



Coordinating European Council for the Development of Performance Tests for Transportation Fuels,
Lubricants and Other Fluids.

CEC ACTIVITY REPORT JULY - DECEMBER 2017

1. Chairman's Introduction

When this 2nd CEC Activity Report – covering the 2nd half of 2017 – will land in your inbox, 2018 will already have started: on behalf of the CEC MB and the CEC Secretariat I wish each of you an outstanding New Year!

Thank you for your positive reactions we received with the first issue of the CEC Activity Report covering January to July 2017.

The CEC Management Board hopes this Activity Report will give you a better flavor of our work and the progress we make. We realize that our stakeholders are quite diverse and therefore please let us know what *you* think of this Activity Report and please let us know (info@cectests.org) how we may further increase the added value for *you personally*. We hope to hear from you.

Best regards,

Frank Stunnenberg

2. List of Board Members and Responsibilities

2.1. List of Board Members

Frank Stunnenberg	ATC (Chairman)
Mike Conroy	CONCAWE (Vice-Chairman)
Paul Greening	ACEA
Bengt Otterholm	ACEA (succeeds Anders Roj)
Paul Decker-Brentano	ACEA (succeeds Suhair Abelhalim)
Adrian Fitzpatrick	ATC
Thomas Buenemann	ATC
Volker Null	ATIEL – Volker will be succeeded by Neil Briffett and Nick Clague per 1/1/2018
Vincent Panel	ATIEL
Maximilian Staudacher	CONCAWE

I thank Suhair, Anders and Volker for their contributions and welcome Bengt, Paul DB, Neil and Nick on the CEC Management Board.

2.2. Management Board Responsibilities

Issue	Leader	Backup	Admin, Secretariat
General Administration, Finance	Frank	Mike	Kellen
Monitoring Lubricants Groups (SG)	Vincent	Thomas	Kellen
Monitoring Fuels Groups (SG)	Max	Mike	Kellen
Monitoring Transmissions (SG)	Frank	Nick	Kellen
Monitoring Reference Fluids Groups +	Vincent (Lubes) / Max	Mike (Fuels)	Kellen

Rating	(Fuels)		
Constitution	Frank	Mike	Kellen
External Communications	Frank	Paul G.	Kellen
Quality/SDG	Vincent (Lubes)/ Mike (Fuels)	Max (Fuels)	Kellen
Lubricant Tests:			
TDG-L-107 - Sludge	Adrian	Vincent	Kellen
TDG-T-108 - Pitting	Frank	Vincent	Kellen
TDG-L-114 – Toyota TCCD	Paul D-B	Bengt	Kellen
Fuel Test Development:			
TDG-F-113 - IDID	Max	Mike	Kellen
SPG – GDi Wear	Nick	Vincent	Kellen
SPG - Low Soot Wear	Thomas	Bengt	Kellen
SPG – Corrosion Test	Paul DB	Bengt	Kellen
Confidentiality Issues	Frank	Mike	Kellen
CEC Future Role	Frank	Mike	Kellen

3. Overall activity report – timeframe July-December

3.1. TDG-F-113 – DISI test

The engine is now installed and phase 1 is underway. The initial validation runs are in line with the expectations. The development of the dirty-up reference fuel is on the critical path and has not yet shown fouling at the desired level. Therefore work on countermeasures has started and is ongoing.

3.2. TDG-L-107 – M271 Sludge Test

The low calibration oil test results gave good results. Everything went well until the high calibration oils were run. The last test was aborted at 240 hours and the proposed 280 hours would not have been reached. There does not appear to be discrimination between the reference oils but this may be due to the low oil level in the engine during the high reference test. The oil was analysed but no problems were found. The oil pump was checked as well as the fuel dilution and again these were as expected.

Several scenarios were proposed and discussed in the TDG meeting on October 18th and the TDG agreed to use the remaining funds to evaluate the oil consumption at each test condition. This can be done real time by APL. Some test conditions may need to be adjusted slightly based on this information. The whole point is to run the engine at conditions that consume less oil so that there is more oil in the engine so that all engines can get to the end of the test.

This work will be completed by the end of February 2018. A new fuel batch will also be blended once the test conditions are finalised. The test development will restart once the oil consumption work is complete and is foreseen to be completed by the end of April.

3.3. TDG-T-108 - Pitting Test

Candidate oil A has been selected as low reference oil and the results look very promising with all runs failing due to typical pitting and low micro-pitting. One lab showed high runtime with micro-pitting and is doing internal verification. The RR with high reference candidate oil has started and data from 5 labs is available, showing also good results, with the exception of one lab that showed significant lower running time. Internal verification is done here as well.

In October the group held their meeting where the results were discussed. Results show discrimination between low and high candidate oils in running time until pitting failure. For high reference oil a minimum running time may be specified to allow a clear differentiation with the low ref. oil. Preparation started by SDG Officer on low ref. oil to establish precision data and limits. All the open issues of the draft test method should be addressed and finalized at the next group meeting early April 2018.

3.4. TDG-L-114 - Toyota Diesel Turbocharger Compressor Deposit test proposal

The first TDG meeting took place on November 24th where the Chairman and Vice-Chairman have been nominated. The Chairman will be Michael Schulz from ISP and the Vice-Chairman Paul Decker-Brentano from Toyota. The nominations were approved by the CEC Management Board. There are 11 sponsors confirmed for this test. ISP will be the general hardware supplier. A fuel tender process will also be launched by CEC shortly. The test will be installed at the test lab in February/March 2018 and the RR should start in April 2018.

3.5. SPG on Low Soot Wear Test

The SPG concluded that a TDG should be formed to develop two low soot wear tests; a Journal Bearing Wear Test and a Ring / Liner Wear Test. The group had a meeting on November 7th where a draft of the Terms of Reference for the bearing wear test has been prepared. When that is completed, the Terms of Reference for the liner wear test will be drafted.

3.6. SPG on Corrosion

The Terms of Reference for the SPG on Corrosion have been endorsed by the member associations and they will now nominate members to join and start with the SPG.

3.7. CEC Communication tools

A survey has been conducted amongst the CEC members in the past few months to understand from individuals how they use the current CEC communication tools and to better understand their expectations. The results of the survey were discussed in the Management Board Meeting and the main strengths are that useful and relevant information is available and that quality of the information is also good. The weaknesses are the ease of use and the look and feel. Therefore this would need to be improved and the website needs to be much more user friendly for both the users and the back end. The Management Board is currently looking for offers from several website providers and the next steps, as well as budget will be further discussed in the coming months.

In the meantime the following improvements have been made to the current website following some comments from different users:

- Test methods: documents can now be printed/downloaded at the same time
- Progress reports: a filter has been added so the user can view them by most recent updated instead of by SG/TDG

4. Update on TDG's and SG's

4.1. SG-L-104

The Test Method is in good control but the QR has deteriorated slightly from $r=1.0$ and $R=0.9$ in the original Round Robin (where the test control limits were defined) to $r=1.2$ and $R=1.0$. Also since the Round Robin in 2015 to date a reduction in severity in both reference oils has been observed. This is in the region of ~5 merits (Avg PC) on RL 256 (HR) and ~2 on RL255 (LR), effectively increasing discrimination.

4 test laboratories are running the test on a routine basis. Unfortunately Daimler Lubes has had to resign from the group, but a representative from the Daimler Berlin engine plant is able to continue to participate.

The Test method is published and continues to be updated as required.

The Reference Oils and fuel continue to be available.

Test "life expectancy" is now out until 2019 and Daimler is investigating if this can be extended until 2021.

Hardware is being reused so 4 tests in total can be achieved on each cylinder block. Requirements are defined for their reuse and there is no evidence that this change has had an impact on severity, although very little reference oil data is available. A new batch of pistons and rings has been produced and their performance is currently being assessed by ISP.

4.2. SG-F-110

A group meeting was held on November 8th, 2017. At this meeting, and based on the recent low reference fuel results obtained from several labs, it has been agreed that the current test repeatability with IDID Contaminated Low Reference Fuel (RF-79-07 + 0.5ppm Na + 10 ppm DDSA) is not acceptable to the SG F-110. The main objective of the November 8th meeting was to clarify the fuel preparation protocol and hence the next Round Robin (now planned for completion by end Q1 2018), will include a specific and tighter fuel preparation protocol. It is believed that the fuel preparation can have a significant impact on test severity. The new protocol is designed to improve test variability by minimising lab to lab differences in the low reference fuel preparation process.

The group did note that the test still shows a difference in rating between the Non IDID Reference Fuel (RF-79-07, pure base fuel) and IDID Contaminated Low Reference Fuel (RF-79-07 + 0.5ppm Na + 10 ppm DDSA). However the test repeatability needs to be significantly improved to return to the original Round Robin Outcome.

All Round Robin data will be loaded on TMS. The next Round Robin outcome will then be reviewed by SDG and statistical criteria will be updated to confirm if the repeatability issue has been resolved. If at the end of this Round Robin the test does not regain an acceptable repeatability then the group will declare the test out of control and other potential causes of test to test variation will need to be investigated.

5. Events and representation

5.1. European Base Oil & Lubricants Summit: 28-30 November, 2017 in Antwerp, Belgium

CEC Chairman Frank Stunnenberg presented “Spotlight on CEC”, a brief overview on the role of CEC in developing tests for the European Automotive, Fuels and Lubricant Industry.

In addition, there were presentations by Valentina Serra-Holm, president UEIL, on the European Lubricant Market based on data from the newly created UEIL Industry Statistics Committee, and by Peter Tjan, former president of ATIEL, on protection of the European Engine Lubricant Quality Standards and the results of quality surveys held by ATIEL to assess quality compliance.

Other topics included the impact of the IMO 2020 sulfur regulations, base oil opportunities for industrial lubricants, for Metal Working Fluids, market overview of bio-lubricants and synthetic base stocks.

6. Strategic Outlook

6.1. Fuel Test Development

Following the recent CEC Fuel Test Developments, F-110 and F-113, contact with the CONCAWE science representative and other previously communicated initiatives; all identified short term actions have been taken. The activity will continue with opportunities being sought to start new test developments. Contact with the relevant CONCAWE groups will be maintained on a regular basis. Other opportunities to identify new contacts will be taken if and when identified. The next initiative will be to reach out to suppliers of Fuel Injector Equipment and continue to rely on our regular contacts with CONCAWE and ATC.

6.2. Enhancements to CEC Test Development Process

All aspects of the test development process have been thoroughly reviewed. Two focus areas were identified:

- Test Development Process enhancements, including guidelines for the development of ToR and the formation of Special Project Groups to develop ToR, focus on project management skills when selecting TDG chairman and increased focus by the TDG on the project deliverables and timeline.
- Support to the TDG by CEC MB, including focus on support to the TDG by the CEC MB liaison, closer monitoring of TDG progress by the CEC MB and more active issue resolution by the CEC MB.

These improvements have been captured in revised Guidelines, which have been issued to Chairs and vice-Chairs of the TDG's and SG's. Feedback on the revised Guidelines has largely been positive.

6.3. CEC Role in engine hardware supply

Supply of engine hardware for CEC tests is not a trivial matter but is essential for our industry. Last year, the CEC MB has reached out to European stakeholders in engine hardware supply to understand the situation in Europe, which proves to be diverse, but nevertheless there is a role for CEC in facilitating hardware availability in Europe. The CEC MB has endorsed the ToR for L-114, the Toyota Turbo Charger Compressor Deposit Test, welcoming Toyota as a new hardware sponsor. Toyota, ISP and CEC have agreed that hardware storage and supply for this test will be handled by ISP as a test case.

6.4. CEC Stakeholder Engagement

In October and December CEC MB representatives have engaged with ATC, ATIEL and CONCAWE to update our stakeholders on the progress on our Strategic Items. Following ACEA's letter to their members asking for continued support to CEC we are looking at opportunities to further engage with OEM's. For the coming year we plan to revamp the CEC Website.

6.5. Activities of the SGs

The CEC MB has looked at developing procedure to facilitate the interaction with the Surveillance Groups and seeking opportunities to focus the SG activities on test improvements. This has resulted in establishing

performance indicators which will allow MB and SG members to monitor and appraise performance. The test life plan was updated to include those performance indicators.

7. Upcoming event and activity for the 1st semester of 2018

- Management Board Conference Call on January 16th, 2018
- SG-L-103 meeting on January 30th, 2018 in Germany
- Management Board Meeting on March 13th, 2018 at the CEC Offices in Brussels, Belgium.
- SG-L-099 and SG-L-101 meetings on March 6-7th, 2018 at APL Landau
- SG-L-111 meeting on March 21st, 2018 at ISP Grand-Couronne
- SG-T-007, SG-T-045 and SG-T-084 meetings on April 10th, 2018 at FZG Institute in Munich
- Operator seminar "Rating of gear failures" on April 11th, 2018 at FZG Institute in Munich
- CEC Management Board Conference Call on May 8th, 2018
- CEC SDG meeting on May 15th at Fuchs Schmierstoffe GmbH
- CEC bundled meeting on May 16 & 17th, 2018 at Fuchs Schmierstoffe GmbH
- CEC Reference Oil Group meeting on May 23rd, 2018 at Haltermann Carless – France
- CEC Management Board Meeting on June 19th, 2018, at the CEC offices in Brussels, Belgium