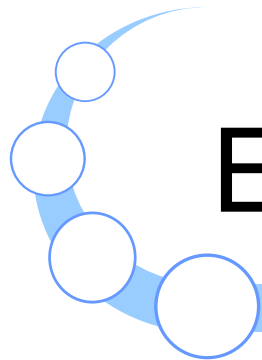




# Past, Present and Future of GEN H-4

The unique single seated  
Co-axial Helicopter.

**President Gen Yanagisawa**  
**GEN CORPORATION**



# Engineering System Co.,Ltd.

## o Corporate profile.

**Establishment** Apr. 1<sup>st</sup> 1970  
**Capital** ¥ 20,000,000-

**Directors** CEO Gen Yanagisawa  
Director Yukiko Yanagisawa, Masumi Yanagisawa and Osamu Maruyama  
**Auditor** Masutoshi Narusako  
**Employees** 28

**Head quarters** Matsumoto, Nagano, Japan

**Lines of Business** Consulting/ Developing/ Designing and Production of Automated Machines for Industrial use.

Developing/ Designing and Production of Medical Appliance

Developing/ Designing and Production of motors and personal helicopter

**Main customers** Kyocera, OMRON, EPSON, Olympus, Komatsu, Azwell, Hitachi group, Nihon Kikai Kogyo,  
Kawada Industries, Chiyoda Medical, Konika Medical,  
Shinsyu University, National Insutitute of Advanced Industrial Science and Technology,  
Himeji Insutitute of Technology, Keio University etc.

# Development of The Helicopter

- *I wanna Fly! ~ dreams in the childhood ~*





# Chronological table of the development

- '85 : Start to develop GEN125 the motor
- '89 : Test flight with GEN125 powered hang-glider
- '94 : Exhibit BDH-1 (2 motors model) at aero space '94
- '95 : A maiden flight of BDH-2 (3 motors model)
- '96 : Jump flight with BDH-3
- '97 : Develop GEN H-4 (4 motors model)
- '97 : Exhibit GEN H-4 at Oshkosh AirVenture '97
- '98 : A maiden flight at Oshkosh AirVenture '98
- '99 - '01: Exhibit / Flight at Oshkosh AirVenture
- '01 : Start to develop Radio controlled GEN H-4
- '01 - '02: Exhibit / Flight at Sun'n Fun Air show

# GEN 125 the motor of GEN H-4

- Light weight
- High power
- High R.P.M.
  
- Boxer type
- 125cc
- 10HP/8500rpm
- 2.8kg
- TBO500hr



# The Hang glider



# The Para glider



# The wind powered bicycle

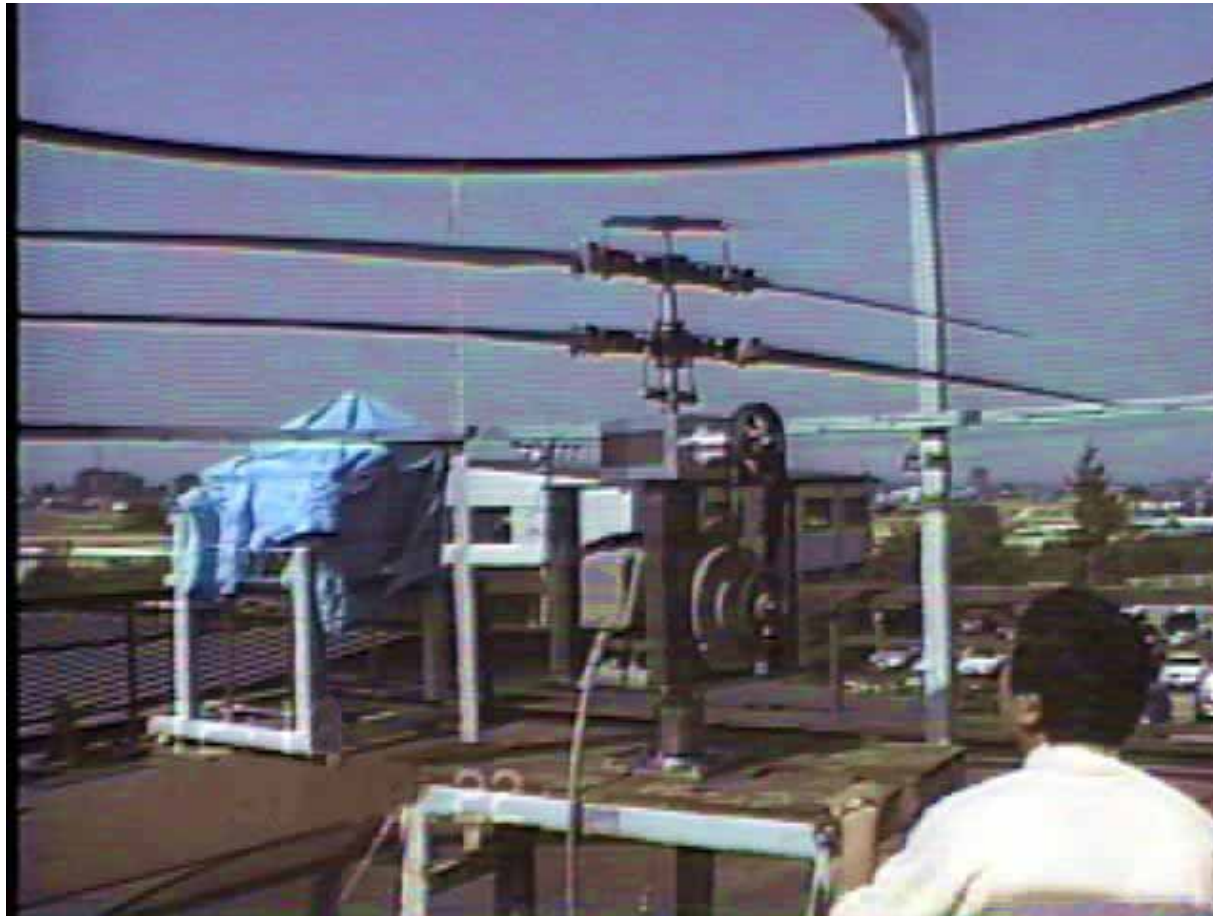




# The Flying saucer (DBR-2)



# Measurement of 6 axis components



# The Flying saucer (DBR-1)



# BDH-1 (image)



# BDH-2 (early model)



# The maiden flight (BDH-3)



# BDH-3

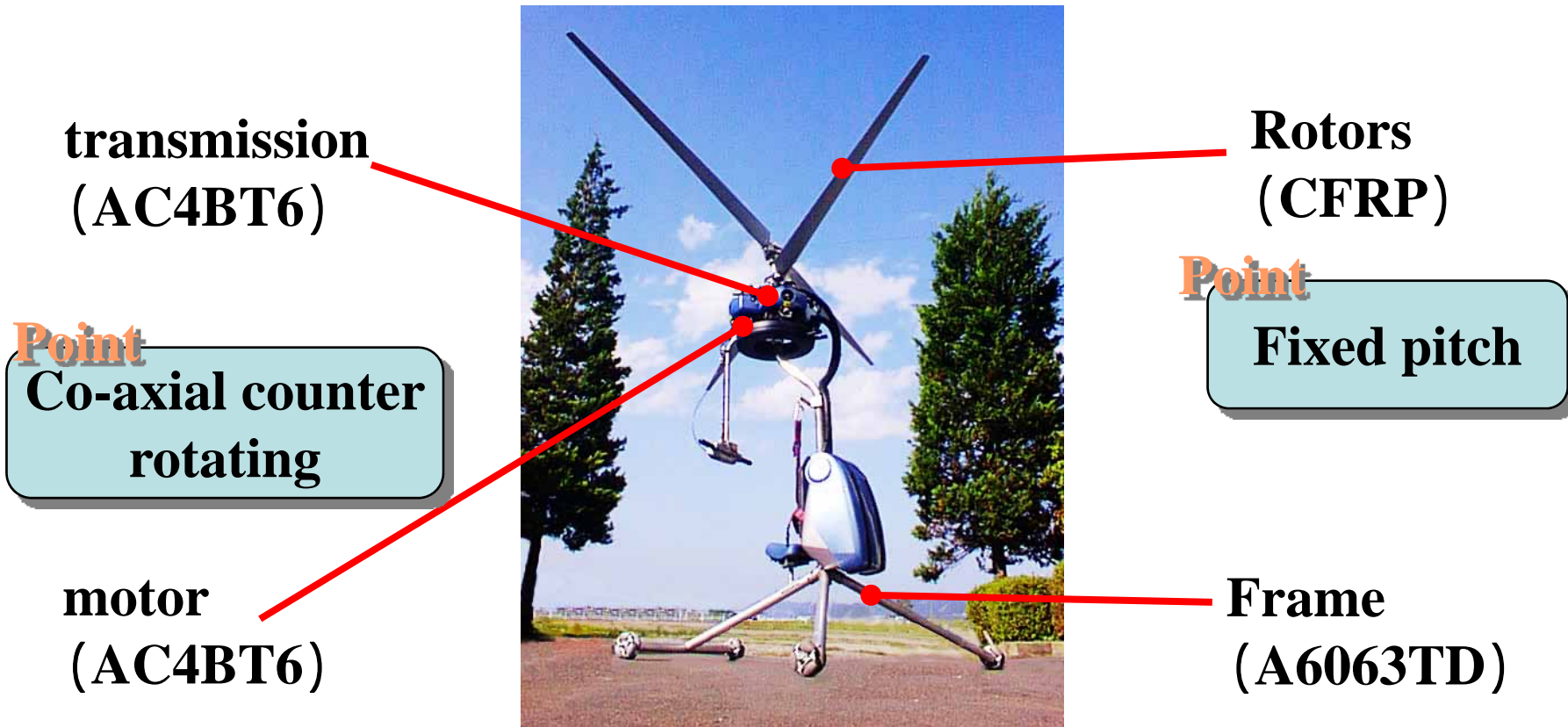


# GEN H-4 (early model)



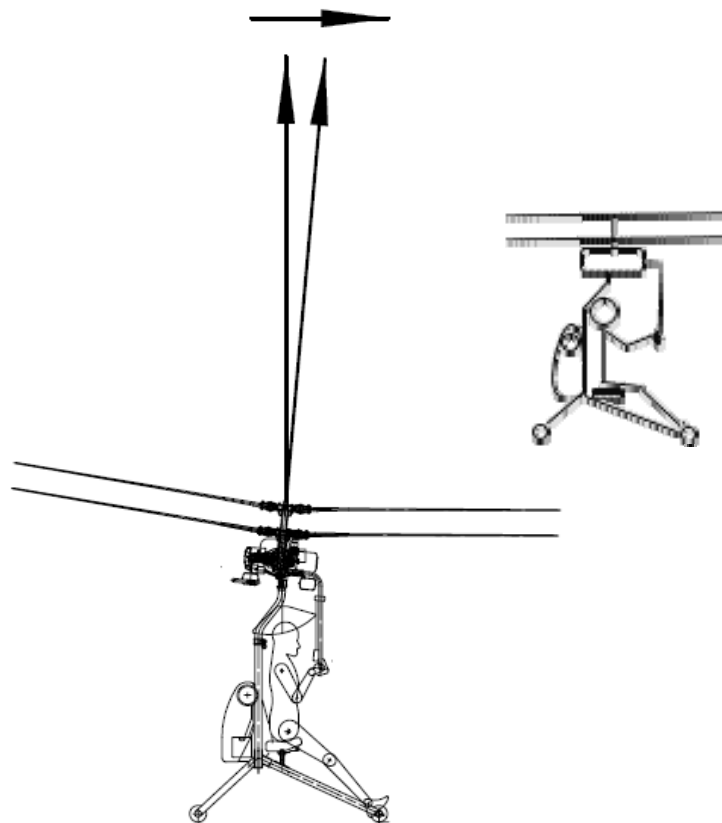


# The structure of GEN H-4



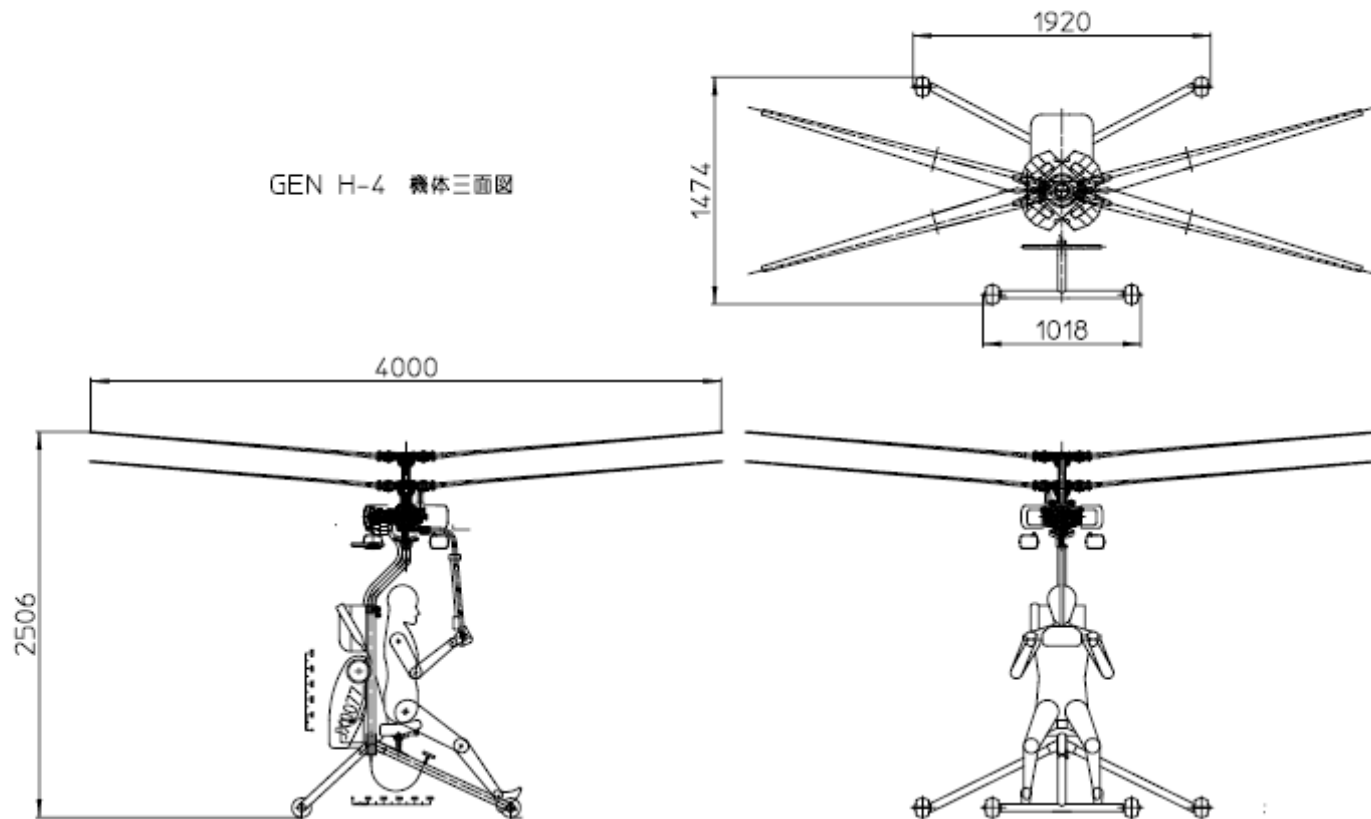
**GEN H-4: The World's smallest Helicopter**

# Tilt unit

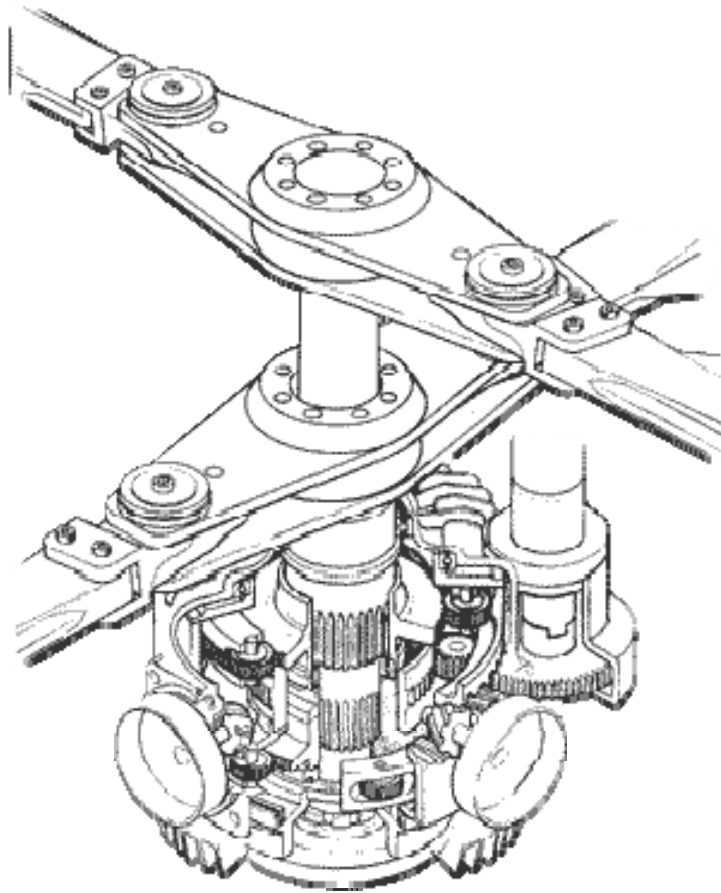


# GEN H-4 機体三面図

GEN H-4 機体三面図

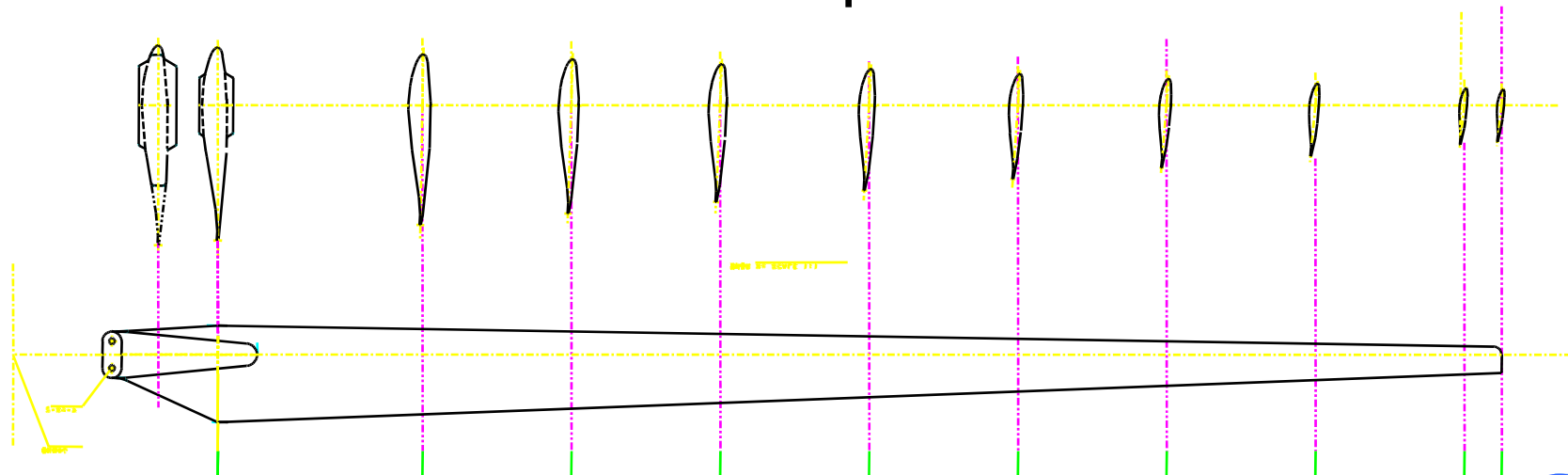


# Transmission



# Rotor

- Diameter 4.0m
- RPM 800-900rpm
- Pitch Fixed
- Material CFRP composite



# Curved Rails



## GEN H-4 in Oshkosh Air Venture '98



# GEN H-4 in Oshkosh Air Venture '99





# The traction test



# Demo flight in Sun 'n Fun



# Demo flight in Yokohama



# Demo flight in Oyabe



# The radio controlled model



# Unmanned version test



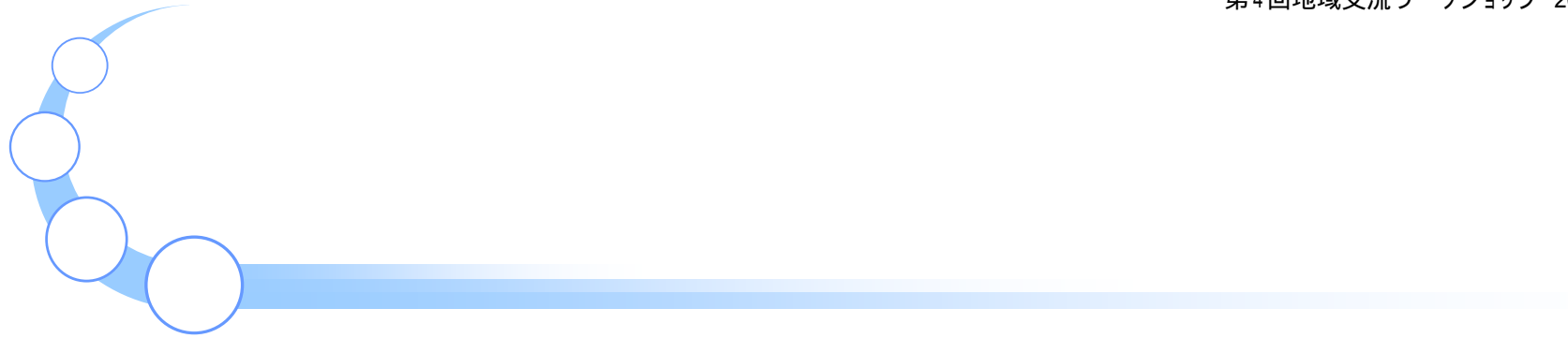
# Unmanned version



# Flight training







**御清聴ありがとうございました。**