KARAKURI MECHANICAL PUPPETS

1. (DOLLS) The history of robots in Japan goes back a lot further than some people think. The forerunners of Japan's modern robots... can be traced all the way to the 15th century... They're called Karakuri puppets.

   In the 1500's... when clocks and clock-making were introduced to Japan from Europe... the same sort of mechanical technology was used to make sophisticated puppets... that could move with seemingly no outside help!

2. (ACROBAT DOLL) The secret is a complex network of strings inside the puppet...not OUTSIDE...

   This sets the Karakuri puppets apart from Western marionettes.

   Inside with the strings are gears and other mechanisms that enable it to do all kinds of complicated things. ...And the puppets move just like they did 2 or 300 years ago.

3. (AUDIENCE, STREET) Today, the only chance most people get to see these marvellous creations is at festival time...in the central area of Japan...around Nagoya.

   For some reason, Karakuri puppetry has only been carried on in the Nagoya area...maybe because the local lord gave his special patronage to the art.
The art of Karakuri puppets was traditionally reserved only for the rich and powerful... But today at festival time everybody in the district can have a good time watching the dolls perform on their parade floats.

Today...there is only one master Karakuri puppet-maker left... but his son is following in his father's footsteps, struggling to keep the Karakuri puppet art alive.

SUNSHINE BY CABLE

86 feet 2 min. 24 sec.

1. (LAB, DEVICE, FIBERS) The light of the sun is finding its way into places it never went before... into the confines of buildings and even under the sea...

A new device for conducting the precious rays of the sun into hard-to-reach places has just come out...

2. (DEVICE, BUILDING) It's called the Himawari, or Sunflower. Like a real sunflower... the Himawari device follows the movements of the sun... It catches its rays and transmits them wherever they're needed.

The Himawari system consists of a solar ray collector, a sensor to determine the sun's position... a microcomputer, a drive mechanism, and the all-important fiber cables that carry the light.

Solar rays are gathered by a series of lenses under the Himawari's dome... then the rays are sent from the focal point of each lens through fiber cable to the desired spot.

3. (SCIENTISTS, DEVICE) There are all kinds of practical uses for the Himawari...

Growing plants indoors... or for underwater farming...
As a source of light for tunnels and mines... for photo studios...
To light up department stores with natural daylight...
For growing natural chlorophyll vitamins...
The possibilities are endless...

4. (DEVICE) The Himawari really does bring the sunshine in.
TOKYO TOY SHOW

1. (EXHIBITS) One of the greatest delights for any child is to receive a toy --- and at the annual Tokyo Toy Show...there were 20,000 such delights on display.

All kinds of playthings... traditional toys such as dolls, stuffed animals... racing cars .... and games....

Participating in the show were 123 Japanese toy manufacturers and 28 companies from abroad.

2. (ROBOT TOY) The toys on display reflect current trends... like this assembly-line robot toy... Electronic and pocket-sized computer games are front-runners in popularity.. and toys are getting more sophisticated all the time.

Demand for toys... of course... will increase as long as there are children... Parents in Japan spent around ¥37,000 (around $150) per child for toys last year.

3. (BUYERS, CHILDREN) Of the 4 exhibition days two were for trade people only... and the other two open to the general public.

RE-GREENING THE MOUNTAIN BY HELICOPTER

1. (BARREN HILLSIDE) The Ashio region north of Tokyo... famous in the past for its copper mines...

But strip-mining and copper-smelting changed the face of the Ashio mountains. In some places... the soil was completely eroded.. leaving only bare, exposed rocks.
2. (MEN PLANTING) But in 1956... there was a call to bring the green back into the hills... 2100 hectares of them. An enormous task... how to replant such a vast expanse of land. Planting by hand would take too long.

3. (HELICOPTER) So...in 1966, they got the idea of greening the hills... by helicopter. Helicopters could get to steep hillsides and ravines almost impossible to reach on foot.

4. (HELICOPTER, SEED, ASPHALT) Just before the summer rainy season comes, the helicopters spread grass seed from the air... Kentucky blue-grass and 13 other varieties of hardy grasses.

   Fertilizer is dropped... and then, asphalt emulsion enriched with nutrient B is poured over the soil so the grass doesn't blow away.

   Each helicopter makes 50-60 trips a day during the sowing season.

   In the 16 years since they started the helicopter project, 176 hectares have been restored to lush green.