixed bonus axles within the 8' 1" to 10' 0" spacing, this three axle group qualifies for a maximum of 65,625 pounds.

Proposed addition to Section 302.4

**“Three axle groups that incorporate mixed bonus axles may use different suspension systems within the axle group as long as they do not exceed the allowable weight for the 3-axle assembly, nor that allowed for the bonus axle group, nor that allowed for the single axle.”**

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### VI BENEFITS/ IMPACT / JUSTIFICATION

With the changes made to the mixed suspension section 302.4 it will correct some inefficiency for the trucking industry to move loads across state line on one trailer.

Loading and weighting loads before they move. While not having to flip down the third axle at the state line will help in driver safety, eliminating support equipment and cost. The trucking industry will have less weight per tire on the structures and pavement. This will result in less damage to roadways. With the benefit of traffic safety with braking power improved. The State of California can use existing chart weights for bonus 16 tire 10' wide or legal widths and different axle spacing. This assembly is equipped with "acceptable suspension" systems and complies with the intent of Section 302.4 of the Transportation Permit Manual. Within the intent of the Manual it complies with the requirement that you have equal and equitable weight division between axles.

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