TOWSENSE

Independent Vehicle & Towing Advisory

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Vehicle Advisory Report

FICTIONAL $99 Vehicle + Caravan example

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Prepared for: Fictional example - no customer data

Important Notice

This report provides independent advisory commentary only. It is not an engineering certification, compliance approval, or legal document. All modifications must comply with applicable state and territory regulations. Verify requirements with a qualified engineer or road authority before acting on this advisory.

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Executive Summary

Product and jurisdiction scope

FICTIONAL EXAMPLE - $99 Vehicle + Caravan Assessment. All vehicles, ratings and readings are invented for demonstration. This illustrates the current PDF layout, not a customer outcome, engineering certification or state-specific approval assessment.

Included review

Vehicle and trailer load observations: payload, GVM, GCM, axle loads and towball mass, with supplied assumptions and practical next steps. Actual report content depends on the figures and evidence supplied.

Setup Summary

Fictional conventional-coupling example with no weight-distribution hitch. Supplied unhitched loaded vehicle readings: front 1,400 kg and rear 1,500 kg (total 2,900 kg). Loaded trailer: 2,500 kg including 250 kg measured towball download. Wheelbase 3,000 mm; rear axle to towball 1,200 mm. These invented readings include occupants, fitted accessories, fuel, water and cargo; none is added again.

Overall Assessment

Using the fictional limits and static leverage assumptions, coupled vehicle mass is 3,150 kg against GVM 3,500 kg (350 kg margin). Estimated front axle is 1,300 kg and rear axle 1,850 kg. Combined mass is 5,400 kg against GCM 6,500 kg (1,100 kg margin). The rear axle has the smallest axle margin, 150 kg. Arithmetic margins alone do not establish handling, roadworthiness or legal compliance.

Detailed Analysis

Payload Analysis

FICTIONAL EXAMPLE. Coupled vehicle mass: 2,900 + 250 = 3,150 kg. Remaining GVM margin: 3,500 - 3,150 = 350 kg. This is remaining capacity for this invented loaded setup, not a manufacturer payload specification.

Front Axle

Static front-axle change: -(250 x 1,200 / 3,000) = -100 kg. Estimated coupled front axle: 1,400 - 100 = 1,300 kg. Against an invented 1,600 kg rating, the arithmetic margin is 300 kg. Reduced front load is not a stability or steering assessment.

Rear Axle

Rear-axle change: 250 + 100 = 350 kg. Estimated coupled rear axle: 1,500 + 350 = 1,850 kg. Against an invented 2,000 kg rating, the margin is 150 kg. The estimated axle sum is 3,150 kg, agreeing with coupled vehicle mass.

GVM Position

Vehicle: 3,150 kg versus GVM 3,500 kg. Loaded trailer: 2,500 kg versus an invented ATM rating of 2,800 kg (300 kg margin). Trailer axle-group load: 2,500 - 250 = 2,250 kg versus an invented GTM rating of 2,600 kg (350 kg margin).

GCM Position (Combined)

Combined mass: coupled vehicle 3,150 + trailer axle group 2,250 = 5,400 kg. This also equals unhitched loaded vehicle 2,900 + complete trailer 2,500. Do not add towball mass twice. GCM margin: 6,500 - 5,400 = 1,100 kg. Trailer mass is 1,000 kg below the invented 3,500 kg braked towing limit; towball mass is 100 kg below the invented 350 kg coupling limit.

Recommendations & Next Steps

Prioritized Action Items

1. Fictional example only: obtain exact ratings for the real vehicle, trailer, towbar and coupling before using this approach.

Timeframe: immediate

2. Obtain fully loaded coupled vehicle axle and trailer axle-group readings, in the actual travel and hitch configuration.

Timeframe: short term

3. Review load placement and reweigh after changes. Check the rear axle separately; overall GVM margin is not a substitute.

Timeframe: short term

Operational Considerations

• All specifications, measurements and conclusions in this sample are fictional; no vehicle has been assessed.

• The static estimates assume a conventional coupling without a weight-distribution hitch. Do not apply them to gooseneck or weight-distribution hitch forces.

• Tyre condition and pressure, brakes, load restraint, dynamic handling and modification approval have not been inspected or determined.

Professional Advisory Notice

This document is an advisory report only and does not constitute engineering certification, compliance approval, or legal advice. Vehicle owners remain responsible for ensuring all modifications comply with applicable regulations. For engineering certification, consult a qualified automotive engineer. For compliance verification, contact your state road authority.