



Mechanical Failures List

Updated As Of 9/4/2014

Over the years, VMC has accumulated the following potential or common mechanical failures which can impact the safety of various vintage race cars. Should you be aware of any car specific failure which you feel are perhaps endemic to a particular car, please feel free to report them to the VMC for inclusion in this list. They can be reported by visiting the home page of www.the-VMC.com and using the email form on the home page or send your finding via email to any of the VMC officers listed on the home page.

ALL CARS

Weber IDF 44 (VW Engine) Fuel Leak - Also IDA & DCOE possibly impacted.

Source: Eric J Flachbart (VRG)

Problem: Factory installed lead plug (filling hole used for machining internal passage) can come out. During a race, the plug came out dumping considerable fuel right on exhaust. A web search revealed that it is not that uncommon. Also documented instance on a Porsche 914. Plug is often inboard and on bottom of carb, not easy to inspect or see.



Action: Drill and tap, replacing with threaded set screw or hex head bolt (and safety wired).

Carb leak failures —

Source: Bob Green (CVAR)

Problems:

Webers: Banjo fittings can vibrate. The Jet covers on the top of Webers have a wing nut that holds it on, vibration can cause this to come loose and can result in fuel spillage.

Carter/Eldebrock Carbs: Some people put a banjo fitting on the fuel inlet, again can vibrate loose and volumes of fuel released.

SU: Older SU's. Float bowls on Pre 1963 cars have banjo fittings that secure the fuel line and will vibrate loose. Bolts at the bottom of the fuel bowl that attaches to the base of the carb will vibrate loose and fall out, again resulting in volumes of fuel falling onto hot manifolds.

Newer SU's have float bowl overflow pipes on the tops.

Action: These pipes must be vented to atmosphere for proper operation however many people do not run lines from these pipes to a proper catch container away from exhaust. While a line from the overflow pipe is strongly urged, some clubs no NOT permit gasoline catch tanks because of the unique hazard an on-board quart of gasoline represents. Rather, a tube is required to route any overflow away from exhaust and all electrical devices and more safely dump overflow to the ground.

Solex: Solex's also have banjo fuel line fittings that can vibrate loose.

Action: Drill through wing nut ear and safety wire top of jet covers on Webers. Drill through edge of of banjo bolts and safety wire. If edge of bolt is too small for drilling then have someone weld a small tab on the bolt head for safety wiring. And finally cross drill and safety wire the bolts for the float bowls for the bottom of SU's.

PRODUCTION CARS

All cars

Source: 6/71 Sportscar (SCCA)
Problem: Leather hold-down strap failure
Action: Two systems for fastening hood should be used to prevent loss of hood.

AH Sprite and MG Midget

Source: 6/63 Sportscar (SCCA)
Purpose: Safety
Action: Add 1" rebound block in front suspension
Source: 6/63 Sportscar (SCCA)
Action: Heavy duty front (Q2334) and rear (Q2335, AHA5468) springs may be used.

AH Sprite and MG Midget

Source: 8/2002 report from RMVR
Problem: Rear Axle failure
Action: Poor after-market manufacture

AH Sprite and MG Midget

Source: 5/2014 report from CVAR
Problem: Rear Brake material delaminating from shoe
Action: Poor after-market manufacture - Only use riveted not glued brake linings

AH3000

Source: 5/2001 report from Gary Black (CSRG)
Problem: Front spindle failure
Action: Inspect for cracks and/or replace on a regular basis

Alfa Romeo

Source: 4/65 Sportscar (SCCA)
Problem: Failure of rear torque brackets on each side of rear axle housing mounts
Action: Inspect and reinforce

Alfa Romeo - 65 Guilia Sprint GT

Source: 11/2002 report from CSRG
Problem: Rubber drive donut failure - possible fatigue
Action: Frequent inspection and replacement

All 1965-69 Chevrolets (except Corvettes)

Source: 1971 DOT Bulletin #2-71
Problem: Left engine mount failure
Action: Inspect and replace.

"Ford" rear axles in Anglias, Lotus Cortinas and Cortina GT.

Source: 5/1997 letter from participant
Problem: Axle failure where bearing pushes onto axle

Action: Replace with stronger axles made from better materials

Ford Mustangs, Falcons and Shelby GT350

Source: 5/2000 Letter from racer/restorer

Problem: rear axles pulling out of bearings

Action: Replace with new axle shafts with heavy duty bearing assemblies

Source: 5/2000 letter from racer/restorer

Problem: Front spindle failure at bearing stub

Action: Replace with '70 Falcon, Fairlane, or Cougar; 71-74 Comet, etc.

Source: 5/2000 letter from racer/restorer

Problem: Broken and rusty welds

Action: Dip Unibody and stitch and seam weld to reinforce old welds.

Jaguar XK-120

Source: 2/2000 letter from participant

Problem: Original manufacturer steel disc wheel failure at centers

Action: Replace with Jaguar Mk-9 sedan wheels

Jaguar XK-120

Source: 2/2000 letter from participant

Problem: Rear axle breakage

Action: No known repair known. Magnaflux and observe frequently.

Lotus Elan

Source: 6/65 Sportscar (SCCA)

Problem: Rubber drive donut failure

Action: Inspect and replace

Source: 7/1997 report from RMVR

Problem: Rear stub axle failure

Action: Inspect and replace

Lotus Super 7

Source: 6/63 Sportscar (SCCA)

Problem: Chassis front end failure

Action: Add additional 3/4" o.d. x .048 mild steel tubes per manufacturer's drawing.

Lotus Super 7

Source: 2006 RMVR report

Problem: Rear Axle failure

Action: Regular magnafluxing. Avoid wider wheels and tires

MGA

Source: Mark Palmer, MG Vintage Racers' Newsletter

Problem: Failure of original disc wheels, both earlier "1500" style and later "1600" style

Action: Regular magnafluxing. Avoid wider wheels and tires

MGA

Source: Mark Palmer, MG Vintage Racers' Newsletter

Problem: Front hub failure on disc-wheeled equipped MGA's

Action: Regular magnafluxing. Avoid wider aftermarket alloy wheels and wider tires

MGA

Source: Mark Palmer, MG Vintage Racers' Newsletter
Problem: Front hub failure on wire wheel equipped MGA's
Action: Regular magnafluxing. Avoid wider wheels and tires

MG TD/TF/MGA

Source: Mark Palmer, MG Vintage Racers' Newsletter
Problem: Cracking where steering arm fits into stub axle
Action: Replace with later steering arms stub axles, etc.

MGA

Source: Mark Palmer, MG Vintage Racers' Newsletter
Problem: Front suspension king pin failure at base of threaded portion
Action: Regular magnafluxing. Fit later type MGB part. Avoid wider wheels and tires

MGB

Source: 6/63 Sportscar (SCCA)
Problem: Safety
Action: Front springs (AHA5789) may be used

Porsche

Source: 6/63 Sportscar (SCCA)
Problem: Safety
Action: Rear wheels spacers may be utilized when 60mm width front brakes are fitted.

Triumph GT-6

Source: 2006 RMVR report
Problem: Rear hub cracked - old age
Action: Regular magnafluxing - avoid wider tires and wheels

Triumph Spitfire

Source: 6/63 Sportscar (SCCA)
Problem: Safety
Action: Rear suspension camber compensator may be used

Triumph Spitfire

Source: 7/2002 report from RMVR
Problem: Front spindle failure just above lower A-arm attaching point at top of thread
Action: Regular magnafluxing and visual inspection

FORMULA AND SPORTS RACING CARS

All Formula Cars

Source: 11/1998 report from VARA
Problem: Failure of steering universal joints
Action: Inspect for proper assembly and repair as needed.

All Formula Vees

Source: 2006 report from CVAR
Problem: Drum brake failure - crack emanating from inspection hole
Action: Die ground inspection hole to remove casting imperfections inspect frequently before every event

All Formula Fords

Source: 6/71 Sportscar (SCCA)
Problem: Ball joint failure
Action: Install oversized washer in a position so that washer will retain yoke in the event of the ball joint failure.

Source: 1972 Sportscar (SCCA)
Problem: Cracks in steel wheels
Action: Inspect closely for cracks particularly in the area of stud holes and where the wheel center bears against the edges of the hub or hub adaptor.

Source: 8/2002 report from RMVR
Problem: Front upright failure (Triumph Spitfire) just above lower A-arm attaching point at Top of thread
Action: Magnafluxing and frequent visual inspection

Hawke DL-2 FF

Source: 5/1997 report from RMVR
Problem: Lower front "A" frame separated from spindle
Action: As lower trunion broke at internal threaded location, check all parts during assembly of components. Replace as necessary.

Lola T-70

Source: 2/2001 report from IEI
Problem: Suspected left rear A-arm failure
Action: Frequently inspect and replace entire rear suspension components at least every 10 years

Lola T-200 FF

Source: 10/1997 report from RMVR
Problem: Front stub axle failure due to machine work done on original part to compensate for wider American bearing width.
Action: Use proper sized components and do not modify original part

Lola T-200 FF

Source: 2006 report from RMVR
Problem: Fabricated front upright failure just above lower A connection
Action: Frequent inspection and magnafluxing

Merlyn FF

Source: 9/2000 report from RMVR
Problem: Rear stub axle failure near flange
Action: Frequently inspect and replace periodically

Royale Supervee

Source: 7/1997 report from RMVR
Problem: Failure of fabricated rear upright
Action: Have any fabricated parts done by a knowledgeable professional

Royale

Source: 11/2002 report from CSRG
Problem: Lower right rear heim joint failure
Action: Frequent inspection and replacement