

APPLICATION OF RIVIGNEAUX TYPE TRANSMISSION UNUT ON TRANSMISSIONS OF CONTEMPORARY HIGH-SPEED TRACKED VEHICLES

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The results of kinematic and dynamic analysis of the planetary gear trains RAVIGNEAUX type applied on transmissions of LECLERC and T-80 main battle tanks are given in the paper. Analytical relationships for gear ratios and relative speeds of second single gear train planet gears are derived. The diagram of planet gears relative speed versus input speed is shown. Power flows are determined by the use of method of circumferential velocities and forces and an influence of circulating power on energy losses is analysed. Some problems related to the design of this type of gear trains are pointed out.

Key words: tracked vehicle, main battle tank, planetary gear train, gearbox

PRIMENA PRENOSNIKA TIPRA RAVIGNEAUX U SISTEMIMA ZA PRENOS SNAGE SAVREMENIH BRZOHODNIH GUSENIČNIH VOZILA

U radu su dati rezultati kinematske i dinamičke analize planetarnih prenosnika tipa RAVIGNEAUX primenjenih u sistemima za prenos snage tenkova LECLERC i T-80. U okviru kinematske analize izvedeni su analitički izrazi za ukupne prenosne odnose menjača i relativne brojeve obrtaja satelita drugog planetarnog reda čija je grafička zavisnost od ulaznog broja obrtaja data odgovarajućim dijagramima. Primenom metode obimnih sila i brzina, određeni su tokovi snage u prenosniku i razmotren je uticaj cirkulirajuće snage na energetske gubitke. Izneti su neki problemi vezani za projektovanje prenosnika ovog tipa.

Ključne reči: gusenično vozilo, tenk, planetarni prenosnik, menjač.