



Fifth Gear

February 2009



www.torontoautosportclub.ca

Toronto Autosport Club

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The TAC MOTORSPORT CLUB OF TORONTO Incorporated, (known as the "Toronto Autosport Club") is a general interest motorsport club involved in rallying, Solo I, Solo II, ice racing, road racing and social events. Club Meetings are held on the third Wednesday of each month (except August & December) at 8:00 p.m. at the Fox and Fiddle: 1285 Finch Avenue West, one block east of Keele...

GUESTS ARE ALWAYS WELCOME !

FIFTH GEAR is the monthly publication of the Toronto Autosport Club. Articles concerning Club members' activities are of special interest and members are encouraged to submit their writings to any member of the Executive or send them to the Editorial Offices.

FIFTH GEAR is normally published on the Tuesday preceding the second Wednesday of each month. Certain scheduling changes will be made to accommodate major motorsport events which are of interest to the members.

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FROM THE PRESIDENT'S DESK

Here we are starting February. The Toronto Autoshow is on now, running from February 13 to 22. RSO has a booth with Targa Newfoundland and some TAC members are working at the booth.

The ice race season is half over now. Sure goes quick once it starts! There are still three weekends left, that gives you a chance to come to one of the events and see what goes on. Races are run on

Saturday and Sunday each weekend, passengers are allowed and Peter Clifford and I will take passengers. For that matter other drivers will do that also. The 6 races in the series are organized by six different clubs. TAC, PMSC, DAC, BARC, BEMC and TLMC.

The TAC event was first this year on January 24 and 25. We had about a hundred entries Saturday and Sunday. No incidents that I can remember other than the rad on my car springing a leak while the car was warming up. I figured that was the end of any racing until Paul Moore loaned me his car to run in class 14, awd second driver. Unfortunately that is not the class I would normally run in but it got me a chance to drive a Justy and have some fun. Thank you Paul. There is a picture of my attempted pass of an Audi 90 Quattro on the cover of this issue. Come to the meeting and find out what happened.

My count has 19 TAC members competing. I will do a summary next month of their endeavors. Results are available on the CASC website as is the ice race forum.

The next meeting club is at the Fox and Fiddle, as usual. Time of the meeting is 8:00 pm on Wednesday February 18. Come earlier and have dinner with other club members. See you there!

Dietmar



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the Soapbox Derby

...by Malcolm Elston

Quote of the Month:

"We're told cars are dangerous. But it's safer to drive through South Central Los Angeles than to walk there. We're told cars are wasteful. Wasteful of what? Oil did a lot of good sitting in the ground for millions of years. We're told cars should be replaced with mass transportation. But it's hard to reach the drive-through window at McDonald's from a speeding train. And we're told cars cause pollution. A hundred years ago city streets were ankle deep in horse excrement. What kind of pollution do you want? Would you rather die of cancer at eighty or typhoid fever at nine?"

P.J. O'Rourke [Age and Guile Beat Youth, Innocence, and a Bad Haircut.] 1995

Quietly (very quietly), the Rules Continue to Change:

Formula One has quietly dropped a requirement for engines to last three successive races this season.

Article 28.4 of the 2009 sporting regulations, posted on the governing International Automobile Federation (FIA)'s website in mid-January makes no mention of having to use the engines in sequence.

"Each driver may use no more than eight engines during a championship season," the article declares. "Should a driver use more than eight engines, he will drop 10 places on the starting grid at any event during which an additional engine is used."

There are 17 races this season, starting in Australia on March 29. An FIA spokesman confirmed the new rule would allow drivers to use their eight engines in whatever sequence they wished.

A Ferrari spokesman said that some of the details concerning the application of penalties had still to be clarified, however. The FIA's world motor sport council said in a statement last month that there would be an eight engine quota per driver – but added that the three-race rule previously agreed in November would remain in force.

Drivers had to make their engines last for two races in a row last season or incur a 10-place penalty, although they were allowed one 'free' change.

And here's another one...

Under the new regulations, the driver can also – for the first time – adjust the front wing flaps up and down from inside the cockpit twice a lap during the race by pushing a button on the steering wheel.

"During the lap if you have some problems in some sectors you might change it (the wing setting), but I don't think its a powerful tool to increase the opportunities for overtaking," commented Robert Kubica (driver, BMW Sauber).

Too Bad, So Sad;

Outgoing McLaren team principal Ron Dennis has ruled out the possibility of replacing Max Mosley as president of the FIA

Mosley's term of office is set to expire later this year, although the 68-year-old has yet to decide whether he intends to run for the position once again. Former Ferrari team principal Jean Todt has also been linked with the job.

When asked whether he would consider running, Dennis was unequivocal in his response. "I feel very strongly that no senior member of any Formula One team should ever go to hold a senior position within the FIA," he said. "Anybody who's in a position of leadership of a company has to live, sleep and breathe that brand, and I think it would be impossible for me – even though I consider myself extremely disciplined – to be completely impartial regarding all the teams.

"I don't think it's possible for anyone who's led a successful team, frankly, and it would therefore be inappropriate for me."

America Enters F1 (!?)

American engineer Ken Anderson (former Williams team manager) and well-known TV commentator Peter Windsor are trying to form an American Formula One team, according to a report on the Autosport website.

Anderson has an impressive racing resume, having served as the now defunct Ligier Formula One team's technical director. He also held the same position with Chip Ganassi's and A.J. Foyt's Indy Racing League teams, and also designed the original and subsequent G-Force Indy Racing League chassis.

Autosport sources claim the team plans to build its car in North Carolina, something that is now feasible since in-season Formula One testing is banned. The latest round of cost-cutting measures in the sport, and the availability of relatively affordable "customer" engine supplies, also play a large role in USF1's ambitions.

More on KERS:

As regular Derby readers know, the new KERS system (which provides the cars with a burst of extra power by recovering energy generated under braking) is no longer mandatory for 2009, and some teams have said they might start the season without it.

Williams developed two versions, one with a flywheel and the other with a battery, and are testing both for speed and reliability before making a decision whether to use either.

continued...

Trust me – the KERS issue will be a key factor / wild card in the 2009 F1 championship, and in the future of F1. In my (never humble) opinion, it is the single most important Formula One development in the past thirty years.

Well, why Not?

Lord Mandelson's \$2.3 billion bailout of the British car industry – ostensibly aimed at shoring up jobs in towns such as Swindon and Luton – could end up being spent in the pit lane of Monte Carlo. Honda's Formula One team confirmed it was in talks to avail itself of taxpayer-funded loans...

Honda Racing became the UK's first and highest-profile casualty of the global collapse in spending on cars in December when its Japanese parent company announced it would withdraw funding.

Nick Fry, the team's CEO, has since been seeking a buyer for the team, which has 700 employees at its Brackley base and an annual budget in the region of \$200 million. Honda Racing has confirmed talks with Lord Mandelson's Department for Business, Enterprise and Regulatory Reform (BERR).

"We have had meetings with BERR over the future of the team on several occasions over the past month," said a Honda statement. Asked whether the team would qualify for the support package, a spokeswoman for BERR said: "There is no reason why Honda Racing couldn't apply.

"We expect any company in the automotive industry or in its supply chain with a turnover of \$50 million or more to qualify (for the loans) if it has a viable project to deliver the objectives of the support package. All applications will be considered on a case-by-case basis."

The spokeswoman added that the government's four key criteria for companies to qualify were having a turnover in excess of \$50 million, being at the cutting edge of innovation, reducing carbon emissions, and creating jobs.

Honda Racing qualifies on all

counts. It easily exceeds the turnover requirement; F1 is innovative almost by definition, as each year brings advances to propel the racing cars faster; the sport is committed to reducing its carbon emissions; and success for Honda Racing would lead to an increase in its workforce.

January news reports suggested that if a buyer could not be found by February 1 the team would have to be wound up. Honda Racing was keen to dismiss such suggestions, talking of its' optimism that a saviour would be found.

A taxpayer-backed support package for the team would be likely to generate more interest. For now, Honda Racing is concentrating on getting their cars onto the grid for the first grand prix of the season – Melbourne, on 29 March.

Bernie's Savings & Loan:

Bernie Ecclestone, Formula One commercial director, has told the press he advanced the Williams team \$14.5 million after it committed to stay in the series. The Financial Times says Williams made a loss of \$50 million over the past two years, but the \$14.5 million advance has helped it secure its budget until the end of 2010.

The paper also reports that \$130 million has been set aside as an incentive for the nine F1 teams to sign the Concorde Agreement, which seals their entry in the series, but which expired at the end of 2007. The teams now race under a memorandum of understanding agreed in 2006 with CVC, the private equity group which controls F1 – but this is not legally binding.

Williams has not yet signed the Concorde Agreement, and Ecclestone described the \$14.5 million advance as a "pre-payment". Williams, along with the rest of the teams, will be due more money should they sign the contract. Prize money under the MOU increased from 25 per cent to 50 per cent of the sport's profits, with payments beginning last year. However Ecclestone has questioned the sense of making the payments without a contract.

Bernie Ecclestone has toughened his stance on the distribution of Formula 1's revenue - warning the teams that they could receive less, not more, of the sport's profits.

The Formula One Teams' Association has hinted that it will ask Ecclestone to give the participants more than the 50 percent of F1 income that they currently receive.

Last week Ecclestone suggested that the new cost-cutting regulations should actually mean the teams required less of the revenue from television deals and venue payments, and he reiterated that hardline position in late January.

"We don't need to pay more," he told the Financial Times. "We've got to give them less. "They could ask for more money but they won't get it."

He said the teams were at fault for dawdling over negotiations about the future shape of the sport.

"In what I call the good old days, all we had to do was have a chat with the people who had all the money," said Ecclestone.

"But now they come along and they've got lawyers and masseurs and they can never agree on anything."

Rally Timing enters F1:

Formula One's governing body has ditched a controversial rule that led to drivers being penalised for pitting during the early stages of the safety car being deployed in a race.

The revised rule will now allow the pits to stay open, with new software regulating the speed of drivers returning to refuel. "The rule introduced in 2007 was a bad one, and we've gone back to the 2006 regulations," Formula One race director Charlie Whiting told the International Automobile Federation (FIA) website (www.fia.com) in late January.

"The only difference is we intend to implement a minimum time back to the pits," he added. "When we deploy the safety car, the message will go to all the cars, which will then have a "safety car" mode on their ECUs (electronic control units).

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"As soon as that message gets to the car, it'll know where it is on the circuit, and it will calculate a minimum time for the driver to get back to the pits. The driver will have to respect this and the information will be displayed on his dashboard."

In other words, an elapsed time into a checkpoint.

The rule closing the pits was introduced for safety reasons to prevent drivers speeding through an accident zone in their haste to gain an advantage by getting back to the pits and refuelling while the safety car was on the track.

Renault's Fernando Alonso ended up in hospital after the 2003 Brazilian Grand Prix when he ploughed into the wreckage of Australian Mark Webber's Jaguar while the safety car was deployed.

The race was then stopped, with Alonso taking third place despite receiving medical attention.

Whiting said new software developed over the course of last year would now make it impossible for drivers to return to the pits faster than the on-board display permitted. The FIA faced pressure from teams to change the regulations after several drivers were penalised last season when they had to pit under safety car conditions because their cars were running out of fuel.

Alonso won last year's Singapore Grand Prix for Renault after a lucky break with the safety car, brought out after his Brazilian team mate Nelson Piquet had crashed. Alonso had already pitted and was able to move up the field and into the lead when rivals including Williams' Nico Rosberg, who finished second, were punished for stopping when the pitlane was closed.

But not all the money flows to Bernie....

Formula One drivers have deferred signing their superlicences for the current season following the latest price increase imposed by the FIA.

As reported here last year, motor sport's world governing body in-

creased the fee for the superlicence – the document that allows drivers to compete in Formula One – from \$1,626 to \$9,430.

The cost of each point won also rose from \$430 to \$1,885. The FIA said the hike was necessary to help cover the escalation in costs of safety measures in F1, primarily for the benefit of the drivers. After a considerable amount of discontent, and despite suggestions of a strike ahead of the British Grand Prix, the drivers eventually backed down.

For '09, the FIA have imposed a nominal \$377 increase (to \$9,798), and on each point by \$94.

With a further levy of \$2,564 for the compulsory insurance, world champion Lewis Hamilton will this year have to pay a grand total of \$206,416.00 for his license to compete in F1.

However, the Grand Prix Drivers' Association, which represents the majority of those who race in the sport – Hamilton is not a member – are unhappy at the latest increase.

They have told the drivers not to sign their licences until the issue is resolved, with an exchange of emails having taken place between the GPDA and FIA president Max Mosley of late.

Mosley has indicated he will consider the matter, but only if the drivers provide proof of income, a proposal no-one on the grid would entertain. The GPDA have now asked the Formula One Teams' Association to look into the issue at their next meeting early next month.

On a related note, Nick Heidfeld believes Formula One drivers should be prepared to race for less money, as the sport tightens its belt.

Ferrari's Felipe Massa recently said he would not be happy with a pay-cut, arguing that the cost of drivers is proportionately small in the context of entire racing budgets.

His teammate Kimi Raikkonen, meanwhile, who is F1's highest paid driver, refused to comment.

But Nick Heidfeld, who drives for BMW-Sauber, said in interview with spox.com that drivers cannot hide from the realities of their sport. The 31-year-old German admitted that driver salaries are significant when contemplating F1 team budgets.

"Therefore we will have to adjust ourselves to it, just like everyone else," said Heidfeld. "At the moment it is not really an issue, and I hope that there are other ways so that nobody loses their job – and the driver salaries stay the same."

January Field Notes:

Sat., January 17th: Hall 1 of the Toronto International Centre on Airport Rd. was the scene for the third annual Toronto Motorsports Expo.

The hall was quite full by early afternoon, with some 70+ Exhibitors, lots of fans, and of course the opportunity to meet and talk with Jacques Villeneuve, Ron Fellows, and other high-profile members of the Canadian motorsports scene.

There was a broad cross-section of activities represented, from drag-racing to karting, 'bikes (from motocross to sport), and a healthy cross-section of stock cars, formula cars, rally cars, and regional

race cars. A lot of nice equipment, well-displayed, and a real uplift for those who have had quite enough snow, thank-you.

Interspersed amongst the show booths were a scattering of vendors, from the ubiquitous 'fake Chamois' man to some really innovate items like 'Hub Stands' (available through Mantis), and an incredibly small and very versatile video camera that was about the same size as a half-deck of cards. Waterproof, with mounting brackets – for \$249.

So I enjoyed myself for a couple of hours, which – in my opinion – was

good value for the \$15 admission charge. It was the first time I had attended this relatively new event, and while I probably won't make it an annual pilgrimage, I will go again. Nice to run into lots of old friends and have a chance to catch-up with them, and good to see the whole diversity of active Canadian motorsport all in one venue.

I did snap a lot of pictures, but they didn't come out very well – I'm transitioning to digital photography, and clearly I need more practise, and maybe some training. 'scuse.

CASC were very evident, with a large, double-sided booth, so I don't see this as a 'Club' show, although the thought did cross my mind that if any one multi-discipline Club ought to be present, it probably should be TAC. Something to think about, anyway.



The CASC booth at the Canadian Motorsports Expo.

TAC Ice Race Weekend: January 24 and 25 was the TAC-organized season-opener, and I was glad to be invited by Corey Cole to come out and help. It's been far too long (6 or 7 years) since I last volunteered to stand on a snow bank – waving flags energetically (to help maintain my circulation) – while simultaneously being engulfed in a vortex of high-speed ice chips, flung by the equally enthusiastic drivers in the studded classes...

So, good to be back – and have things changed! The flag marshals are now replaced with lights, and those lights are controlled from inside a small infield trailer! This is positively civilized; much, much warmer – less shrapnel, too.

There was a lot of pressure on TAC that weekend, since no one can actually remember if TAC has ever run the season-opening event before (we probably have, but maybe that was back in the 'eighties or something)! Usually, TAC runs a mid-to-late season event, and often the season-closer... either way, by then all the systems are in place, and a few race weekends have already been completed, and then

TAC steps up, does its thing – and we look really good.

So going first for the '09 season downloaded a lot of expectations onto the whole organizing crew to get things done right, on time, and to TAC's usual high standards...

I'm here to report that the objectives were met, and Our Club came through with colours flying high!

Andy Hughes was the TAC point-man, and he had a couple of curve-balls chucked at him just as the weekend drew close; when the volunteer Clerk of the Course backs out on you on Tuesday, you definitely have a problem. Andy rose to the challenge, made a few calls, and the replacement (Nick Beck) was on board by Wednesday evening.

Another great example of TAC teamwork! (and a small 'boo' to the Clerk who Wasn't... you know who you are!) TAC and Andy made the impossible, do-able.

At the drivers' meeting on Saturday morning, I was a little surprised to hear myself named 'Chief Marshall', since I thought I had just volunteered as a flagger (OK, now

– a switch-operator). Of course I accepted the second gig with a smile, and that was that – nothing further was needed from me with that hat on, since the event ran so well! Again, thanks Andy!

The social side was fun, too. I was sharing a cottage with three old friends (Rob & Corey & Eli, and two new ones – Jason & Chris) and the six of us entertained each other via Guitar Hero (apparently, I Suck), Wii Mini-Putt (at that, not so bad), and many tall tales, much alcohol, and vast amounts of junk food. Urrrp. 'scuse.

Friday night, the 'All-you-can-eat Roast Beast' meal at the Noble, with the miraculously shrinking plates; every time you order some more, your new plate is notably smaller in diameter – but still covered with food. So you start with a 10" dinner plate, go to a 7" dessert plate for your seconds, then a 5" side-plate... rumours have it that round four is served on a small saucer...

Saturday night was a TAC-fest at Mikes restaurant, with tons of Chinese food, and a lot of laughter. The occasion was even more festive because it turned out to be

Nick Beck's birthday, although if the truth be told he was looking a little exhausted after a very long and intense day at the track.

Weather? Clear, sunny and a bit brisk at around -24°C on Saturday morning, but it improved during the afternoon. Sunday was overcast, with the odd sunny break, but quite balmy, in the -9°C range. The track held together, the snowbanks did their job, and the Kinsmen Canteen never ran out of Hot Cider.

Igniting the Trailer:

I've mentioned the trailer with the switch-gear for the lights. It's a very nice trailer, about 5' x 6', with big windows on all sides so the switchers can see the zone(s) they control. Inside are three switchers, one of whom doubles as the grid-marshal. The official starter stands on the front porch of the trailer while doing that job, then steps inside to warm-up occasionally.

Warming-up is made possible by two small, propane-powered heaters... one of which simply could not be woken from its' summer of slumber. So the smaller one was connected to the 20lb propane tank (also inside the trailer), and we made do with that.

A passing thought I had about the safety of propane burners inside an enclosed structure was just that



The trailer where the lights are controlled.

– a passing thought.

However, mid-afternoon I simultaneously became aware of two things; a steady hissing noise, and the smell of propane. Looking down, I realized that the gas hose had shifted, and it was now pressing itself against the hot face of the heater... and it was melting, FAST.

While probably setting a personal best for reaction time, I dove toward the propane tank and cranked the knob off, thereby single-handedly saving TAC the cost of a new replacement trailer, and three funerals.

As recompense, we spent the rest of the afternoon without heat.

Igniting Myself:

A replacement hose was found and purchased late on Saturday afternoon (kudos, Corey!), and the larger (but so far completely uncooperative) heater returned to the cottage with us for a good thawing-out.

Sunday saw us with restored heat, and much more of it. Although the heaters are physically comparable in size, the larger one puts out twice the heat of its' slightly smaller trailer-mate. Who knew?

While observing the Sunday races, I inadvertently stood too near the large heater.

A funny smell, a growing discomfort in my left calf... and – YIKES! – I was attempting to set myself on fire. My Columbia Sportswear snow pants melted, and their PCV had welded itself to my Marks' Work Wearhouse jeans... God Bless my 'Hot Chilli's' long-johns for saving me from the ultimate in de-foliation!



The Mk. 1 lap-counter... every time the leader goes by, move one match from the left side of the window-sill over to the right side...



The small heater, showing where the rubber hose met the heat, and melted!



Just before lunch on Saturday, a serious crash occurred in the last corner. The red MR2 'stuffed', and then was hit twice... the second time by Tom's Mustang. Both drivers required neck braces, and a precautionary trip to the Minden hospital. Both were OK, but their cars are probably finished.

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TAC Ice Race, Sunday January 25



TAC Ice Race, Saturday January 24
(Photos by Malcolm Elston)

ON THE COVER:
TAC ICE RACE, Dietmar in the Justy

!! CORRECTION NOTICE !!
Inserted in this FIFTH GEAR you may find a label
marked 'JANUARY'. Please use this to correct the
front cover of your last-month's FIFTH GEAR!

British scientists solve cliffhanger at end of 'The Italian Job'

Friday, January 23, 2009

LONDON - Some of Britain's brightest minds have resolved one of the country's biggest cinematic cliffhangers: How the robbers could have got away with the gold at the end of **"The Italian Job."** The 1969 heist film ends with the robbers' gold-laden bus teetering over the edge of an Alpine road, with their loot - and their lives - in doubt.

On Friday the Royal Society of Chemistry offered fans a little closure, announcing the winner of a competition to find a scientific solution to their predicament.

"Like many people, I watched the film from when I was a young boy," said John Godwin, the winner. "It's one of those classic British films, with great actors - Michael Caine, Noel Coward, Benny Hill - and a great car chase, and at the end of the day they've done all the hard work and it seemed a waste to leave them hanging on that mountainside."

"The Italian Job" follows Charlie Croker, played by Caine, as he assembles a crack team of likable crooks to pull off a complex plan to steal a stash of gold in the Italian city of Turin. The ensuing car chase - which cuts across the rooftop test track of Fiat's Lingotto building and down the steps of Turin's Gran Madre di Dio church - ranks among the most gripping in movie history. But things end badly when the gang's getaway bus slides halfway off a mountain road on its way to Switzerland. The bus seesaws precariously, with the men gathered at the front and the gold weighing down the back, which is hanging over the cliff. A wrong move could send the bus tumbling into the chasm below, but Croker says: *"Hang on a minute lads - I've got a great idea."* Then the credits roll.

Royal Society of Chemistry Chief Executive Richard Pike said the competition to find an ending to the movie that preserves both the gold and the men was aimed at *"promoting*

science and chemistry to a wider audience in an entertaining way," adding that some 2,000 people had tried their hand at extricating Croker's gang. Some of the more novel solutions including burning the asphalt to glue the bus to the road or dissolving the gold with acid, he said.

Godwin said his fix took him an afternoon to work out:

-Break the windows at the back to reduce weight.

-Break two windows at the front, hold one gang member upside down out of the window to deflate the front tires and stabilize the vehicle.

-Drain the rear fuel tank through an access panel at the bottom of the bus.

-Gang members leave one by one from the front, collecting stones to replace their weight.

-Keep adding stones until someone can safely go to the rear to retrieve the gold.

Godwin said gathering the data he needed for his equations, like the fuel efficiency of a 1964 Bedford VAL14, the weight of a window or the price of gold in 1968 - needed to establish the weight of the haul - was fairly easy. "The Internet's a great place," he said.

He isn't the first to suggest a solution.

Caine himself proposed a much simpler idea in a British Broadcasting Corp. documentary six years ago - albeit one that leaves the hapless gang short of their precious haul.

"The next thing that happens is you turn the engine on," Caine said. "You all sit exactly where you are till all the petrol has run out, which changes the equilibrium. We all jump out and the gold goes over the cliff."

CLIFFHANGER SOLUTION

To:

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Submitter: John Godwin

Objective

To modify the equilibrium of the balanced coach by enough to allow one member of the team to alight. Once that member is on the ground, they can then locate and pass in appropriate rocks and small boulders from the neighbouring mountain side to add additional weight to the front of the vehicle. This, in turn, will allow one of the team to approach the gold without fear of the rear or the vehicle dipping down over the cliff edge, to retrieve the gold, one basket at a time.

Method

There are three activities required to alter the equilibrium of the vehicle sufficiently for the objective to be achieved:

- a) Vehicle glazing "modification"
- b) Front wheel "modification"
- c) Fuel discharge

It is assumed, as widely depicted, that the 1964 Bedford VAL14 with Harrington Legionnaire bodywork (36' in length) is perfectly balanced on the edge of the cliff.



Copyright acknowledged. Source: AP (via Google)

Step 1: Vehicle Glazing Modification

The "toughened" glass fitted to Harrington bodied shatters into lots of small pieces. Using any resilient object in the coach, for example, the heel of a shoe, the third full length window on each side (total of two), immediately above the sign writing, would be broken outwards, with the shattered glass pieces falling away from the vehicle. In the image under Step 3 (fuel discharge) - Charlie Crocker is already level with these windows, and would have no problem in undertaking this task.

This, in itself, would have a small weight saving of approx 60 kg (each window weighs approximately 30 kg each), however this action is more importantly a precursor for the next step.



Having removed window 3 (as above), the next step is to reach around and break inwards window number 2 (above the second front axle), and then in turn break inwards smaller window number 1 (above the first front axle). The reason for breaking the windows inwards is to retain much of the weight of the glass within the vehicle.

Estimate of time: 5 minutes

Step 2: Front Wheel Modification

The four 16" wheels at the front of the coach are acting as "springs" every time the coach moves, the air in the tyres exaggerating the rocking motion. Additionally, they are preventing the front of the coach from touching the ground, and reducing the counter-balancing effect of the combined weight of the crew who have gathered at the front of the coach.

With windows 1 and 2 now removed, one member of the team can be lowered, in turn, from the window to remove the air from each of the front tyres via the valve. This will make the coach more stable, and will reduce the effect of the vehicle rocking in later stages of the rescue plan.

Estimate of time: 10 minutes

Step 3: Fuel Discharge

The Bedford VAL is fitted with a 40 gallon diesel tank, which sits under the floor towards the rear of the vehicle. The fuel filler pipe, which is fitted towards the front of the tank, is clearly visible below under the sign-writing:



The vehicle would have had a long journey ahead of it once it left Turin for Switzerland, and the fuel tank would have been full at the start of the journey, avoiding the need for refuelling along the way.

It is documented in a number of places, including www.theitalianjob.com, that the coach skidded off the road at Ceresole Reale, which from wikipedia.org is approximately 50km north east of Turin. The Bedford VAL typically returned an fuel consumption of 15mpg see:

(<http://wakefield-files.freehostia.com/bedfordval.htm>).

Being generous and assuming 4 gallons had been used by the point of the accident (allowing for mountain roads, etc), that would leave 36 gallons in the coach's tank.

$36 \text{ gallons} \times 4.55 = 163.8 \text{ litres} \times 850\text{g per litre} = 139.23 \text{ kg of fuel remaining.}$

Removing this fuel is key to surviving this predicament. From the criteria set of a maximum of 30 minutes, there is simply not enough time to (a) leave the engine running and burn the fuel off, or (b) remove the engine cowl (to the left of the driver) and the output pipe of the fuel pump and remove the fuel that way.

(continued)

They key to solving this issue is visible in the photograph below:



Underneath Charlie Crocker is visible one of the access panels, which sits almost on top of the fuel tank. This is easily removed, and access to the fuel tank obtained. The fuel tank drainage plug should be removed, and the fuel will start to flow away. This process could be hastened by making additional holes using any sharp piece of metal in the coach - most probably one of the fuel pipes from the engine compartment.

Estimate of time: 10 minutes

(continued)

The Calculation

Current Situation (as at end of film)

Fuel on coach

The lowest point of the fuel tank is 2/5 of the way from the fulcrum point of the coach. Coach length = 36' = 10.97 metres, so half the coach = 5.48 metres. Lowest point of tank = 2.19 metres from the balance point.

Calc #1: Force x distance = 139.23kg x 2.19m x 9.8m/s = 2,988N

Gold on coach

In 1968, with gold costing \$39 per troy ounce, the "four million dollars" would have weighed approximately 3200kg. This was located approximately 1.5 metres from the rear of the coach (as per film stills), or 3.98 metres from the fulcrum:

Calc #2: Force x distance = 3200kg x 3.98 x 9.8m/s = 124,812N

Men on coach

Assuming 10 men on board the coach – average 90kg each (3 Minis – 2 crew each, one driver, Charlie Crocker and two others) – 900kg. However, at the end of the film, Charlie Crocker is on the floor, his weight equally split either side of the fulcrum. Of the remaining nine men, they are standing approximately one metre from the front of the coach, or 4.48 metres from the fulcrum:

Calc #3: Force x distance = 810kg (9 men) x 4.48m x 9.8m/s = 35,562N

For the vehicle to balance, the downward force of the engine, gearbox, front axles etc can be calculated from the above (the vehicle is front-engined):

$(124,812 + 2988) - 35,562 = 92,238\text{N}$

Proposed Situation (to achieve Objective stated above)

Fuel on coach – reduced to zero (see Step 3)

Gold on coach – same as above (124,812N)

Personnel: by bringing Charlie Crocker back to the very front of the coach (60 cm from edge, or 4.88 metres from fulcrum), with the other 9 men, the calculation changes as follows:

Calc #4: Force x distance = 900kg (10 men) x 4.88m x 9.8m/s = 43,041N

So:

- "road" side, force = 92,238 (engine etc) + 43,041 (men) = 135,279N
- "air" side force = 124,812N (gold, no fuel)
- difference = 10,467N

This does suggest that the front of the coach is heavier than the rear, and this is confirmed by the scenes shown in the film.

Is this enough to allow one team member to safely leave?

Rework calculation 4 above for 9 men (if one is to leave the coach)

Calc #5: Force x distance = 810kg (9 men) x 4.88m x 9.8m/s = 38,737N

So:

- "road" side, force = 92,238 (engine etc) + 38,727 (9 men) = 130,965N

- "air" side force = 124,812N (gold, no fuel)

So YES!

(noting, however, that there is not enough scope for any more than one man to leave at once)

What next?

One man can now safely leave, and would quickly be able to source enough loose ballast (rocks, etc, from the adjacent mountainside) which would be passed through the door to the remaining crew in the vehicle, and stacked towards the front. So how much would be needed?

To remove the gold, assume that one man can walk down to where the gold is at the rear of the coach:

Calc #6: Force x distance = 3290kg (gold + 1 man) x 3.98 x 9.8m/s = 128,323N

So the new "air" side force of 128,323N remains less than the force exerted at the front of the coach (calculation 5, with 9 men) of 130,965N.

So in theory no additional weight is required, and as each basket of gold is rescued and moved to the front of the vehicle the front end becomes increasingly heavy as the rear end lightens.

BUT - adding ballast (rocks) before the gold rescue attempt starts would be prudent, as the two forces remain very close without the additional weight being added.

Additional ballast (rocks) would be required to counteract the weight loss of each basket of gold as it is removed from the coach, and also to counteract the weight loss of each member of the team as they alight from the coach.

PS - what happens then? Separate problem I suppose, but waiting for a passing motorist and either hijacking (feels quite bad) or buying their vehicle with stolen gold (still feels bad, but less damage and no blood) would see the men on their way to Switzerland

John A Godwin

Minutes of the TAC meeting

Wednesday January 21, 2009

Meeting opened at 8pm
Minutes recorded by Paul Moore

Present: Dietmar, Peter Clifford, Andrew Kinal, Paul M, Brian Sibbit, Janet Jones, Rob Jones, Alex Ling, Rita M, Nick Beck.
(not sure I got everyone's name. Please check Andrew's book for names of all members present. There was also one guest...Dan McKellar? He also signed the book).

Mr. Alex Ling, Member #1, was introduced. Alex had some valuable comments to offer regarding attendance at our Ralliettes and other rallies.

Location: Fox & Fiddle.

Previous minutes from the November 2008 meeting were accepted.

Membership: 38 primary, 28 family, with 3 new members.

Competition:

- the January Jaunt was Jan 3rd, with 21 entries. Next year the Jaunt will be moving to January 16th.
- TAC will be organizing a rally for the MLRC Mini Rally series.
- MLRC will be producing a "Rally 101" website for beginners.
- Ice Racing starts this weekend, volunteers needed. Nick Beck will be Clerk, having received a new Clerk's licence.
- Discussion on locating the TAC banner for the weekend.

Financial:

- January Jaunt entry fees received.
- All payments made except CASC affiliation; ice race is paid.
- TAC t-shirts will be available for sale at Minden.
- Balance \$17356.25

Old Business: none

New Business:

For Sale:

- 1992 Integra complete tail lights, contact Peter Clifford.
- Tire balancer/changer, \$1000. Brian.

Loonies in the Bus: Dietmar

Meeting adjourned: 8:45pm.



2009 Membership Application

Mail: 14 Princess Anne Crescent,
Etobicoke, Ontario, M9A 2P1

Email: registrar@torontoautosportclub.ca

- New Members – Single or Family \$50.00
 Renewal Members – Single or Family \$50.00

JOIN or RENEW ON-LINE : JOIN-> www.casc.on.ca/joinAClub.php
 RENEW-> www.casc.on.ca/welcome.php

- TAC Membership includes 2009 CASC-OR (Race, Solo) & RSO (Rally) affiliation
- Family rate limited to family members domiciled at the same mailing address.
- Renewals : Indicate membership number # (if known)
- 2008 membership numbers will be reserved until February 1st, 2009.
- All memberships expire December 31 2009. Date: _____

1st Member _____ [#] Home Phone (____) _____

Address _____ Bus. Phone (____) _____

_____ Postal Code _____

First Member _____ [#] email: _____

2nd (Family) Member _____ [#] email: _____

3rd Family Member _____ [#] email: _____

4th Family Member _____ [#] email: _____

5th Family Member _____ [#] email: _____

The Newsletter FIFTH GEAR, is available on the website. Check here if you do NOT want a mailed copy

PAYMENT METHOD:

Cash Cheque # _____ MasterCard # or VISA # _____

Card Expiry Date: ____/____ Cardholder Signature _____

Amount: \$50 Other \$ _____ **TOTAL \$:** _____

TAC works only because volunteers make autosport happen!

So that we know *your* interests (and where you can help out) and can therefore plan the right mix of events – please complete the information checklists below ...

Please indicate your 2009 Please indicate three areas that you can autosport interests help with in 2009

- | | |
|--|---|
| <input type="checkbox"/> Solosprint (Solo 1) | <input type="checkbox"/> Solo (1/2) organizer / worker |
| <input type="checkbox"/> Autoslalom (Solo 2) | <input type="checkbox"/> Road Rally/Ralliette organizer |
| <input type="checkbox"/> Navigational rallying | <input type="checkbox"/> Contract Rally organizer |
| <input type="checkbox"/> Performance rallying | <input type="checkbox"/> Rally Checkpoint/Green-crew |
| <input type="checkbox"/> Road racing | <input type="checkbox"/> Social Event Organizer |
| <input type="checkbox"/> Vintage Racing | <input type="checkbox"/> Ice race organizer / worker |
| <input type="checkbox"/> Ice racing | <input type="checkbox"/> Event timing / scoring |
| <input type="checkbox"/> Karting | <input type="checkbox"/> Performance Rally organizer |