

TIMETABLE

HELI JAPAN 2002

Monday, 11 November 2002

Sub Hall	Conference Rm. #1	Conference Rm. #2	Conference Rm. #3
9:00 Registration Open			
9:30 ~ 10:00 Opening Ceremony <Simultaneous Interpretation>			
10:00 ~ 10:50 Opening Session <Simultaneous Interpretation>			
10:50 ~ 11:00 Short Break			
11:00 ~ 12:40 Special Equipment for Life Saving Helicopter <Simultaneous Interpretation>	11:00 ~ 12:40 Aerodynamics I	11:00 ~ 12:40 Unmanned Aerial Vehicle (UAV) I	11:00 ~ 12:40 Health and Usage Monitoring Systems (HUMS)
12:40 ~ 13:40 Lunch Break			
13:40 ~ 14:40 Special Session I <Simultaneous Interpretation>			
14:40 ~ 14:50 Short Break			
14:50 ~ 17:20 Disaster Relief & Rescue Operations <Simultaneous Interpretation>	14:50 ~ 17:20 Aerodynamics II	14:50 ~ 17:20 UAV II	14:50 ~ 17:20 Avionics
17:20 ~ 18:30 Transportation to the Venue for Banquet			
18:30 ~ 20:30 Banquet			

Tuesday, 12 November 2002

Sub Hall	Conference Rm. #1	Conference Rm. #2	Conference Rm. #3
9:00 Registration Open			
9:15 ~ 12:10 Emergency Medical Services (EMS) I <Simultaneous Interpretation>	9:30 ~ 12:00 Rotorcraft Design I	9:30 ~ 12:00 Dynamics & Vibrations I	9:30 ~ 12:00 Acoustics
12:00 (12:10) ~ 13:00 Lunch Break			
13:00 ~ 14:00 Special Session II <Simultaneous Interpretation>	13:00 ~ 15:00 Special Session III <Consecutive Interpretation>		
14:00 ~ 14:05 Seconds for Transfer			
14:05 ~ 16:35 EMS II <Simultaneous Interpretation>	15:00 ~ 16:35 Rotorcraft Design II	14:05 ~ 16:35 Dynamics & Vibrations II	14:05 ~ 16:35 Materials & Structures
16:35 ~ 16:45 Short Break			
16:45 ~ 17:15 Special Session IV <Simultaneous Interpretation>			
17:15 ~ 18:55 Panel Discussion <Simultaneous Interpretation>			
18:55 ~ 19:00 Closing Remarks <Simultaneous Interpretation>			

Monday, 11 November 2002

Opening Ceremony

9:30 ~ 10:00 at Sub Hall <Simultaneous Interpretation>

Opening Address:

Junji Takaki, President of AHS Japan Chapter, Fuji Heavy Industries Ltd.

Key Note Address:

Keiji Kawachi, General Chairperson of Heli Japan 2002, University of Tokyo

Morris E. Rhett Flater, Executive Director of AHS International

Congratulatory Address:

Akio Fukuda, Governor of Tochigi Prefecture

Opening Session

10:00 ~ 10:50 at Sub Hall <Simultaneous Interpretation>

Session Chairs:

Keiji Kawachi, General Chairperson of Heli Japan 2002, University of Tokyo

Morris E. Rhett Flater, Executive Director of AHS International

Presentation I:

(TBD)

Sakamoto, Tochigi Prefecture

Presentation II:

"Can Rotorcraft Be Affordable Transportation Systems?"

Daniel P. Schrage, Georgia Institute of Technology

Special Session I

13:40 ~ 14:40 at Sub Hall <Simultaneous Interpretation>

Session Chairs:

Tomoari Nagashima, Former President of AHS Japan Chapter

John W. Leverton, AHS International

Presentation I:

"Helicopter Transportation – Present Situation, Administrative Issues, and Countermeasure?"

Ayumu Kitazawa, Japan Civil Aviation Bureau

Presentation II:

"FAA Helicopter R&D Concepts to Operational Programs"

William H Wallace, FAA Flight Standards Service

Tuesday, 12 November 2002

Special Session II

13:00 ~ 14:00 at Sub Hall <Simultaneous Interpretation>

Session Chairs:

Wataru Nishikawa, Former President of AHS Japan Chapter, Regional Airlines Institute Corp.

Louis P. Bartolotta, Vice President of Agusta Westland

Presentation I:

(TBD)

Keiji Kohama, Kawasaki Medical School

Presentation II:

(TBD)

Virgil (Lee) Benson, Los Angeles Fire Department

Special Session III

13:00 ~ 15:00 at Conference Rm. #1

<Consecutive Interpretation>

Session Chairs:

Takeshi Makino, Former President of AHS Japan Chapter

Fredric H. Schmitz, University of Maryland

Presentation I:

(TBD)

Gennai Yanagisawa, Engineering System Co. Ltd.

Presentation II:

"Unknown Problems in Human Powered Helicopter"

Akira Naito, Nihon University (Ret.)

Special Session IV

16:45 ~ 17:15 at Sub Hall <Simultaneous Interpretation>

Session Chairs:

Akira Sato, Vice President of AHS International

Daniel P. Schrage, Georgia Institute of Technology

Presentation:

The 2002 AHS Nikolsky Lecture - "The Devil is in the Aeromechanics and Other Rotorcraft Lessons Learned"

Troy M. Gaffey, Bell Helicopter Textron

Panel Discussion

17:15 ~ 18:55 at Sub Hall <Simultaneous Interpretation>

Theme:

Helicopter Life Cycle Value for Customers

Session Chairs:

Akira Sato, Vice President of AHS International

Daniel P. Schrage, Georgia Institute of Technology

Panelist:

James Wang, Sikorsky Aircraft Corporation

Morris E. Rhett Flater, Executive Director of AHS International

Kiyomitsu Mochizuki, Aero Asahi Corp.

Commentator:

Troy M. Gaffey, Bell Helicopter Textron

Hidehiko Obayashi

Wataru Nishikawa, Former President of AHS Japan Chapter, Regional Airlines Institute Corp.

Closing Remarks

18:55 ~ 19:00 at Sub HALL <Simultaneous Interpretation>

Closing Address:

Makoto Uemura, Executive Chairperson of Heli Japan 2002

Inderjit Chopra, University of Maryland

Morning

Monday, 11 November 2002

Sub Hall <i>11:00 ~ 12:40</i> Special Equipment for Life Saving Helicopter	Conference Rm. #1 <i>11:00 ~ 12:40</i> Aerodynamics I	Conference Rm. #2 <i>11:00 ~ 12:40</i> Unmanned Aerial Vehicle (UAV) I	Conference Rm. #3 <i>11:00 ~ 12:40</i> Health and Usage Monitoring Systems (HUMS)
Session Chairs: Takeshi Tomio, Kawasaki Heavy Industries, Ltd. Darrel W. Davis, FreeFlight Systems	Session Chairs: Masaaki Nakadate, National Aerospace Laboratory of Japan Chee Tung, US Army	Session Chairs: Tadahiro Kawada, Kawada Industries, Inc. Larry A. Young, US Army	Session Chairs: Shun-ichi Bandoh, Kawasaki Heavy Industries, Ltd. Leonard Reid, Fatigue Technology Inc.
<p>Paper #1 11:00 ~ 11:25 Overview of the Operational Control and Information System for EMS helicopter K. Kurita, K. Tomoyasu and H. Kobayashi, Kawasaki Heavy Industries, Ltd.</p> <p>Paper #2 11:25 ~ 11:50 IFEX Technologies – Impulse Fire Extinguishing – R. Steur, IFEX GmbH</p> <p>Paper #3 11:50 ~ 12:15 TBD (Heli-Tanker – Activities and Results) Bary Kablan, Erickson; T. Sumi, Osaka Air</p> <p>Paper #4 12:15 ~ 12:40 The Optimization of Aerial Fire-Fighting System against Forest Fire K. Terai, Kawasaki Heavy Industries, Ltd.; Y. Saito, Kawaju Gifu Engineering Co., Ltd</p>	<p>Paper #1 11:00 ~ 11:25 Induced velocity distributions of a Tilting Coaxial Rotor during low speed transition P. Siritanone and T. Nagashima, National Defense Academy</p> <p>Paper #2 11:25 ~ 11:50 Blade Flapping Motion of a Rotor Hovering above a Finite Inclined Ground Plane for Partial and Full Ground Effect Cases N. Iboshi, N. Itoga, T. Nagashima and Y. Hayata, National Defense Academy; J. V. R. Prasada, Georgia Institute of Technology</p> <p>Paper #3 11:50 ~ 12:15 Development on Unsteady Aerodynamic Code for Helicopter Configuration N. Uchiyama, Mitsubishi Heavy Industries, Ltd.</p> <p>Paper #4 12:15 ~ 12:40 Parametric Evaluation of Rotor Airload Prediction Capabilities Y. H. Yu and J. W. Lim, AFDD/AMCOM Ames Research Center</p>	<p>Paper #1 11:00 ~ 11:25 RPH 2A Observation System : Overview K. Suematsu, F. Konno and Y. Onomura, Fuji Heavy Industries Ltd.</p> <p>Paper #2 11:25 ~ 11:50 Autonomous Take-off and Landing by Unmanned Helicopter F. Konno, Fuji Heavy Industries Ltd.</p> <p>Paper #3 11:50 ~ 12:15 A System Framework for the Analysis of UAV Communication Network P. J. Michaelides, A. K. Sinha and R. Kusumo, Royal Melbourne Institute of Technology; W. M. W. Mohamed, Universiti Tenaga Nasional, Malaysia</p> <p>Paper #4 12:15 ~ 12:40 A System Approach to the Design of a Multi-Mission Payload for Vertical Takeoff Unmanned Aerial Vehicle (VTUAV) Y. C.Y.Yuen, A. K. Sinha and R. Kusumo, Royal Melbourne Institute of Technology</p>	<p>Paper #1 11:00 ~ 11:25 Conceptual Study of the Advanced Load and Usage Monitoring System using Optical Glass Fiber for a Bearingless Rotor System J. Kimoto, Kawasaki Heavy Industries, Ltd.</p> <p>Paper #2 11:25 ~ 11:50 Generic Health and Usage Monitoring System (GenHUMS) - A Modular Approach to Aircraft Data Management – C. Trammel, Smith Aerospace</p> <p>Paper #3 11:50 ~ 12:15 Mechanics of Gear Tooth Crack Signals and their Detection in Application for a Helicopter Health Usage and Management System (HUMS) D. Hochmann and E. Bechhoefer, Goodrich Corporation</p>

Sub Hall 14:50 ~ 17:20 Disaseter Relief & Rescue Operations	Conference Rm. #1 14:50 ~ 17:20 Aerodynamics II	Conference Rm. #2 14:50 ~ 17:20 UAV II	Conference Rm. #3 14:50 ~ 17:20 Avionics
Session Chairs: TBD Charlie Crawford, Geogia Institute of Technology	Session Chairs: Atsushi Murashige, Kawasaki Heavy Industries, Ltd. Gloria K. Yamauchi, NASA Ames	Session Chairs: Masayuki Aiba, Japan Defence Academy Arvind Sinha, Royal Melbourne Institute of Technology	Session Chairs: Takashi Kobayashi, Mitsubishi Heavy Industries, Ltd. Charles Trammel, Smith Aerospace
<p>Paper #1 14:50 ~ 15:15 TBD (Rescue Activity on Terrorism in NY) J. Gallucci, New York City Police Department</p> <p>Paper #2 15:15 ~ 15:40 TBD (Big Rescue – Local Prevention of Disasters by Ground Self Defence Force) H. Torigai, Japan Ground Self Defence Force</p> <p>Paper #3 15:40 ~ 16:05 TBD (The Results of Demonstrations of Fire Extinguish Helicopter for Skyscrapers) S. Maekawa, Tokyo Fire Department</p> <p>Paper #4 16:05 ~ 16:30 A Lesson Learned through the Aerial Firefighting Operation on the Extensive Forest Fire around Gifu City, in April 2002 H. Kakuta, Gifu Prefectual Government</p> <p>Paper # 5 16:30 ~ 16:55 Role of Rotorcraft in Life Saving Activities – Past, Present, and Future J. G. Yen, Bell Helicopter Textron, Inc.</p> <p>Paper #6 16:55 ~ 17:20 TBD (Helicopter Operation at Japan Coast Guard) Y. Nishino, Japan Coast Guard</p>	<p>Paper #1 14:50 ~ 15:15 Numerical Simulation of Flow field around Full Configuration Helicopter using Cartesian Euler Solver M. Nakao, Mitsubishi Heavy Industries, Ltd.</p> <p>Paper #2 15:15 ~ 15:40 Aerodynamic characteristics of model rotors – The Performance Prediction with Scale Models – T. Fujino, H. Arakawa and T. Motohashi, Nihon University</p> <p>Paper #3 15:40 ~ 16:05 Stereo Pattern Recognition - The Technique for Reliable Rotor Blade Deformation and Twist Measurement K. Pengel, DNW; R. H. G. Mueller, FIGUS Res. Inst. Germany; B. G. van der Wall, DLR</p> <p>Paper #4 16:05 ~ 16:30 Review of Compressible Dynamic Stall Control Methods C. Tung, Army/NASA Ames Research Center; M. S. Chandrasekhara, Naval Postgraduate School</p> <p>Paper # 5 16:30 ~ 16:55 Wind-Tunnel Experiment Research of Aerodynamic Interactions Between Coaxial Helicopter Rotors and Fuselage Y. Den and J. Hu, Beijing University of Aeronautics and Astronautics</p>	<p>Paper #1 14:50 ~ 15:15 TBD (FFOS 1 - System -) TBD</p> <p>Paper #2 15:15 ~ 15:40 TBD (FFOS 2 - Design -) TBD</p> <p>Paper #3 15:40 ~ 16:05 TBD (FFOS 3 - Control -) TBD</p> <p>Paper #4 16:05 ~ 16:30 Controller Design of Large-Scale Unmanned Helicopter G. Miyamori, T. Akasaka and M. Nakamura, Kawada Industries, Inc.; S. Hashimoto, Oyama National College of Technology; S. Adachi and Y. Segawa, Utsunomiya University</p> <p>Paper # 5 16:30 ~ 16:55 Aerial Movie Shooting for Motion Pictures, Television, and Commercials, and Other Aerial Operations using Unmanned Helicopters H. Yamaguchi, Warner Gray Inc.</p> <p>Paper #6 16:55 ~ 17:20 A Stable VTOL Gimbaled Tilt-prop UAV using Two Fixed-pitch Propellers G. R. Gress</p>	<p>Paper #1 14:50 ~ 15:15 Study Results of the Helicopter Enhanced Vision System H. Okada, T. Takatsuka and K. Kise, Fuji Heavy Industries Ltd.</p> <p>Paper #2 15:15 ~ 15:40 Mid-Air Collision Avoidance Technology: Creating Accurate Situational Awareness in Air Traffic Environments B. Bunevich, Ryan International Corp.</p> <p>Paper #3 15:40 ~ 16:05 FreeFlight Systems WAAS GPS Receiver as used in the Capstone Program D. W. Davis, FreeFlight Systems</p> <p>Paper #4 16:05 ~ 16:30 Overview of Local Surveillance System by using GPS and Inmarsat satellite communication – Development of New Helicopter Operation Supporting System Based on CNS Concept – H. Tamanaka, Pioneer Navicom Inc.</p> <p>Paper # 5 16:30 ~ 16:55 TBD (Radio Administration in Relation to Collision Avoidance System for Helicopter and Small Aircraft) TBD, Pioneer Navicom Inc.</p>

Sub Hall 9:15 ~ 12:10 Emergency Medical Services (EMS) I	Conference Rm. #1 9:30 ~ 12:00 Rotorcraft Design I	Conference Rm. #2 9:30 ~ 12:00 Dynamics & Vibrations I	Conference Rm. #3 9:30 ~ 12:00 Acoustics
Session Chairs: Wataru Nishikawa, Regional Airlines Institute Corp. Egon Kuntner, Air Ambulance Technology	Session Chairs: Noriaki Katayama, Kawasaki Heavy Industries, Ltd. John Coy, NASA Ames	Session Chairs: Kiyoshi Sakura, Mitsubishi Heavy Industries, Ltd. Richard L. Bielawa, R. L. Bielawa Associates, Inc.	Session Chairs: TBD Yung Yu, National Rotorcraft Technology Center
<p>Paper #1 9:15 ~ 9:40 IFR Operations at Heliports T. Tomio, Kawasaki Heavy Industries, Ltd.</p> <p>Paper #2 9:40 ~ 10:05 The New Operation System for EMS and Rescue Helicopters N. Ichikawa, Gifu Prefectural Government</p> <p>Paper #3 10:05 ~ 10:30 Emergency and Medical Service Landing Facilities for Helicopters J. W. Leverton, R. Flater, AHS International</p> <p>Paper #4 10:30 ~ 10:55 TBD (Landing on Highway) Sadaoka, Kobe Fire Department</p> <p>Paper #5 10:55 ~ 11:20 TBD Ariyoshi</p> <p>Paper #6 11:20 ~ 11:45 TBD (Landing on Highway) TBD, Aero Asahi Corp</p> <p>Paper #7 11:45 ~ 12:10 TBD (Landing on Highway) TBD, Sendai City Fire Department</p>	<p>Paper #1 9:30 ~ 9:55 The Virtual Prototyping for Helicopter Transmission K. Hori, M. Shiraotri, I. Murata and S. Asakawa, Fuji Heavy Industries Ltd.</p> <p>Paper #2 9:55 ~ 10:20 Design Robustness Analysis for Mid-Life Upgrade of Helicopters R. Kusumo, A. K. Sinha and M. L. Scott, Royal Melbourne Institute of Technology; D. P. Schrage, Georgia Institute of Technology</p> <p>Paper #3 10:20 ~ 10:45 Cockpit Air Bag System (CABS) for Helicopter K. Katayama, Daicel Chemical Industries, Ltd.; S. Smith, Simula Safety Systems, Inc.</p> <p>Paper #4 10:45 ~ 11:10 Some Problems on General Design of M16 Co-Axial Single Seat Helicopter J. Hu, Y. Deng and M. Cheng, Beijing University of Aeronautics and Astronautics</p> <p>Paper #5 11:10 ~ 11:35 Modus VTOL Hybrid Aircraft F. E. Black and C. Lin Modus Verticraft Inc.</p> <p>Paper #6 11:35 ~ 12:00 Design Peculiarities of Coaxial Helicopter and Their Future Evolution V. Kasyanikov, KAMOV Company</p>	<p>Paper #1 9:30 ~ 9:55 Development of Helicopter Liquid Vibration Absorption System – HeLiVAS – N. Kanehira, A. Tan, M. Nakamura and T. Akasaka, Kawada Industries, Inc.</p> <p>Paper #2 9:55 ~ 10:20 A Study on Blade Torsion Characteristics - Comparison and Evaluation of Analysis with DNW Test Results – N. Kobiki, (Formerly) Kawasaki Heavy Industries, Ltd.; Murashige, Kawasaki Heavy Industries, Ltd.</p> <p>Paper #3 10:20 ~ 10:45 Performance and Stability of a Swashplateless Rotor with Smart Trailing-Edge Flaps J. Shen and I. Chopra, University of Maryland</p> <p>Paper #4 10:45 ~ 11:10 Improving Fatigue and Damage Tolerance of Bushed Lugs in Helicopter Rotor Assemblies L. Reid, Fatigue Technology Inc.</p> <p>Paper #5 11:10 ~ 11:35 Analysis of Dynamic Response of Vertical Flight Direction Control for a Semi-Differential Co-Axial Helicopter M. Chen, Beijing University of Aeronautics and Astronautics</p>	<p>Paper #1 9:30 ~ 9:55 BVI Noise Reduction Research with Canard Blade Tip T. Ota, T. Tsukahara and M. Obukata, Fuji Heavy Industries Ltd.</p> <p>Paper #2 9:55 ~ 10:20 Numerical Study on Blade Vortex Interaction Noise with Lateral Jet Blowing C. Yang and J. Baek, Pohang University of Science and Technology; S. Saito and T. Aoyama, National Aerospace Laboratory of Japan</p> <p>Paper #3 10:20 ~ 10:45 Numerical Simulation of Helicopter Rotor/Fuselage Interactions by Moving Overlapped Grid Method T. Aoyama, N. Kondo and S. Saito, National Aerospace Laboratory of Japan; A. Ochi, Kawasaki Heavy Industries, Ltd.</p> <p>Paper #4 10:45 ~ 11:10 Vortex Wake Geometry of a Model Tilt Rotor in Forward Flight G. K. Yamauchi and W. Johnson, NASA Ames Research Center; A. J. Wadcock, Aerospace Computing Inc.</p> <p>Paper #5 11:10 ~ 11:35 Cabin versus Far-Field Blade-Vortex Interaction (BVI) Noise for Multi-bladed Rotors B. W. Sim and F. H. Schmitz, University of Maryland; Y. Okuno and H. Ishii, National Aerospace Laboratory of Japan</p> <p>Paper #6 11:35 ~ 12:00 A Tool for Low Noise Procedures Design and Community Noise Impact Assessment: The Rotorcraft Noise Model (RNM) D. A. Conner, NASA Langley Research Center; J. A. Page, Wyle Laboratories</p>

Sub Hall 14:05 ~ 16:35 EMS II	Conference Rm. #1 15:00 ~ 16:15 Rotorcraft Design II	Conference Rm. #2 14:05 ~ 16:35 Dynamics & Vibrations II	Conference Rm. #3 14:05 ~ 16:35 Materials & Structures
Session Chairs: Kiyomitsu Michizuki, Aero Asahi Corp. Jing G. Yen, Bell Helicopter Textron, Inc. (Ret.)	Session Chairs: Yasutada Tanabe, Kawada Industries, Inc. BTD	Session Chairs: Shuuichi Yokokura, Fuji Heavy Industries Ltd. Inderjit Chopra, University of Maryland	Session Chairs: Misao Takikawa, Fuji Heavy Industries Ltd. David Hochmann, Goordich Corp.
<p>Paper #1 14:05 ~ 14:30 Study on Reliability of Emergency Medical Transport System with Doctor Helicopter N. Koike, Aichi Institute of Technology; E. Hideshima and K. Yamamoto, Nagoya Institute of Technology; K. Kurita, Kawasaki Heavy Industries, Ltd.</p> <p>Paper #2 14:30 ~ 14:55 Automation Framework for Pre-Mission Success Evaluation of Helicopter Emergency Medical Operations A. K. Sinha and R. Kusumo, Royal Melbourne Institute of Technology; P. Hogan and K. Laycock, Air Ambulance Victoria, Australia</p> <p>Paper #3 14:55 ~ 15:20 An Overview of Helicopters in EMS and Disaster Relief & Rescue Operations L. P. Bartolotta, Agusta Westland</p> <p>Paper #4 15:20 ~ 15:45 Operation, Procedures and Special Equipment for Life Saving Helicopter E. Kuntner, Air Ambulance Technology</p> <p>Paper #5 15:45 ~ 16:10 TBD (Present Situations and Future Prospect of EMS in Tokyo) N. Tane, Tokyo Fire Department</p> <p>Paper #6 16:10 ~ 16:35 TBD (Present Status of EMS at National Disaster Medical Center) J. Inoue and H. Henmi, National Disaster Medical Center</p>	<p>Paper #1 15:00 ~ 15:25 The Commercial Quad Tiltrotor M. Foster, Bell</p> <p>Paper #2 15:25 ~ 15:50 BK117C-2 Helicopter and its Improvement H. Kato, Kawasaki Heavy Industries, Ltd.</p> <p>Paper #3 15:50 ~ 16:15 An Overview of MH2000, Development and Flight Tests K. Sakura, Mitsubishi Heavy Industries, Ltd.</p>	<p>Paper #1 14:05 ~ 14:30 Vibration Reduction Designing for MH2000 M. Ikuta, Mitsubishi Heavy Industries, Ltd.</p> <p>Paper #2 14:30 ~ 14:55 Nonlinear Analysis of Vertical Autorotation Characteristics of A Rotor Including Blade Flapping Motion P. Perinkul and T. Nagashima, National Defense Academy</p> <p>Paper #3 14:55 ~ 15:20 Practical Analysis and Testing of Rotorcraft Instabilities Using a Frequency-Domain Based Methodology R. L. Bielawa, R. L. Bielawa Associates, Inc.</p> <p>Paper #4 15:20 ~ 15:45 Engineering Studies into Vertical Lift Planetary Aerial Vehicles L. A. Young and E. W. Aiken, US Army; M. R. Derby and J. L. Johnson, Aerospace Computing Inc.; J. Navarrete, San Jose State University; R. Demblewski, College of San Mateo</p>	<p>Paper #1 14:05 ~ 14:30 Structural Substantiation of Bearingless Main Rotor S. Yasui, H. Taguchi and T. Hagi, Fuji Heavy Industries Ltd.</p> <p>Paper #2 14:30 ~ 14:55 Damage Tolerant Design Method of a Composite Rotor System S. Bandoh, Kawasaki Heavy Industries, Ltd.</p> <p>Paper #3 14:55 ~ 15:20 Face Gear Development and Endurance Test for Aircraft Application Y. Sato, Kawasaki Heavy Industries, Ltd.</p> <p>Paper #4 15:20 ~ 15:45 Low Cost "Rivet-less" Construction T. Takehara, K. Yamaki and T. Hiramoto, Fuji Heavy Industries Ltd.</p>