ÖVSV

ÖSTERREICHISCHER VERSUCHSSENDERVERBAND
WWW.OEVSV.AT

EMCOM EXERCISE
SOLAR Flare

1st May 2018

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OE3KJN

A1

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AOEC of Radio Hams

1st May means for Austrian Radio Amateurs:

- Austrian-wide Radio traffic
- Operation on 80m and 40m
- Autonomous Power Supply
- Try to reach all Districts
- Operation with Military or Red Cross
- Emergency Traffic

AOEC= All OE Contest

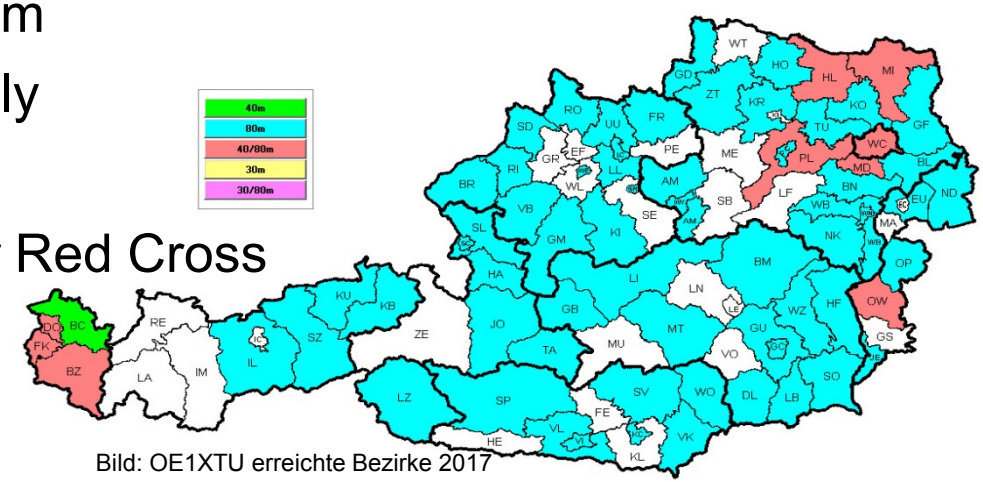


Bild: OE1XTU erreichte Bezirke 2017

Exercise Assumption

Bild: picabay.com

Solar Flare

LLOYD'S

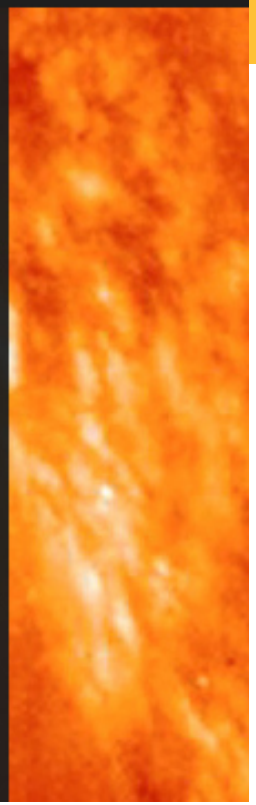
Lloyd's City Risk Index
2015–2025

Solar storm

Event: Failure of the Hydro-Québec power grid, 1989
Location: Quebec, Canada

Economic cost: Total economic loss of $8m.

Description: On 13 March 1989, geomagnetic-induced currents overloaded the transformers of the Hydro-Québec power system and in less than two minutes the power grid failed.



WIRED — 1 in 8 Chance of Catastrophic Solar Megastorm by 2020

ADAM MANN SCIENCE 02.29.12 6:30 AM

1 IN 8 CHANCE OF CATASTROPHIC SOLAR MEGASTORM BY 2020

THE EARTH HAS a roughly 12 percent chance of experiencing an enormous megaflare erupting from the sun in the next decade. This event could potentially cause trillions of dollars' worth of damage and take up to a decade to recover from.

Such an extreme event is considered to be relatively rare. The last gigantic solar storm, known as the Carrington Event, occurred more than 150 years ago and was the most powerful such event in recorded history.

Danger due to Solar Flares

WHAT'S THE REAL DANGER FROM SOLAR FLARES?

BY: WORLD SCIENCE FESTIVAL STAFF

The geomagnetic storm that results from CME-magnetosphere interactions can muck up all kinds of technology that we rely upon in modern life. Satellites that orbit high up in geosynchronous orbits—many of them communications satellites—are vulnerable to geomagnetic storms, either because they could be penetrated by high-energy particles or because the satellite could become highly charged, causing key components to be damaged by discharging currents.

Even more serious is the potential for CMEs to damage electrical grids. A geomagnetic storm produces electrical currents in conductive material on the ground, including through pipelines, communication cables, and power lines. These large, geomagnetically induced currents can overload transformers and lead to widespread blackouts.

"Imagine large cities without power for a week, a month, or a year," University of Colorado physicist Daniel Baker said at a 2011 geophysics meeting, according to National Geographic. "The losses could be $1 [trillion] to $2 trillion, and the effects could be felt for years."

Bilder: picabay.com

Exercise Assumption

- HF Radio, VHF/UHF Radio and Microwave Links – if Solar- Wind- etc. powered – shall be possible after 4 days (= 1. Mai)
- It seems to be realistic that Austrian Military forces are capable of providing Radio communication after 4 days
- Radio Hams having alternative Power Sources and working Radio Equipment are able to provide Radio Traffic. The PACTOR Radio Gateways are operational.
- All other Communication (wired, fibre links, Internet, fixed & mobile Phone, TETRA, Satellite) shall be not operational and is not allowed to use during the Exercise
- Satellite navigation eg GPS, GLONASS is not operational
- Broadcast Radio is not operational due to the fact that the links from the Studios to Transmitters failed due to missing Power and missing data links

Exercise Assumption

- Every Communication from Authorities to the People (eg by Austrian Broadcast Company ORF) is not operational due to the fact that there is no Power Supply and data links from Studios to hosted Webserver or Transmitters are not operational
- Google or all other Server/Datacenter are out of order due to missing Power and missing Data links
- PMR Communication (eg TETRA) does not play a role in this Exercise since there is no fixed line or fibre Communication to the Base Stations operational
- Warning Centres of the federal Stats do not play a role in this Exercise since their Data Communication is not operational and they cannot be reached
- A1 Telekom Austria tries to establish the Internet/Data Connections (starting Power Generators, Routers etc. in their remote switching Centres)
- The Austrian Military Forces tries to contact the Authorities in all Austrian Districts to get the status and establish law and order again

Exercise Partner

- Austria's leading Telecom Operator
- Operating the data links for TETRA

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Functions:

- Military defence
- protecting inhabitants and facilities
- Help in natural disaster or heavy accidents

Die Übungspartner

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- ca 6000 potential communication Points all over Austria
- capable of self-construction and repairing Radio Equipment
- Monthly Austrian-wide Radio Exercises Voice & Data
- simple- (Morse) up to high speed data Radio Communication
- autonomous Data Network on HF

Exercise Goal

- Test of internal Alarming of EMCOM Group
- EMCOM Equipment Test (HF Voice und HF Data)
- Mobility Test
- Operation with Radio Hams

Question: is HF Communication useful for A1?

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- Operation with Radio Hams

Question: are all Austrian Districts reachable?

Exercise Goals

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- Win the Contest
- Test of Emergency Power Supply
- Test of Radio Equipment and Antennas
- Coverage test
- Exercise to transfer

  small messages

  = Emergency Exercise

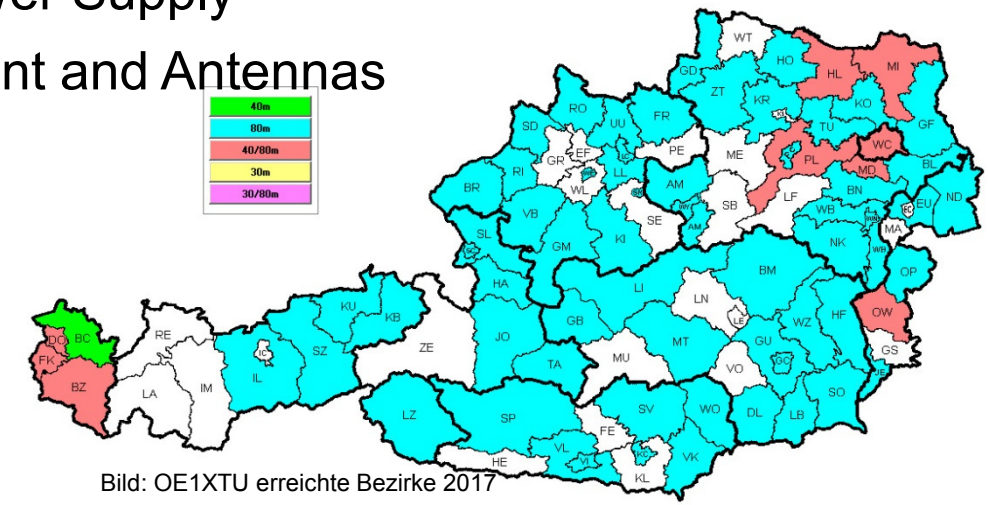

Bild: OE1XTU erreichte Bezirke 2017

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If you do not think about tomorrow, you will have sorrow before it ends today.

Konfuzius

Dipl.-Ing. Herbert Koblmiller OE3KJN
Court Certified Expert
ÖVSV Emergency Coordinator

A1

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