Emergency Communications

Amateur Radio and Disaster Communication
Deutscher Amateur Radio Club (DARC)

DARC Council
- Steffen Schöppe, DL7ATE
- Anette Coenen, DL6SAK
- Christian Entsfellner, DL3MBG
- Martin Köhler, DL1DCT

District Assembly
24 +1 District Presidents
Sprecher: Johann-Peter Ritter, DH2BAO

~ 1.000 local Radio Clubs

~ 40.000 Club Members

Club Manager
- Jens Hergert, komm. GF (Baunatal)

DARC Magazin
- Alexander Strutzke, DH9AS (Baunatal)

Coordinator
Emergency- and Disastercom
Michael Becker, DJ9OZ

Coordinators at District Level
z.B. Coordinator for Distrikt Y
Peter Wasieloski, DK6PW

honorable
paid
Working Group
Emergency- and Disaster Communications

Council member for „Emergency- and Disastercommunications“

Martin Köhler, DL1DCT

Chairman
International Coordinator
EmCom - Technology

Michael „Mike“ Becker * 1943
DJ9OZ since 1964
Profession: Certif. Ing. Telecommunications
(Siemens, Bosch, Motorola, GIB, TOP-Business)

Former HF-Unit German Red Cross-Management
Former emergency coordinator DARC-District Berlin
DARC EmCom Coordinator (since 2011)

Deputy Chairman
and Webmaster

Peter Wasieloski * 1956
DK6PW since 1992
(Police District Brandenburg)

Liaison to THW
Emergency coordinator DARC-District Y Brandenburg
Deputy DARC EmCom Coordinator since 2011
History

1979  WARC-Resolution (Use of Amateur Radio EmCom at Disasters)
1980/81  DARC offered Assistance to national Districts
1986  DARC EmCom Guideline (44 Pages by DC6XT)
11/1988  New Guideline for EmCom by the Board of District Leaders
~1990  Dissolving the EmCom working group

2006  Nominating EmCom Adviser to the DARC Council DK1WER
11/2009  Creating new EmCom Working Group
3/2010  New DARC EmCom Concept ratified
5/2010  Nomination of the EmCom Coordinator DK1WER
2/2011  DO9DMB new EmCom Coordinator
4/2011  DO9DMB went silent key
11/2011  DJ9OZ new EmCom Coordinator
The Deutsche Amateur Radio Club e.V. prepares the basis for radio amateur's support in case of emergency and disasters local or within districts.
Legal Aspects

AFuG 1997 § 2 Definitions

The law defines....

2. **Amateurfunkdienst** ein Funkdienst, der von Funkamateuren untereinander, zu experimentellen und technisch-wissenschaftlichen Studien, zur eigenen Weiterbildung, zur Völkerverständigung **und zur Unterstützung von Hilfsaktionen in Not- und Katastrophenfällen wahrgenommen wird;**...

DARC Satzung - § 2 Zweck des Clubs ist die Förderung des Amateurfunkens

Zweck des Clubs und seiner Untergliederungen Distrikte und Ortsverbände ist die Förderung des Amateurfunkens. Der **Satzungszweck** wird verwirklicht, insbesondere durch die Förderung

a) von Wissenschaft und Forschung,

b) der Bildung, Erziehung und Jugendarbeit,

c) der Völkerverständigung

**sowie die Unterstützung der Behörden beim Aufbau von Nachrichtenverbindungen in Katastrophenfällen, und zwar unter Ausschluss gesellschaftlicher Unterschiede sowie politischer, militärischer oder kommerzieller Zwecke.**
Focal Points

- Cooperation with Agencies and Relief Organisations
- International Cooperation
- Training / Information
- Technologie
- Creating interest in EmCom and DARC
- Öffentlichkeitsarbeit
Cooperation with Agencies and Relief Organisations

Sample of a Communications Chain

Linked up with Agencies and Security Organisations (BOS)

AFU-Station

Regierungspräsidium

Leitfunkstelle
Überregionale Koordination bei Überlastung der BOS

Leitstelle
Lokale Koordination bei Ausfall des Telefonnetzes

TEL

MdI

AFU-Station

nicht vom DARC finanziert/unterhalten

AFU-Station

mitwirkender FA in Not/Katastrophenschutzverkehr

Feuerwehr  DRK  MHD  JUH  ASB  THW  Polizei  Bundespolizei  Bundeswehr

Referat Not- und Katastrophenfunk  Vers. 1.03  17.05.11
Cooperation with Agencies and Relief Organisations

DARC Coordination with Agencies and different Organisations related to the Assistance by the DARC in case of emergency or disaster


z.B. Bundesländer:

- Hessen  Erlass VI 64 –68 f 36 und weitere
- Nordrhein-Westfalen Erlass V B 4 – 2.115 –0
- Bayern  Erlass ID4 – 2254.254 – 27
Cooperation with Agencies and Relief Organisations

- DARC (NF-Referat)
  - Bund und Hilfsorganisationen
  - Vorlagen und Unterstützung für DV und OV

- Distrikte (DV)
  - Land
  - Umsetzung durch den/die DV

- Ortsvereine (OV)
  - Kreis /Kommunen
  - Umsetzung durch OV
International Cooperation

Cooperation within the European Union

- Cooperation with Relief Organisation in the EU and partly with other EmCom groups
- Border districts seek Cooperation with EmCom groups in adjacent countries

IARU-Regions 1 (other countries), 2 & 3

- Regular participation in GlobalSET
- Participation in GAREC-Conferences
- Keeping up existing international Contacts
- In the long range:
  - Participation in international EmCom Networks
  - Starting a Monitorservice for EmCom Frequencies

GlobalSET = Global Simulated Emergency Test (weltweite Notfunkübung)
GAREC = Global Amateur Radio Emergency Communications
Training

- Training about EmCom specific knowledge
  - With certificate for the participants
  - Additional Field Training Sessions

- Creating a catalogue about aim and training material
- It is the structure for the training and education at distrik level
  - Planned for 2012

- Support and organizing of EmCom Training
  - Realization in the Distrikts
Technology

- Suggested Equipment for EmCom activity
  - EmCom Box
- Technical Compatibility
  - Fix standards
- Try and work out solutions
  - Exchange of experience
- Organisation and Operation of EmCom Networks
  - it is part of the training
Create Interest in EmCom by DARC

- To get Radio Amateurs interested in EmCom
  - He can help others in need
  - Acknowledgement in society
  - To use ready experience for EmCom
  - EmCom creates common interest
  - To find arguments to assist radio amateurs with their antenna permit

- To find new radio amateurs by use of EmCom
  - EmCom is attractive
  - Use EmCom to lead to Amateur Radio and DARC membership
Public Relations

- **Local und national Press**
  - Exs ample: Contests, Fielddays and EmCom “sell“ Amateur Radio
  - Pressreleases, Invitations etc.
  - Publish examples of EmCom activities
  - Reference to Amateur Radio in reports on disasters

- **Public Relations creates Attention from the public and Agencies**
  - Excellent PR is required for appreciation
  - More acceptance when antenna installation are planned
  - Help with Spectrum allocation and at EMC problems
In general our aim is to use Amateur Radio to support Society by means of support and service in case of Emergencies or Disaster.
Tasks of the EmCom Working group

- Sell the idea of EmCom in DARC (Council, Board of Districtleaders, Members)
- Coordination of the District EmCom Groups
- Boosting internal Communication among the individual DARC EmCom groups
- Harmonising, Training, Equipment
- Contact to external Groups
- Represent DARC related to EmCom at IARU
- International Coordination
EmCom WG Activities in 2011

- Search (2x) for a new EmCom Coordinator
- Reactivated EmCom Bulletin
  (Compiling, Transmission, Feedback)
- Internet Presence (CMS), new layout
  (Updates, Translation of international news items)
- Mailing Lists
  (intern und public, daily updates)
- Participation in Ham Radio exhibitions
  (Booth organising, lecture, WG meeting, stage talk)
- THW-Symposium
  (Critical Infrastructur – Riskmanagement)
Initiative by the German Parliament

Greenbook
(56 Pages)
- September 2008 -

RISK AND CHALLENGE FOR THE PUBLIC SECURITY IN GERMANY

Szenario: „General Power Cut in Germany“
Example for an extensive Power Cut:

- 28. September 2003 in Switzerland and Italy
- 4. November 2006 in Belgia, France, Italy und Spain
- 25. November 2005 several days in Münster District
Working group for Education, Research and Technology Assessment
- Report from 27. 4. 2011 –
(136 pages)

Impact and danger to a modern society in case of a nationwide Power Cut
2.1.2.1 Legal Basis (Page.35)

In Germany there is a special law for Amateur Radio (AfuG). In § 2 the Amateur Radio Service is defined as Radio Service also as Support of Activities in case of Emergency and Disasters.
2.1.2.1 Legal basis (S.35)

§ 5 provides in case of Emergency and Disaster an exemption of the strikt limitation on third party traffic for Radio Amateurs.
9. Coordinated Disaster Management – without Mains (S.114)

Other Optionens in case of power failure are:

- provisional field cable networks,
- Support by the Radio Amateurs according to the Amateur Radio Law.

§ 2 Paragraph 2 Amateur Radio Law also with the use of Amateur Radio Satellite Communication
9. Coordinated Disaster Management - without Mains (Page 114)

The energy requirement for Amateur Radio equipment is much lower than commercial field cable.

The Amateur Radio functions without any existing mains power requiring Communication structure.

Standard Radios can be used with Batteries, Carbatteries or Solarpanels even for large distance.
Emergency Call

- Spontaneously
- To everybody who can help or arrange help
- Direct from the one requiring help or from a helper
  → Passing on to hotline 110 and support by und evtl. Unterstützung for further communication

Emergency Traffic

- Planned
- In case of failure or overload of Telecommunication Structure Infrastructur asked for by BOS/KatS
- Requested by BOS (KatS, HiOrg etc)
  → Amateur Radio as support to community, society and agencies
Hilfe durch Notfunk bei Ausfall normaler Kommunikation

C to C (Citizen to Citizen)
Bürger zu Bürger
Meldepunkte z.B. an Schulen, Notunterkünften
Suchmeldungen, welfare-traffic

C to A
C to A (Citizen to Authority)
Bürger zu Behörde/HiOrg
Meldepunkte z.B. an Schulen
Ergänzung der 112/110-Notrufnummern
Lagemeldungen

A to C (Authority to Citizen)
Behörde/HiOrg zu Bürger
Meldungen/Rundsprüche über Notfunk-Leitstation
an Funkamateure/ Bevölkerung

A to A
A to A (Authority to Authority)
Behörde/HiOrg zu Behörde/HiOrg
Externe Notfunkstationen zu Notfunk-Leitstation bei EL/TEL
Daten-/Bild-/Sprachübertragung
Citizen to Citizen

- Search for Location / Situation
- Information on Location / Situation
- Social Networks
- Communication from assembly points to
  - Relatives
  - Friends
  - Companies
Project „Lighthouse“

- Support to centre for citizen in case of power failures at
  - City Halls, Firebrigades, Policequarters, Schools with
  - Light
  - Electricity
  - Communication
  - Emergency supplies
  - First Aid
  - Information
Citizen to Authority

- Situation Reports
- Asking for Assistance
  Support to emergency numbers like 112/110
Authority to Citizen

- Information about Resources
- Informationen about the Situation to the Public
- Warning Messages
- Evacuation (?)
- Alarming (?)
Authority to Authority

- Situation Reports
- Logistic (Depot)
  - Food, Medicine, Blankets
  - Quantity, Capacity
- Isolated Areas
  - Mayor to Person in charge of Operation
Support by use of digitale Modes

- Short Messages by using APRS
  - Text
  - Position
  - Weather data

- Email by Winlink 2000
  - PACTOR
  - Winmor
APRS
(Automatic Packet/Position Reporting System)

- Locating of Persons or Vehicles by radio
- Movement of Persons and or Vehicles
- Weather informationen from specific Locations
- Tracking of Search parties by the operation centre
- (SMS) from and to vehicles
EmCom-Link for E-Mail-/Datatransmission out of the effected area

Transfer-System:
- Pactor
- Winmor
- RFSM
- PSK-Mail

Amateur Radio-Gateway with Internet-Connection

Operation Centre with IN-a. E-Mail access

Internet

EmCom

Mobile/Portable EmCom station with Laptop

Destroyed Infrastructure
Many Thanks for you kind Attention (and patience)