

DIVK FORUM

ODRŽAVANJE TEHNIČKIH SISTEMA: SIGURNOST I POUZDANOST BAGERSKIH JEDINICA – UTICAJ PERSONALA

DIVK forum je održan 31. oktobra 2013. Uvodno izlaganje je imao doc. dr Milorad Pantelić pod naslovom: „Održavanje tehničkih sistema: sigurnost i pouzdanost bagerskih jedinica – uticaj personala“.

Kao privredna grana, rudarstvo u mnogim zemljama predstavlja osnovu razvoja i vrši veliki uticaj na njihovu ukupnu ekonomiju. U ceni uglja, održavanje rudarske mehanizacija na površinskom kopu učestvuje sa 35-40%, pa je uticaj havarija bagerskih jedinica na produktivnost površinskih kopova veliki.

Osnovni problem kod bagerskih jedinica na površinskim kopovima se može formulisati u vidu nedovoljno adekvatne koncepcije održavanja.

Najznačajniji uzroci havarija bagerskih jedinica su:

Otežani uslovi eksploatacije 27%

Greška u izradi i montaži 22%

Greška rukovaoca (operatora) 18%

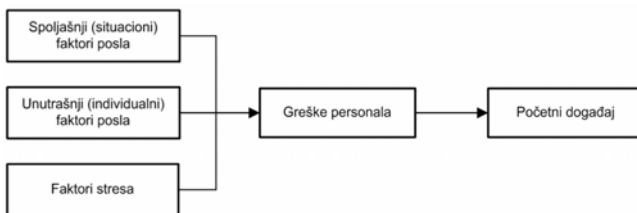
Greška održavaoca 13%,

Zamor materijala, habanje opreme i korozioni procesi 8%,

Neadekvatno projektno rešenje 7% i

Ostalo 5%.

Uticaj pouzdanosti personala na eksploatacionu sigurnost bagerskih jedinica se šematski može prikazati na sledeći način:



Slika – Lom konstrukcije bagera
Figure – Excavator structural failure.

DIVK FORUM

TECHNICAL SYSTEMS MAINTENANCE: SAFETY AND SECURITY OF ESCAVATOR UNITS – THE STAFF IMPACT

DIVK Forum was held on October 31, 2013. The introduction was made by Doc. Dr Milorad Pantelić with a presentation: “Technical Systems Maintenance: Safety and Security of Excavator Units – The Staff Impact”.

As an industry, the mining industry in many countries is the basis of development and makes a huge impact on the overall economy. Mining machinery maintenance at the surface mining accounts for 35-40% of the price of coal and the impact on productivity of excavator unit disasters is huge.

The main problem with excavator units in surface mining can be formulated as a lack of adequate maintenance concepts.

The most important causes for the accidents on excavator units are:

Difficult operating conditions 27%

Errors in the manufacture and assembly 22%

Operator errors 18%

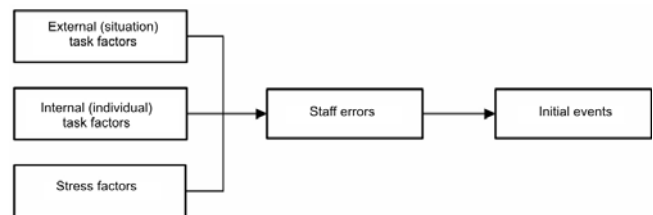
Maintenance errors 13%

Material fatigue, equipment wear and corrosion processes 8%

Non-adequate design solution 7%, and

Other 5%.

Effects the staff reliability impose on the exploitation safety of excavator units is schematically shown in the following:



ANALIZA SIGURNOSTI U FAZI EKSPLOATACIJE BAGERSKIH JEDINICA

Skrining

Na osnovu podataka iz Karte otkaza rotornog bagera SRs 1200x24/4x0(400kW) + VR dolazi se do spiska vrsta grešaka operatora, vrsta grešaka održavaoca i vrsta otkaza celina Mehanizma za dizanje strele rotora (MDS).

1. Spisak vrsta grešaka operatora, n = 1, 2:

- Operator često i na kratko vrši uključivanje mehanizma za dizanje strele rotora,
- Operator često i na kratko vrši uključivanje mehanizma za dizanje strele rotora kada se bager nalazi u planumu.

2. Spisak vrsta grešaka održavaoca, m = 1, 2, 3:

- Održavalac nije pravilno izvršio montažu spojnice na generatoru male grupe,
- Održavalac nije kvalitetno izvršio centriranje elektromotora,
- Održavalac nije podeseo graničnik za uključivanje radnih kolica.

3. Spisak vrsta otkaza Mehanizma za dizanje strele rotora (MDS), k = 1, 2, 3:

- Lom vratila zadnjeg (predzadnjeg) reduktora za dizanje strele rotora,
- Prekid rada elektrohidrauličnog podizača (otkočnika) na radnoj kočnici,
- Mehaničko oštećenje užadi za dizanje strele rotora.

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M. Pantelić

SVEČANA SEDNICA SKUPŠTINE DIVK POVODOM 12 GODINA RADA

Svečana sednica Skupštine DIVK povodom 12 godina rada DIVK održana je 18. novembra 2013. godine na Tehnološko-metalurškom fakultetu Univerziteta u Beogradu, u svečanoj sali na III spratu.

Dnevni red:

1. Izveštaj o radu DIVK proteklih 12 godina (2001-2013)
2. Tematsko predavanje: prof. dr Darko Bajić, Univerzitet u Podgorici, Mašinski fakultet.
3. Promocija najnovijih izdanja DIVK
4. Dodela priznanja

DIVK ASSEMBLY CEREMONIAL SESSION FOR A 12 YEAR ANNIVERSARY

The ceremonial session of DIVK Assembly for a 12 year anniversary was held on November 18, 2013, at the Ceremonial Hall, 3rd floor of the Faculty of Technology and Metallurgy, University of Belgrade.

Agenda:

1. Report on DIVK activity in the past 12 years (2001-2013)
2. Thematic lecture: Prof. Dr Darko Bajić, University of Podgorica (Montenegro), Faculty of Mechanical Engineering.
3. Promotion of the latest DIVK publications.
4. Honorary awards presented



Tematsko predavanje prof. dr Darko Bajić i predsedavajući prof. dr Aleksandar Sedmak
Thematic lecture given by Prof. Dr Darko Bajić and president Prof. Dr Aleksandar Sedmak



Učesnici svečane sednice skupštine DIVK povodom 12 godina rada
Participants attending the DIVK Assembly Ceremonial Session for 12-year anniversary.



Event	Date	Location	Contact
2014			
Developing New Traction for EMUS: Where after the 455?	13 January	London	http://events.imeche.org
Modern Experimental Techniques: Testing, Measuring and Monitoring	29 January	Bristol	http://events.imeche.org
Energy Storage for Power Networks	29 January	London	http://events.imeche.org
Biomass: Just How Sustainable Is It?	30 January	London	http://events.imeche.org
CIEC – 2014 International Conference on Control Instrumentation, Energy and Communication	31 January - 2 February	Calcutta, India	www.ieee.org
NEMB2014 – 3 rd Global Congress on Nano-Engineering for Medicine and Biology () will be held Feb. 2-5, 2014 in San Francisco, CA.	2-5 February	San Francisco, California, USA	www.asmeconferences.org
Targeted Maintenance Boosts North Sea Output by 10%!	6 February	London	http://events.imeche.org
OTC Arctic – Arctic Technology Conference	10-12 February	Houston, Texas, USA	www.arctictechnologyconference.org
The Challenge of High Heat Flux Components for Fusion Power	11 February	t/b/c	http://events.imeche.org
Pump Fundamentals Part A	12 February	London	http://events.imeche.org
Pump Fundamentals Part B	13 February	London	http://events.imeche.org
Hugh Ford Management Lecture 2014: Staying in the Helicopter© - The Business of Engineers	19 February	London	http://events.imeche.org
Railway Division Lecture: The George Ramshaw Curry Prestige Lecture	24 February	London	http://events.imeche.org
UK Shale Gas: The Engineers' Technical Summit	25 February	London	http://events.imeche.org
FATIGUE 2014 – 11 th International Fatigue Conference	2-7 March	Melbourne, Australia	http://fatigue2014.com
Energy 2050 and Beyond	4-5 March	London	http://events.imeche.org
MEED 2014 - ASME International Mechanical Engineering Education Leadership Summit	13-15 March	San Juan, Puerto Rico	www.asme.org
Railway Division Lecture: Ricardo and GE's Study of Class 70 and 66 Locomotives	17 March	London	http://events.imeche.org
SMiRT-22 – 22 nd Conference on Structural Mechanics in Reactor Technology International	18-31 March	San Francisco, USA	www.smirt22.org
Offshore Weight Control: Managing Design, Installation and Cost	19 March	Aberdeen	http://events.imeche.org
ICCMSE 2014 – International Conference on Computation Methods in Science and Engineering	4-7 April	Athens, Greece	www.iccmse.org
ASME 2014 Small Modular Reactors Symposium (SMR2014)	15-17 April	Washington, DC, USA	www.asmeconferences.org
Short Cracks	t/b/a	t/b/a	www.fesi.org.uk
Quasi-Brittle Materials	t/b/a	t/b/a	www.fesi.org.uk
ECCC 2014 – 3 rd International Conference on Creep & Fracture	5-7 May	Rome, Italy	http://eccc.c-s-m.it
IMTCE2014 – 9 th International Materials Technology Conference & Exhibition	13-16 May	Kuala Lumpur, Malaysia	www.imtce2014.com
SoSDiD – Symposium of Structural Durability in Darmstadt	14-15 May	Darmstadt, Germany	www.sosdid.de
Residual Stress: Contour Method	2 June	t/b/a	www.fesi.org.uk

OMAE2014 – 33 rd International Conference on Ocean, Offshore and Arctic Engineering	8-13 June	San Francisco, California, USA	www.asmeconferences.org
ECF20 – 20 th European Conference on Fracture	30 June – 4 July	Trondheim, Norway	www.ecf20.no
ICEFA VI – Sixth International Conference on Engineering Failure Analysis	6-9 July	Lisbon, Portugal	www.icefaconference.com
ASME 2014 Pressure Vessels & Piping Division Conference	20-24 July	Anaheim, California, USA	www.asmeconferences.org
WCCM XI – ECCM V – ECFD VI	20-25 July	Barcelona, Spain	www.wccm-eccm-ecfd2014.org
FEDSM2014 – 4 th Joint US-European Fluids Engineering Summer Meeting	3-7 August	Chicago, Illinois, USA	www.calender.asme.org
ICOTOM17 – 17 th International Conference on Textures of Materials	24-29 August	Dresden, Germany	http://icotom17.com
CIEC14 – 14 th Inter-regional Conference on Ceramics	8-10 September	Stuttgart, Germany	www.ciec14.org
Multi-Lateral Workshop on Fracture and Structural Integrity-related Issues	15-17 September	Catania, Italy	www.gruppofrattura.it
Rolling Bearing Fatigue	t/b/a	Warrington	www.fesi.org.uk
International Conference on Fatigue Damage of Structural Materials X	21-26 September	Hyannis, Maryland, USA	www.fatiguedamageconference.com
IPC 2014 – 10 th International Pipeline Conference	28 September - 3 October	Calgary, Alberta, Canada	www.asmeconferences.org
Hydrogen Embrittlement – Multi-scale Modelling and Measurement. What is the Impact?	6-8 October	NPL, Teddington	alan.turnbull@npl.co.uk
SI of Components for Renewable Energy Systems	t/b/a	t/b/a	www.fesi.org.uk
Monitoring and RBI of Offshore Structures	t/b/a	t/b/a	www.fesi.org.uk
2015			
SMiRT 23 – 23 rd Conference on Structural Mechanics in Reactor Technology International	10-14 August	Manchester	www.smirt23.org
CP 2015 – 5 th International Conference on Crack Paths	16-18 September	Ferrara, Italy	www.structuralintegrity.eu
2016			
ECF21 – 21 st European Conference on Fracture	19-24 June	Catania, Italy	www.structuralintegrity.eu
2017			
ICF14 – Fourteenth International Conference on Fracture	7-13 May	Rhodes, Greece	www.icfweb.org

