If fire service personnel are dead due to their duty, such as fire suppression, rescue or first-aid activities, they will be buried in the National Cemetery, based on the provisions of Article 14-2 of the Fire Service Act that those who are dead or injured on their duty, such as fire suppression, rescue or first-aid activities, the bereaved family shall be cordially received under the Law for Honorable Treatment & Support of Patriot. Only soldier, policeman, or fireman can be buried in the National Cemetery.

References
1. Data and Statistic of Fire Administration in Jan. 2000, the Fire Administration Bureau
2. The Fire Statistics Annual Report in Feb. 1999, the Fire Administration Bureau
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4. The Related Law and Regulations in Korea
   a. The Regulations Defining Establishment of Fire Service Organizations
   b. The Regulations Defining the Standard of Resources
   c. The Fire Public Service Law, the Fire Service Personnel Appointment Acts, and the Enforcement Regulations of the Fire Service Personnel Appointment Acts
   d. The Regulations Defining Appointment of Fire Service Personnel’s Promotion and the Enforcement Regulations of the Regulations Defining Appointment of Fire Service Personnel’s Promotion
   e. The Regulations Affecting Fire Service Personnel’s Service
   f. The Regulations Affecting Fire Service Personnel’s Training
   g. The National Public Service Law and Local Public Service Law
   h. The Law of Honorable Treatment & Support of Patriot

ABSTRACT

After the World War II, Japan was racked by hunger, illness, and cold. However, by using the knowledge and technology introduced from the developed countries before the war, the industry was revived, and even new industries were established. In the meantime, a large number of labors were injured and killed in the dangerous work site. It was fortunate that the safety experts were sent from the United States by the U.S. Forces’ requisition. Then, along with the technological innovation in the dangerous industries such as steel and shipbuilding, the new industries such as car, television, and information changed the production center into a clean and safe place. However, since Japan is full of mountains and surrounded by the sea, most of its land is humid and rainy. Compared with the less humid country, corrosions occur quickly, and it can lead to the excessive cost for preservation. Moreover, although earthquake is not the major issue here, the demand for strong artifacts are very high, compared with the country with no earthquake. Here, we would like to introduce the failure rather than success and receive criticism.

KEYWORDS: Japan, Industrial Safety, Natural Environment

1 DISASTERS OF THE WORLD

As the coal was began to be used in the 18th century Britain, industrial accidents started to take place in the dark and narrow coal mine where the methane often generates. Since the risk of the explosion of the methane and the coal dust was not clear, explosive accidents often took place.

The boiler, once triggering the Industrial Revolution, had low hyperbaric-pressure at the
beginning. However, as the hyperbaric pressure rises, it was often placed in the separate building to minimize the damage from the explosion. Similarly in Japan, to alleviate the damage from the explosion, the shipping agent towed the passenger boat with the steamboat.

The growth of the steam locomotive created the railroad service that requires civil engineering technologies such as tunneling and bridge construction. Both of them were accompanied by industrial accidents like crashing, flooding, and bridge destruction.

Also, though electricity was gradually developing as energy, the compressed air was temporarily attracting the people's expectation as major energy. In Paris, the 400km pneumatic piping was laid and used as the power for such things as clock and private-power-generation machine. Undoubtedly, the air-engine vehicle had also been introduced instead of the steam locomotive and used in the methane-generating coal mine. Even in today, the compressed air is still used in the power of the door and the brake of the train, and compressed air is stored and then used for power generation.

This compressed air also caused intense explosions in the compressor line that uses inflammable lube. The accident happened in the French coal mine, and it took the investigation to find out for the first time that the oil-film detonation can cause such accident. Similar accidents took place in Britain and Germany, but in Japan, it only came to notice after the World War II.

Although the dam had been constructed from ancient times for irrigation and potable water, it was the rise of electricity as the major energy that started the construction of large-scale dam. In the 20th century, about 200 internationally prominent dams collapsed, and about 10,000 people were killed. The Japanese dams were constructed with the technology gained from such shortcomings in the West. For this reason, Japan had almost no dam accident except for the stag dam.

The chemical industry also progressed in Britain, France, Germany, etc. Here, we will mention celluloid as an example. It is a thermoplastics made by adding the camphor of the plasticizer to the nitrocellulose (also called the guncotton). It was a very dangerous material, igniting below 200 degrees C, having quick flame transmission, and very hard to extinguish. However, for its easy elaboration, beautiful coloring, and cheapness, the celluloid is widely used for films (for movies and photograph, including the X-ray use), toys, and stationeries, even though its risk was known.

In 1936, 27,000t of celluloid were produced around the world, and Japan occupied 40% of the production. Naturally, fire and gassing accident happened frequently. For this reason, the Department of the Interior in Japan translated the celluloid-controlling methods in European countries for reference and announced the safety measure. The entrance door of the movie theaters became fireproof and out-swinging, the projection room was made fire-resistant, and the projection engineer's rating constitution was carried out, but the accident in the local works and public halls continued even after 1945. However, the fire-resistant cellulose acetate began to be used from around 1955 and later succeeded by the polyester.

In addition, such accidents as following occurred. Factory lodging fire, dry-cleaning store fire (where gasoline is used), explosion of the illumination and the calcium carbide for welding (irrigation generates the acetylene), workers being caught in the revolution belt in the machine factory, toxinosis from the carbon bisulfide in factories, toxinosis by the carbon monoxide in the iron mill, etc.

2 INDUSTRIAL ACCIDENTS IN JAPAN AFTER 1945

First, the increased production of food, coal, and iron were planned, but explosions of the raw-material gas took place at the factories producing manure from ammonium sulfate. Explosions, oxygen deficiencies, cave-ins, and flooding frequently took place in the coal mine. At the iron mill, the measures were taken to prevent the blast-furnace-gas explosion and intoxication.

However, Japan had industrial accidents 10 times more than the United States at the time. The U.S. occupation army noticed this situation and called the experts from their country in October 1950 to give directions in the factories all over Japan.

From around 1950, people began to give efforts to the production of export materials to realize the better life. The shipbuilding engineers of the former Navy developed the block construction technique. The riveting was replaced by the electric welding, and various ships for domestics and overseas were launched one after another. However, industrial accidents such as electric shock in the electric welding, fire from the oxygen for cutting and leaked acetylene, explosion, and crash from footing occurred frequently. The "Shipbuilding Safety Council" was formed in 1947, and mutual safety check was carried out. Furthermore, the safety section was organized in the Shipbuilders' Association of Japan, and accidents began to decrease gradually.

Similar cases were also seen in such industries as the iron, automobile, cement, ammonium sulfate, soda extractive, etc. In the iron industry, the German documents and other materials were given out to companies to treat oxygen safety at the time the oxygen steel manufacturing was developed. Moreover, to prevent similar accidents or disasters from taking place again, the information magazines and the bulletins were published to introduce cases of accidents and foreign documents. They had effective results.

Due to these efforts, Japan's frequency rate, one of the parameter for the disaster incidence rate, stayed lower than the rate of the United States in 1971. Also, the quality of the various products improved. For example, with the steam iron, the announcement by the product-test magazine for consumers on the 2 performance and quality test before and after 1971 showed...
the position of Japan and the United States reversed.

On the other hand, various kinds of industrial accidents frequently occurred in the construction of large-scale hydroelectricity dam, road, railroad, canalization, and building. When the construction was completed, the victim's memorial-service monuments were often built near the field.

Furthermore, congestion of the cities progressed, and railroad accidents, exhaust-gas from the automobile, waste problem in houses and factories came to attract the public attention.

3 CONCLUDING REMARKS

The industrial structure of Japan shifted from the heavy industries to the small and frivolous type of industries and later turned into today's information-technology type. In the meantime, the robotization of labor, automation, and depopulation progressed, and the industrial accident decreased sharply. On the other hand, the success of such safety measures paralyzed the people's sensitivity toward danger, and human error came to attract the people's attention. The use of penicillin was once expected to sweep away the disease, but the disease germ changed itself to nullify the medicine. Just as new medicines are being developed one after another, we must continue to develop new measures for accidents and disasters, since they are in constant change.

APPENDIX

History of Safety Technology in Postwar Period

<table>
<thead>
<tr>
<th>Date</th>
<th>Place</th>
<th>outline</th>
<th>Dead/Injured</th>
</tr>
</thead>
<tbody>
<tr>
<td>1948</td>
<td>Japan</td>
<td>The use of the coal mine pocket illumination was prohibited except for the safety electric light. Since the use of safety hand lamp which burns petroleum etc. stopped, the number of oxygen deficiency accidents increased.</td>
<td></td>
</tr>
<tr>
<td>1949-06-24</td>
<td>Kawasaki, Kanagawa</td>
<td>A hydrogen explosion occurred in a manure works.</td>
<td>19/80</td>
</tr>
<tr>
<td>1949-07-24</td>
<td>Aichi</td>
<td>A fire caught on the gasoline which leaked from an edible-oil works and led to an explosion.</td>
<td>8/3</td>
</tr>
<tr>
<td>1950-06-09</td>
<td>Matsuura, Gunma</td>
<td>The mud and rocks recollapsed during the repairing of a mudslide at the Kamamadaira Station.</td>
<td>50/23</td>
</tr>
<tr>
<td>1950-07-30</td>
<td>Kanazawa, Niigata</td>
<td>A fire broke out during the fireworks manufacturing and led to an explosion of fireworks.</td>
<td>10/2</td>
</tr>
<tr>
<td>1950-09-03</td>
<td>Niigata</td>
<td>A cave-in occurred during the JNR Shinano River power-generation irrigation-canal tunnel's concrete construction.</td>
<td>44/</td>
</tr>
<tr>
<td>1950-12-12</td>
<td>Kanayama, Fukushima</td>
<td>The wire rope was cut when a man was riding on the cableway for loading. The cage ran off.</td>
<td>15/5</td>
</tr>
<tr>
<td>1950</td>
<td>Japan</td>
<td>Explosives Control Law was made.</td>
<td></td>
</tr>
<tr>
<td>1951-04-24</td>
<td>Yokohama, Kanagawa</td>
<td>Type 63 commutation-train was destroyed by fire in Sakuragicho.</td>
<td>106/92</td>
</tr>
<tr>
<td>1951-07-11</td>
<td>Kameoka, Kyoto</td>
<td>The Heiwaike Earth Dam broke.</td>
<td>97/-</td>
</tr>
<tr>
<td>1952-09-24</td>
<td>Aogashima, Tokyo</td>
<td>The observatory ship investigating Myoujinhou was wrecked.</td>
<td>31/-</td>
</tr>
<tr>
<td>1952-12-23</td>
<td>Nagoya, Aichi</td>
<td>Ammonium nitrate exploded in a chemical plant.</td>
<td>22/363</td>
</tr>
<tr>
<td>1952</td>
<td>Japan</td>
<td>There were 70 cases of fire breaking out from movie films.</td>
<td>124/-</td>
</tr>
<tr>
<td>1953-02-14</td>
<td>Fuchu, Tokyo</td>
<td>Explosives exploded at an ordnance factory.</td>
<td>20/3</td>
</tr>
<tr>
<td>1953-03-19</td>
<td>Fukukoka</td>
<td>There was a cave-in during a railroad tunnel construction resumption after 15 years of construction withdrawal.</td>
<td>21/4</td>
</tr>
<tr>
<td>1954-03-03</td>
<td>Tsurumi, Kawasaki, Kanagawa</td>
<td>An oxygen deficiency and air spout occurred during pneumatic-caisson construction.</td>
<td>5/3</td>
</tr>
<tr>
<td>1954-05</td>
<td>Japan</td>
<td>Toshiba resumed the production of poly chlorinated biphenyl.</td>
<td>2/10</td>
</tr>
<tr>
<td>1954-09-06</td>
<td>Hakodate, Hokkaidou</td>
<td>In the construction of hydroelectric-power-station, blasting, caves-ins and other industrial accidents occurred frequently during the cave-in construction.</td>
<td>11/3</td>
</tr>
<tr>
<td>1954-09-26</td>
<td>Hakodate, Hokkaidou</td>
<td>The Toyamaru was capitalized.</td>
<td>1172/-</td>
</tr>
<tr>
<td>1954</td>
<td>Japan</td>
<td>Parathion poisoning occurred one after another.</td>
<td>307/-</td>
</tr>
<tr>
<td>1955-02-04</td>
<td>Sumishima development was promoted.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>1955-04-16</td>
<td>Kobe, Hyogo</td>
<td>A LOX jar exploded in a shipbuilding yard.</td>
<td>3/-</td>
</tr>
<tr>
<td>1955-04-16</td>
<td>Sasebo, Nagasaki</td>
<td>The coal-mines Mt. Botha collapsed from the heavy rain.</td>
<td>73/-</td>
</tr>
<tr>
<td>1955-05-11</td>
<td>Off Takamatsu, Kagawa</td>
<td>The Setouchi Sea-Uko ferry-boat &quot;Shiunmaru&quot; made a collision.</td>
<td>168/57</td>
</tr>
<tr>
<td>1955</td>
<td></td>
<td>One-way-traffic route was prepared.</td>
<td></td>
</tr>
</tbody>
</table>
1986-07-12  Korea  An accident occurred at the Bukrock Dam  114
1986-04-01 Akabara, Hokkaido  Gas explosion and fire occurred at the  60  1/
Mujin Coal Mine.
1955 Japan  Arsenic was mixed in the Morinaga milk and caused  130  12000
poisoning.
1956-05-15 Bunkyo, Tokyo  A professor at University died from  1/0
penicillin shock. This has made known the fact that dozens of  people had died in the past.
1957-04-12 Hiroshima  An overloaded boat, the Kitazawara No. 5 sank in the  113/49
Shiokawa Sea.
1957-04-24 Fukuoka  Arsenic poisoning caused people inside the ship under repair.  12/2
1957 Japan  Electrode during electric welding occurred frequently at  18/6
shipbuilding yards.
1958-06-10 Tokyo  Normal operation was resumed after the ADF  code was enforced.
1958-03 Yamaguchi, Fukuoka  The Kannon Road Tunnel opened.  55/6
1958-07-15 16:10 Yukin, Ota, Tokyo  Nitroglycerine-manitano exploded at a  13/23
medicine-manufacture works.
1958-07-30 Fuchu, Tokyo  A fireworks factory exploded.  13/1
1958-07-08 Yokohama, Kanagawa  An operator was tetraethyl-lead-  8/21
poisoned while cleaning the fuel tank of the U.S. Forces. 1959-07-28: 103 people who died from electrocution  were found in the ground part of the block of persons, 103  persons were burned.
1959-07-09 Japan  Nitroglycerine givco used to prevent freeze explosion  2/9
caused nitroglycerine glycol poisoning at a powder factory.
1959-07-11 09:43 Ube, Yamaguchi  An oil-gas hydrogen low-temperature-  11/73
separation purification facility (NOx+ accumulation organic)  exploded and cold-service-thermal-insulation material caught fire.
1959-11-20 10:25 Yokohama, Kanagawa  Fire broke out from the apparatus, and  3/560
the TNT and the activated charcoal hexogen nearby exploded  during an experiment using activated charcoal to purificate the  filtration of melted TNT.
1959-12-11 04:52 Yokohama, Kanagawa  A TNT motor lorry collided with a  4/109
dump truck loaded with gravel on the Keihan National Highway No. 2.
1959 Japan  The manufacturing of emberrtment with benzene  1959's
benzene compounds was suspended in the line of the frental  distribution of poisoning.
A destruction occurred from material impairment of the turbine and  the generator axis.
237/45 Kumanogawa, Wakayama  Dynamite exploded during the  23/9
construction of a electric-power-plant channel.
1960-02-27  Kumanogawa, Wakayama  Dynamite exploded during the  23/9
construction of a electric-power-plant channel.
1960-03 Fukuoka  Flood occurred in the Toyosu Coal Mine.  67/6
1960 Japan  38 people died from carbon-monoxide-poisoning caused by  the town gas. The number decreased gradually afterwards.
<table>
<thead>
<tr>
<th>Year</th>
<th>Reason</th>
<th>Location</th>
<th>Details</th>
</tr>
</thead>
<tbody>
<tr>
<td>1969-01-05 11:30</td>
<td>Off Yajimazaki, Chiba</td>
<td>The hull of the are transport-ship collapsed during the ring beam method construction.</td>
<td>31 / 1</td>
</tr>
<tr>
<td>1969-04-11</td>
<td>Sumida, Tokyo</td>
<td>Steel-sheet-pilings of the Shin-Yotsuki Bridge collapsed during the ring beam method construction.</td>
<td>8 / 0</td>
</tr>
<tr>
<td>1969-04-04 12:45</td>
<td>Bunkyo, Tokyo</td>
<td>Explosion occurred in the hyperbaric-oxygen medical-treatment room of the Tokyo University Infirmary.</td>
<td>4 / 0</td>
</tr>
<tr>
<td>1969-04-25 08:24</td>
<td>Kurum, Fukuoka</td>
<td>A rubber factory was burned.</td>
<td>11 / 7</td>
</tr>
<tr>
<td>1969-11-25</td>
<td>Osaka</td>
<td>A pneumatic-caisson-flood occurred from unusual depression during the sluice construction in the Shirinashi River.</td>
<td>11 / 5</td>
</tr>
<tr>
<td>1966</td>
<td>Japan</td>
<td>Pronatis-retnopathy frequently occurred when oxygen utilized upbringing box was used.</td>
<td></td>
</tr>
<tr>
<td>1966</td>
<td>Off Yajimazaki, Chiba</td>
<td>The ore transport ship &quot;California Maru&quot; was flooded and sank.</td>
<td>5 / 0</td>
</tr>
<tr>
<td>1970-04-08 17:15</td>
<td>Osaka, Osaka</td>
<td>The town-gas spouted and exploded from the medium-pressure gas pipe at the construction site of the Tenroku Subway.</td>
<td>79 / 425</td>
</tr>
<tr>
<td>1970</td>
<td>Osaka</td>
<td>A pneumatic-caisson-flood occurred from unusual depression during the sluice construction in the Shirinashi River.</td>
<td>26 / 61</td>
</tr>
<tr>
<td>1970-12-09 11:00</td>
<td>Kumagaya, Saitama</td>
<td>The oxygen and acetylene containers under welding exploded at a factory. Normal slate -&gt; Safety slate (prevent the treading-through fall on the slate roofing).</td>
<td>8 / 8</td>
</tr>
</tbody>
</table>

**Uninhabited tunnel shield driving method.**

- 1971-07-30 14:00 | Shirakawa, Ibaragi | The ALL NIPPON AIRWAYS B727 and the Self-Defense Forces F86F fighter under training collided in the air. | 162 / 1 |
- 1971-11-11 15:30 | Kawasaki, Kanagawa | People were crushed under of the great amount of mud and rocks which fell down during the cliff collapse experiment at the Iteda Ryokuchi. | 15 / 10 |
- 1971-12-04 21:50 | Toyonaka, Osaka | The municipal purification plant had chlorine spouted during the interchange of the chlorine cylinder for disinfection. The nearby citizens took shelter. | 0 / 375 |
- 1971-12-25 | Seoul, Korea | The Tienaihn Hotel was burned. | 163 / 63 |
- 1972-02-21 12:00 | Kashima, Baragi | The accessory heavy-fuel oil boiler of a cargo boat exploded and the boat sank. | 12 / 2 |
- 1972-05-13 around Southern Osaka | | Fire broke out from the electric construction | 118 / 81 |
- 1972-06-05 14:00 | Kaisan, Wakayama | The electric power plant of the Kansai Electric Power Company. The shaft oscillated and bursted during the trial run of the generator. The fire caught on to the hydrogen for cooling. | 0 / 0 |
- 1972-07-29 | Fukushima | The indication of the computer hindered, and a train derailment accident occurred in the Kooriyama marshalling yard. | 0 / 0 |
- 1972-11-06 01:13 | Fukuoka | Fire broke out from the dining car of the express in the Hokuurika Line's Hokuriku tunnel. The power failed during the separation of the dining car and the passengers were poisoned by carbon monoxide. | 101 / 714 |
- 1973-08-12 22:50 | Gita | The chemical-plant's pesticide bailment was burned, and poisonous gas was generated. | 0 / 202 |
- 1973-08-12 04:40 | Korea | A petroleum-tanker overturned in the Kyongbo Line Yongdong station and burned. | 46 / 46 |
- 1973-11-29 around Kumamoto, Kumamoto | The Daiyoi Department Store burned. | 104 / 124 |
- 1973 | Japan | Apartment houses and mansions exploded from LP gas. Chemical plants in industrial-complex exploded frequently. | 8 / 385 |
- 1974-08-30 12:45 | Chiyoda, Tokyo | The Mitsubishi Heavy Industry's building was blasted by terrorism. Many people got hurt from the pieces of glass. The Tokyo bay Nakase route A LPG tanker and a cargo-boat collided. They sank on the 28th. | 33 / 6 |
- 1974-12-11 | Japan | The shinkansen was suspended for half a day and the railway was entirely isolated for safety. | 0 / 0 |
- 1974-12-18 20:40 | Mizushima, Kurashiki, Okayama | At the Mitsubishi Oil Mizushima oil-refinery, the heavy-fuel-oil spouted by the destruction of the desulfurization heavy-fuel-oil tank's bottom edge. | 0 / 0 |
- 1975-01-06 | Malacca Preturn, Singapore | A large tanker "Showawamara" stranded and crude-oil flowed out. | 0 / 0 |
- 1976-12-17 17:12 | Singapore | An earthquake occurred off Miyagi Prefecture. 400 sets of elevators were damaged. | 28 / 11128 |
- 1978-09-09 | Akagi, Gunma | While placing of concrete from the concrete mixer truck at the nose of the Aysdo Bridge over the Tone River, the concrete fell with an extraordinary noise and workers were killed. | 4 / 5 |
- 1978-10-12 | Singapore | The oil tanker of Greece staying at the dock for cooling exploded. | 76 / 67 |
1979-04-20 14:40
Minamikumamoto, Kumamoto There was a fire at the construction site of the entry Minami-Kumamoto Ooshishimizu Tunnel.
1979-05-21 14:00
Osaka, Osaka Sparks went up while welding the fourth floor lift at the Sumiyoshi Rubber's office which is also a workshop. Fire caught on to the urethane in the first floor balustrade and exploded.
1979-07-11 18:25
Yazuo, Shizuoka There were car crashes on the Tomei highway Nihon-zaka tunnel. There was an explosion and 189 cars were damaged by the fire.
1980-08-16 09:30
Shizuoka, Shizuoka The underground "golden town" near the station had a town-gas explosion.
1980-11-25
China A drilling ship sank in the Bo Hai Oil Field.
1980
Japan The industrial-robot began to spread from this year.
1981-10-16 12:40
Yubari, Hokkaido There was an outbreak of gas and fire explosion at Hokuton Yubari New Mine.
1981-11-17
Manila, Philippines The Film Palace, a six-story building being built for the International Festival of Film, had a cave-in during the construction and people were buried alive.
1982-02-08 03:24
Chiyoda, Tokyo Hotel New Japan had a fire.
1982-03-18 15:15
Sasebo, Nagasaki Fire broke out from the Indian tanker Harumi under repair in the Sasebo heavy industry's Sasebo shipbuilding yard.
1982-10-03 08:30
Kiyotake, Miyazaki The exhaust-pipe of the VLSI manufacture pretreatment building's plasma-CVD facility had fire.
1983-04-13
Indonesia A liquified gas factories exploded.
1983-10-25
Off Hainan Dao, Guangdong, China The petroleum excavating ship submerged by the typhoon in the Glimma Java Sea.
1983-11-19
Phatthum Thani, Thailand The first floor of the toy manufacturing factory had been flooded by the deluge damage in September, and the second and third floor suddenly collapsed.
1983-11-22 12:48
Kakegawa, Shizuoka At the recreation facility, the underfloor terminal-cross-bundle of the gas pipe of a restaurant was left open. The LP gas exploded and fire went up.
1984-01-18 13:50
Takada, Fukushima Fire broke out from the band conveyor in the Mitsui Sankyo Ariake Coal Mine.
1984-06-20 13:50
Taiwan, China In the Kaizan coal mine, the connection pin of the coal car fell off and the car ran uncontrolled, raising coal dust. The cable was cut and the coal dust exploded.
1984-07-10
Taiwan, China The oil of the ground burned from the cable sparks of the air-compressor electric motor in the Duandra Coal Mine, and fire broke out.
1984-11-16 11:46
Setagaya, Tokyo The underground laying slot exclusive for telephone-exchange cable had fire. 90,000 circuits and the on-line service of the bank was stopped.
1985-04-24 08:40
Takashima, Nagasaki The Mitsubishi Coal Mining's Takashima Mine had a coal-mine gas explosion.
1985-05-17 15:35
Yubari, Hokkaido Methane exploded in the Mitsubishi Nandai Yubari Mine.
1985-08-12 18:56
Ueno, Gunma JAPAN AIR LINES jumbo jet crashed and burned.
1986-03-15
Singapore A seven-story hotel collapsed.
1987-07-23
Tokyo The intense heat caused rapid increase of electricity, and electric power failure took place in wide area.
1988-03-13
Japan Stekkan Submarine Railroad Tunnel was opened to traffic.
1988-04-10
Japan The Setouchi Sea Communication Bridge (Kojima, Sakaido route) was opened to traffic.
1989-02-16
Kanagawa There was a fire during the repair of an Indian nationality cargo boat.
1989-03-14
Off Nojimazaki Chemical tanker "Marugao" loaded with methanol exploded and burned.
1989-11-03
Thailand The methane excavation ship was overthrown in the gulf of Siam.
1990-03-18
Hyogo The supermarket Nagasakiya was set fire and burned.
1990-05-26
Itabashi, Tokyo An explosion occurred while subdividing the benzyl-peroxide at a chemical plant.
1990-06-29
Off Nojimazaki Aichi Explosion occurred at a fireworks factory in Toyohashi. The workshop and the storage-shed was burned.
1990-09-24
Bangkok, Thailand A LPG tanker plunged into a house near the highway outlet, exploded, and burned.
1991-03-14
Hiroshima The girder of the elevated bridge fell down to the national highway during the construction of the new transportation system.
1991-04-21
Shanxi, China A gas explosion occurred at the Sanjiaobe Coal Mine.
1991-05-14
Shiga A interin train and a normal train had a head-on collision in the single rail track territory of the Shigarakki Kougen Railroad.
1991-09-10
Osaka The gas pipe arrangement and etc. of the chemical vapor deposition system exploded went up on fire at the Osaka University basic faculty-of-technology laboratory.
1991-10-03
Miyazaki The tire of the linear motor car had a puncture during the travel-motion test, and the car went up on fire and was destroyed.
1991-12-22
Osaka The organic solvent exploded and burned during a repairment of the edible-oil plant's oil-and-fats successive-extraction equipment.
1992-02-14
Kanazawa The concrete collapsed during the concrete placing at the gymnasium.
1992-03-03 05:00
Turkey Gas explosions occurred at two coal mines.
1992-04-22
Mexico Hexane flowed out into a canal from an edible-oil factory. It exploded and went up on fire.
1992-06-02
Itabashi, Tokyo A diesel train filled with passengers had a brake failure at Toride station and ran out of control.
1992-10-16
Chiba The tower at an oil-manufacture place exploded as the sulfurizing-operation resumption.
1993-01-05
Off Scotland, UK A tanker, the Blare, submerged and crude-oil flowed out.
1993-01-07
Chongli, Korea The building fire caught on to the LP chemical cylinder and exploded.
1993-05-10 16:30
Thailand A toy factory exploded and collapsed from gas leakage. The workers were buried underneath.
1993-08-27
Omi, China A dam broke and washed away a village.
1993-10-05
Osaka The unattended train of the new transportation system ran out of control and collided into the humping post.
1993-11-19
Kuangtung, China A plastic factory had a fire and many workers were suffocated.
1993-12-11
Malaysia A 12-story apartment building collapsed. The ground may have gave in from the rain fall.
1994-03-10
Soul, Korea The underground communication cable burned. Several 100,000 circuits were tied up.
Oxygen piping in the iron mill exploded occurring one after another. Benzene was founded.

Tetra-alkyl-lead poisoning prevention code was enforced. The construction costed 171 deaths.

Japan Electric appliance experiment laboratory was founded. The gasoline spilled out and caught fire.

Japan Oxygen piping in the iron mill exploded occurred one after another.
1966.03.05 11:15: Above Mt. Fuji, Shizuoka The English Overseas Airlines B707 fell upon a hill and crashed near the second marking of the Mt. Fuji.

1966-07-08: Kuroiso, Tochigi People were poisoned by the exhaust gas from the gas generator during a maulidade repair in an agricultural water tunnel.

1966: Japan A biological pollution of the polychlorinated biphenyl was discovered.

1967-10-16: The Setouchi sea Tetraethyl-lead liquid leaked during the cruise of the cargo boat Bostonmaru. People cleaning the interior of the ship were poisoned.

1967: Japan The construction of the Shin Nippon Steel's Saki iron mill completed. The construction took a toll of lives.

1968-04-01: Hokkaido There was an earthquake off Tokachi. Outbreak of fire occurred because oil heaters were turned over.

1968-08-09: Arabian-Straits, Japan The tanker 'Youkoumaru' was partially damaged during the cruise, and crude-oil spilled out.

1968-08-30: Shirakawa, Gifu Two charter busses fell into the Hida River because of the mudslide occurred from the typhoon No.7.

1969-01-05 11:30: Off Yajimazaki, Chiba The hull of the ore transport-ship 'Borobamaru' broke and sank.

1969-04-01: Sumida, Tokyo Steel sheet-pilling of the Shin-Yotsuki Bridge collapsed during the ring beam method construction. The conversion to the caisson method was promoted.

1969-04-25 08:24: Kurum, Fukusuka A rubber factory was burned.

1969-11-25: Osaka A pneumatic caisson-flood occurred from unusual depression during the sluice construction in the Shironishi River.

1969: Japan Pronasitis-retinopathy frequently occurred when oxygen utilized upliving box was used.

1970-02-09: Off Yajimazaki, Chiba The ore transport ship 'California Maru' was flooded and sank.


1970-12-09 11:00: Kumagaya, Saitama The oxygen and acetylene containers under welding exploded at a factory. Normal slate -> Safety slate (prevent the treading-through fall on the slate roof).

1970-04-14: The Setouchi sea Tetraethyl-lead liquid leaked during the cruise of the cargo boat Bostonmaru. People cleaning the interior of the ship were poisoned.

1970: Japan The conversion to the caisson method was promoted.

1971-07-30 14:00: Shirakaw, Ibaraki The ALL NIPPON AIRWAYS B727 and the Self-Defense Forces F8 6F fighter under training collided in the air.

1971-11-11 15:30: Kawasaki, Kanagawa People were crushed under of the great amount of mud and rocks which fell down during the cliff collapse experiment at the Iteda Ryokuchi.

1971-12-04 21:50: Toyonaka, Osaka The municipal purification plant had chlorine spouted during the interchange of the chlorine cylinder for disinfection. The nearby citizens took shelter.

1972-02-21 12:00: Kashima, Baragi The accessory heavy-fuel oil boiler of a cargo boat exploded and the boat sank.

1972-05-13 around Southern Osaka Fire broke out from the electric construction 22:27 site on the third floor of the seven-story Senjuji department store. The smoke went up to the seventh floor and many people died.

1972-06-05 14:00: Kawanmity, Kawasaki At the electric power plant of the Kansei Electric Power Company, the shaft oscillated and bursted during the trial run of the generator. The fire caught on to the hydrogen for cooling.

1972-09-27: Fukushima The indication of the computer hindered, and a train derailment accident occurred in the Kooriyama marshalling yard.

1972-11-06 01:13: Fukuoka Fire broke out from the dining car of the express in the Hokuriku Line's Hokuriku tunnel. The fire poured during the separation of the dining car and the passengers were poisoned by carbon monoxide.

1973-08-12 22:50: Gita The chemical-plant's pesticide bailment was burned, and poisonous gas was generated.

1973-08-12 04:40: Korea A petroleum-tanker overturned in the Kyongbo Line Yongdung station and burned.

1973-11-29 around Kumamoto, Kumamoto The Onlyu Department Store burned.

1973: Japan Apartments houses and explosions occurred from LP gas. Chemical plants in industrial-complex exploded frequently.

1973-05-02 12:00: Chiyoda, Tokyo The Mitsubishi Heavy Industry's building was blasted by terrorism. Many people got hurt from the pieces of glass.


1974-12-18 20:40: Akagi, Gunma While placing of concrete from the concrete mixer truck at the nose of the Aysdo Bridge over the Tone River, the concrete fell with an extraordinary noise and workers were killed.

1978-10-12: Singapore The oil tanker of Greece staying at the dock for repairment exploded.
There was a fire at the construction site of the Seto Inland Sea Communication Bridge (Kojima, Sakaide rout) opened to traffic.  

Japan

1989-02-16

Kanagawa

There was a fire during the repair of an Indian nationality cargo boat.

1989-03-14

Off Ndjimazik

Chemical tanker "Marigas" loaded with methanol exploded and burned.

1989-11-03

Thailand

The methane excavation ship was overthrown in the gulf of Siam.

1990-03-18

Hyogo

The supermarket Nagasaki was set fire and burned.

1990-05-26

Itabashi, Tokyo

An explosion occurred while subdividing the benzyl-peroxide at a chemical plant.

1990-06-29

Aichi

Explosion occurred at a fireworks factory in Toyohashi. The workshop and the storage-shed was burned.

1990-09-24

Bangkok, Thailand

A LPG tank plunged into a house near the highway outlet, exploded, and burned.

1991-03-14

Hiroshima

The girder of the elevated bridge fell down to the national highway during the construction of the new transportation system.

1991-04-21

Shanxi, China

A gas explosion occurred at the Sanjiaobei Coal Mine.

1991-05-14

Shiga

A intertrain and a normal train had a head-on collision in the single rail track territory of the Shigarakii Kousen Railroad.

1991-10-02

Osaka

The gas pipe arrangement and etc. of the chemical vapor deposition system exploded went up on fire at the Osaka University basic faculty-of-technology laboratory.

1991-10-03

Miyazaki

The tire of the linear motor car had a puncture during the travel-motion test, and the car went up on fire and was destroyed.

1991-12-22

Osaka

The organic solvent exploded and burned during a repairment of the edible-oil plant's oil-and-fats successive-extraction equipment.

1992-02-14

Kanagawa

The concrete collapsed during the concrete placing repairment of the edible-oil plant's oil-and-fats successive-extraction system.

1992-05-13

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1993-03-10

Sakaide rout) was opened to traffic.

1993-05-10

Osaka

The unattended train of the new transportation system ran out of control and collided into the bumping post.

1993-08-27

Omi, China

A dam broke and washed away a village.

1993-10-05

Osaka

The unattended train of the new transportation system ran out of control and collided into the bumping post.

1993-14-11

Kuangtung, China

A plastic factory had a fire and many workers were suffocated.

1993-12-11

Malaysia

A 12-story apartment building collapsed. The ground may have gave in from the rain fall.

1994-03-10

Soul, Korea

The underground communication cable burned. Several 100,000 circuits were tied up.

1994-03-13

Japan

The Seto Inland Sea Communication Bridge (Kojima, Sakaide rout) opened to traffic.
1994-04-25  Nanakuma, Hiroshima  The wire broke during the unloading of a lifeboat in a shipbuilding yard, and the boat was dropped.

1994-04-26  Aichi  The China Airlines airplane landed in the landing at the Nagoya Airport and crashed.

1994-06-23  Osaka, Osaka  A gondola crashed while painting the bridge.

1994-10-01  Toyama, Chiba  The fireworks laboratory of the Firework Conservation Association exploded.

1994-10-09  Ueda, Nagano  Gasoline leaked from the connection after the piping work of the oil tank. It led to an explosion with fire.

1994-10-21  Soul, Korea  The Songso Bridge collapsed.

1994-11-18  Takasago, Hyogo  Explosion occurred during the spraying activity for flaw detection in the resina drying tower of the chemical plant.

1994-12-24  Taiho, Tokyo  At the sole machining factory, the polish dust of the dust collector exploded and went up on flames.

1995-01-17  Hyogo, Toyohashi  The Hanshin and Awaji Earthquake occurred. The urban safety myth collapsed.

1995-02-11  Azumi, Nagano  A phreatic explosion occurred during the construction of the tunnel access-road.

1995-05-30  Kawasaki, Kanagawa  People were poisoned by the hydrogen-sulfide leaked from the sulfur-recovery apparatus of the petroleum-refinery.

1995-06-29  Soul, Korea  The Sangpun Department store collapsed.

1995-07-31  Saitama  The hyperbaric-pressure air-chamber for the metal works extension press exploded.

1995-08-16  Chiba  An oxygen deficit occurred in an underground agricultural silo.


1995-11-08  Saitama  The automatic product warehouse of a canning factory was burned down completely.

1996-01-11  Iwaki, Fukuushima  The oxygen leaked in the blast furnace of the ironworks was working were burned.

1996-02-10  Furubira, Hokkaido  The national highway tunnel collapsed.

1996-03-19  Philippines  A disco had a fire and there was no emergency exit.

1996-04-16  Elajma, Hiroshima  An explosion occurred during a powder filling activity at a processed goods works.

1996-06-18  Ichihara, Chiba  A gas explosion occurred inside the boiler flu at the thermo-electric-power-plant.

1996-08-23  Off northern Ireland  Chlorofluorocarbon leaked from a Japanese tuna fishing boat.

1996-11-20  Hong Kong  A mixed-use building had a fire.

1996-12-06  Otani, Nagano  A boulder-flow occurred during a debris-dam construction.

1997-01-29  Changsha, Hunan, China  Fire broke out from the second floor of a hotel and spread to the seventh floor. People jumped off from windows.

1997-02-04  Xichang, Szechuan, China  Fireworks powder stored in a residence exploded. 20 bookings were destroyed.

1997-03-04  Pingdingshan, Henan, China  A gas explosion occurred at a coal mine.

1997-03-11  Tohoku, Ibaragi  The drum used in the asphalt solidification establishment of the Power Reactor and Nuclear Fuel Development Corporation reprocessing plant burned and exploded. Workers were contaminated.

1997-04-27  Off Chollnam-do, Korea  A cargo boat was submerged and overturned.

1997-05-02  Caijiao, Shantung, China  A gas explosion occurred in the Nanxivi Coal Mine. The ventilation system below criteria was the cause.

1997-05-04  Chongqing, Szechuan, China  There was a explosion and fire in the effluent-treatment facility of a chemical plant.

1997-05-28  Putien, Liaoning, China  An explosion occurred in the Bellongshaing Coal Mine.

1997-07-12  Chekiang, China  The five-story company residence of a cotton-fabric works collapsed suddenly.

1997-08-06  Guam  The Korean Air B747-300 with 254 people aboard crashed and burned.


1997-09-13  Guangxiang, Taiwan  There was an explosion and fire during the withdrawal of the petroleum firm's underground LPG pipeline.

1997-09-21  Jinhua, Fuchien, China  Fire broke out from near the shoe-storing place on the first floor of a shoemaking works used also a lodge. The lodging employees could not escape and burned to death.

1997-12-12  Heilungchiang, China  The Harbin Hotel had a fire.