Past, Present and Future of GEN H-4
The unique single seated Co-axial Helicopter.

President Gen Yanagisawa
GEN CORPORATION
## Engineering System Co., Ltd.

### Corporate profile.

<table>
<thead>
<tr>
<th>Establishment</th>
<th>Apr. 1st 1970</th>
</tr>
</thead>
<tbody>
<tr>
<td>Capital</td>
<td>¥ 20,000,000-</td>
</tr>
<tr>
<td>Directors</td>
<td>CEO Gen Yanagisawa, Director Yukiko Yanagisawa, Masumi Yanagisawa and Osamu Maruyama</td>
</tr>
<tr>
<td>Auditor</td>
<td>Masutoshi Narusako</td>
</tr>
<tr>
<td>Employees</td>
<td>28</td>
</tr>
<tr>
<td>Head quarters</td>
<td>Matsumoto, Nagano, Japan</td>
</tr>
<tr>
<td></td>
<td>Developing/ Designing and Production of Medical Appliance</td>
</tr>
<tr>
<td></td>
<td>Developing/ Designing and Production of motors and personal helicopter</td>
</tr>
<tr>
<td>Main customers</td>
<td>Kyocera, OMRON, EPSON, Olympas, Komatsu, Azwell, Hitachi group, Nihon Kikai Kogyo, Kawada Industries, Chiyoda Medical, Konika Medical, Shinsyu University, National Insititute of Advanced Industrial Science and Technology, Himeji Insititute of Technology, Keio University etc.</td>
</tr>
</tbody>
</table>
Development of The Helicopter

- I wanna Fly! ~ dreams in the childhood ~
### Chronological table of the development

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

- Transmission (AC4BT6)
- Rotors (CFRP)
- Point: Co-axial counter rotating
- Motor (AC4BT6)
- Fixed pitch
- Frame (A6063TD)

GEN H-4: The World’s smallest Helicopter
Tilt unit
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。