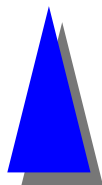
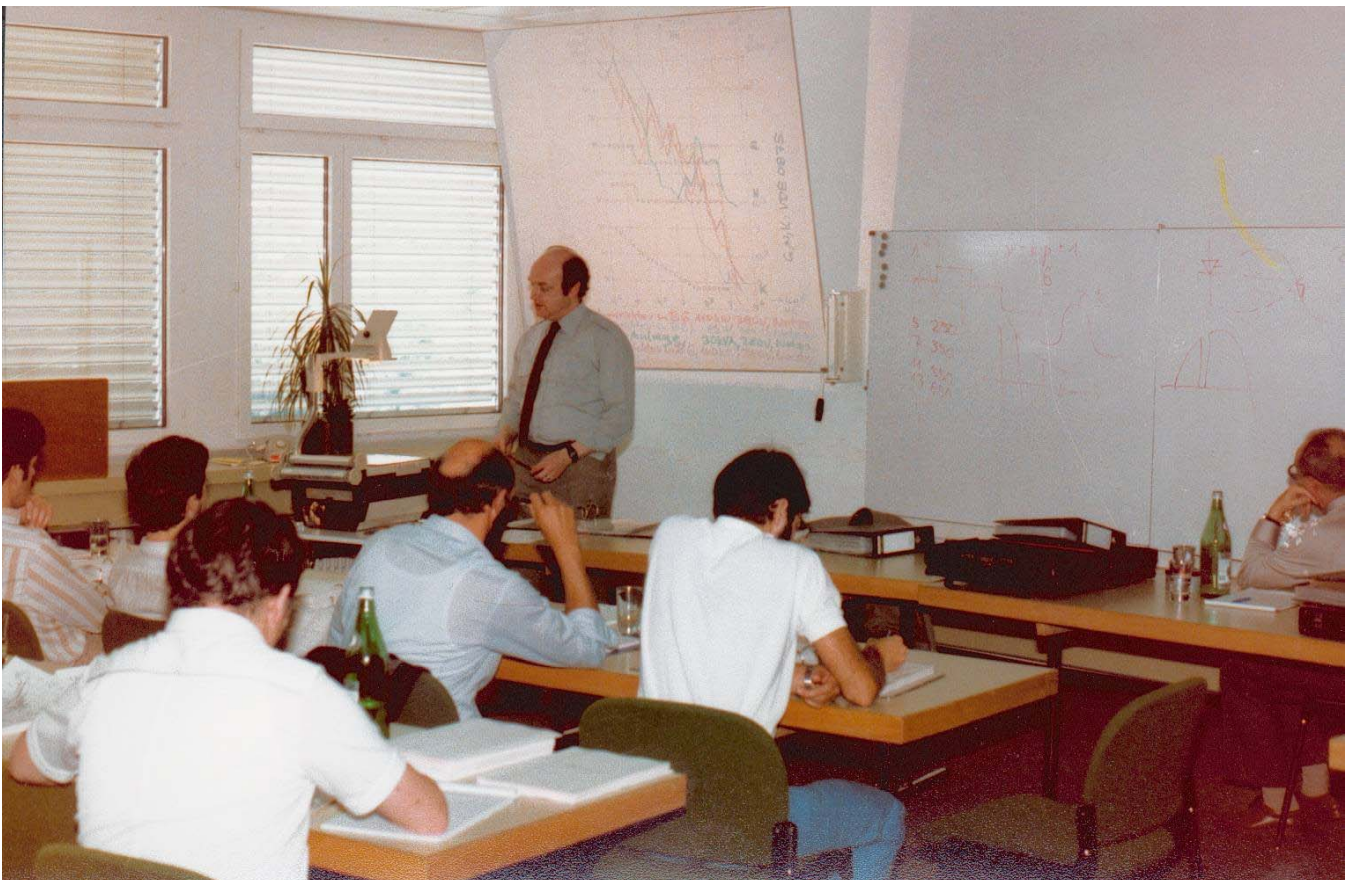


**ELECTROMAGNETIC COMPATIBILITY CONSULTING & TESTING,  
CALIBRATIONS, CERTIFICATIONS, COMPONENTS, SEMINARS**

# **Lightning Electromagnetic Effects on Aircraft**

## **Public LEMP Seminar in English Language**

### **2012-10-25 to 2012-10-26**



## SEMINAR PROGRAM

11.02.02E1

### Lightning Electromagnetic Effects in Aircraft

Two Days Seminar

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#### Seminar venue

The seminar takes place in the EMCC Seminar Centre in Unterleinleiter. It is located at the EMCC Test Labs site, which among others provide aircraft EMC services. The broad area of activities can be viewed on [www.EMCC.de](http://www.EMCC.de).

The EMCC aircraft group with the associated labs are an ideal environment for the seminar. The vast experience in aircraft measurements, system and equipment testing is combined with the latest high end test infrastructure. This site is also location of design and manufacture of HIRF generators, NEMP generators and direct as well as indirect lightning generators. These meet and exceed maximum levels of current standards and specifications.

The combination of experience and infrastructure enables an experimental portion which includes demonstrations and seeing test setups. Visits and experiments are conducted in small groups. Various kind of sites are part of the course, among them are anechoic chamber, open area test site (OATS), GTEM cell, TEM cell, reverberation chamber as well as lightning test setups. Examples are provided, discussion and questions will be part of the seminar. Seminar notes in English language are included in the fee as well as lunch and coffee breaks.

#### Contents

- Physical Phenomena
- Certification regulation and standards
- Associated Test Methods and procedures
- Aircraft, system and avionics design to reach compliance
- Visiting the EMCC test laboratories

#### Who should attend

- EMC engineers
- EMC project managers
- Certification staff
- EMC test staff
- System designers and integrators
- Equipment designers

#### Lecturers

Dr. Martin Gabrišák, Head of EMCC Research & Development Group and staff engineers  
Helmut Kupfer, practical demonstrations and exercises

## **SEMINAR PROGRAM**

**11.02.02E2**

### **Lightning Electromagnetic Effects on aircraft**

Two Days Seminar

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#### **Lightning Protection of Aircraft and Avionics**

Welcome

Fundamentals of Electromagnetic Compatibility

Thundercloud Electrification and Lightning

Lightning Interaction with Aircraft

Direct Effects of Lightning

Indirect Effects of Lightning

Standardised Lightning Environment, Airworthiness Regulations

Basic Steps in Lightning Protection, Design and Certification

EMCC Labs Visit – Unterleinleiter Sites

Basic Steps in Aircraft Lightning Protection Certification

Direct Effects of Lightning

Fuel Systems

Indirect Effects of Lightning

Equipment Transient Design Levels and Transient Control Levels

Real world situations

Basic Steps in Lightning Protection Design

Shielding, Filtering, Grounding

#### **Approach to Compliance and Test**

Test Methods for Indirect Effects of Lightning

Test Methods for Direct Effects on Structures

Test Methods for Fuel Systems

Test Plan/ Test Procedures

Real world issues

Discussion, Questions and Answers

Transfer to the EMCC Labs, Moggast Sites

Lab Visit

Practical Demonstrations

Test Methods for Verification of Protection, Lightning Indirect Effects

Test Methods for Verification of Protection, Lightning Direct Effects

**99.00.02E**

To  
EMCC DR. RAŠEK  
Seminar Center  
Stoernhofer Berg 15  
91364 Unterleinleiter  
Germany

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Date

## REGISTRATION FORM

for the **Two Days Seminar # 11.02.02E** from **2012-10-25** to **2012-10-26**  
Topic: **LEMP – Lightning Electromagnetic Pulse Effects on Aircraft** in English language

**Seminar venue: EMCC DR. RAŠEK Seminar Center, in 91364 Unterleinleiter, Stoernhofer Berg 15, Door #1, Germany, T.: +49 9194 72279-01, F: +49 9194 72279-06, E: emc.sem@emcc.de.**

Company: \_\_\_\_\_  
Contact: \_\_\_\_\_  
Address: \_\_\_\_\_  
Postcode/Town/City: \_\_\_\_\_  
Telephone: \_\_\_\_\_ Telefax: \_\_\_\_\_ Mail: \_\_\_\_\_

Name of participants (for more participants please use separate sheet): Position:

1. \_\_\_\_\_  
2. \_\_\_\_\_  
3. \_\_\_\_\_  
4. \_\_\_\_\_

Hotel accommodation required:  yes  no, from \_\_\_\_\_ to \_\_\_\_\_, for \_\_\_\_\_ persons  
for \_\_\_\_\_ nights.

**Seminar fees: EUR 1,880.00 per participant, VAT additionally if applicable.**

The EMCC general conditions will be accepted with the booking. Seminar fees are due to receipt of invoice or 14 days before seminar start, latest.

\_\_\_\_\_  
(Place, date)

\_\_\_\_\_  
(Authorized Signature)

**Invoicing Address:**

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**00.00.04E**

## **EMCC SEMINARS - TERMS AND CONDITIONS OF PARTICIPATION**

### **REGISTRATION**

<b>by MAIL</b>	<b>by FAX</b>	<b>by PHONE</b>	<b>by E-MAIL</b>
EMCC DR. RAŠEK Störnhofer Berg 15 91364 Unterleinleiter Germany	+49 9194 72279-06	+49 9194 72279-01	emc.sem@emcc.de

### **FEES**

The seminar fee must be paid after receipt of the invoice and the confirmation of booking. All invoices must be paid in advance, 14 days prior to the seminar start at the latest.

The costs for all documentation and seminar papers are included in the seminar fee.

The seminar fee is subject to VAT if venue is in Europe.

### **HOTEL ACCOMODATION**

Hotel accommodation is not included in the seminar fee.

If you want us to book your accommodation, please give us a note and we will take care of your accommodation requirements. Our Guest House HOTEL HAUS-FRANKEN is part of the EMCC Seminar Centre Building.

### **HOW TO FIND US**

You will receive a confirmation of booking including location details, also please see [www.emcc.de](http://www.emcc.de).

### **CANCELLATIONS**

No penalty will be considered for cancellations received not later than 14 days prior to the event. Cancellations within 14 to 3 working days before the start of the seminar will be liable for 50 % of the seminar fee. After this date cancellations are liable for the full seminar fee. The same applies to non-appearance or interruption. However, we are happy to accept substitute delegates at any time.

### **CHANGE OF TERMS**

In case of cancellation caused by EMCC DR. RAŠEK (e.g. for sick leave or insufficient number of participants), the entire fee will be refunded.

A change of speakers does not legitimate a reduction of the seminar fee or withdrawal of the booking.

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**The terms and conditions set out above are accepted with the seminar booking.**

**Place of jurisdiction is Bamberg, Germany.**

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## EMCC Seminar Center & Laboratory

in Unterleinleiter, Germany



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**DR. RAŠEK**

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