SECTION 6

Conceptual Gravitics Applications

GRAVITO – ELECTRIC POWER GENERATION

Gravito-electric power generation is similar to hydro-electric power generation in which the energy of water falling in Earth's gravitational field powers water-turbines that drive electric generators.

In gravito-electric power, depicted schematically in the figure below, a gravitation deflector makes the water in the central region of the mechanism lighter than that in the outer region, which is acted on by natural gravitation. The lighter reduced gravitation water floats up on the in-flow under it of the heavier natural gravitation water. The result is continuous circulation of the water, like a continuous waterfall.

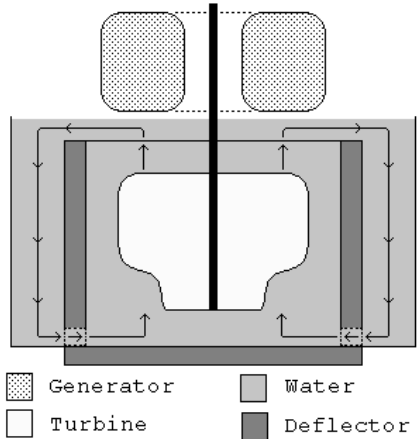

Figure 6-1 – A Gravito-Electric Generator

Water turbines like those used in hydro-electric plants can be placed in the gravito-electric continuous water flow to drive electric generators as in hydro-electric plants.

REDUCED GRAVITY ENVIRONMENTS

Reduced gravity environments on the Earth's surface, created with gravitation deflectors, would be useful for:

- astronaut training,
- laboratory experiments and manufacturing processes that require or at least benefit from being performed at low gravity,
- recreational environments for advanced acrobatics and, possibly for human-powered bird-like flight.

Such environments could be constructed using the same cup-shaped deflector form of appropriately assembled Silicon cubic crystal deflectors as already presented.

Astronaut training and laboratory or manufacturing processes would call for a large Earth surface area such as, for example, an area 20 meters by 20 meters; but the height need only accommodate a one-storey space. On the other hand, advanced acrobatics or human-powered bird-like flight would require still larger area and a number of storeys of height.

A GRAVITATION DEFLECTOR SPACECRAFT DEEP SPACE DRIVE

A spacecraft gravitation deflector drive would be a deflector in cup form, mounted on the rear of the spacecraft and extending the spacecraft's full length to the nose, as in Figure 6-2 below, with engineered arrangements for varying the amount of deflection.

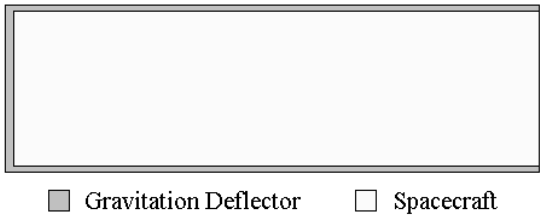

Figure 6-2 – A Gravitation Deflector Driven Spacecraft

This configuration would satisfy a number of functions. The deflector would provide [all without use of fuel]:

- Launching of the spacecraft vertically upward at an upward acceleration of approximately one-half of local natural gravitation, for Earth an upward acceleration of about $16.1\ ft/s2$;
- Landing and re-launching of the spacecraft at any gravitating body such as the Moon or Mars;
- Deep space transit propulsion between gravitating bodies;
- Protection from deep space radiation and cosmic ray particles by virtue of the ½ to almost 1 meter thickness of the Silicon deflector;
- A gravity environment within the spacecraft of zero natural gravitation plus an artificial gravitation due to the acceleration of the ship in whatever amount that it is at any particular time [taking "down" as toward the deflector end of the ship].

The engineered arrangements for varying the amount of deflection so as to vary the acceleration would be means of controlled changing of the orientation of selected portions of the Silicon cubic crystals so that they fail to provide the comprehensive deflection of all incoming vertical rays of *Flow*. The engineered arrangements for varying the direction or orientation of the spacecraft would be a 3-axis system of angular momentum wheels

For a spaceship in free space the gravitational *Flow* environment is different from on Earth. In the case of only one gravitation source near enough to be of any important effect and that sole source at a considerable distance from the spaceship, the gravitational *Flow* from that source to the spaceship is essentially all parallel rays. Departing such a source after launch from it requires simply aiming the stern of the ship toward that source. Controlled

landing on it requires simply aiming the stern of the ship toward that source and controlling the acceleration by varying the deflection.

In general, however, in deep inter-planetary space gravitation is present albeit fairly weekly because of inverse square reduction of intensity, and it is present in various amounts with attraction toward various differently located sources. As with the sailing navigation using the wind as in earlier centuries, spaceship travel within the Solar System may require techniques analogous to: sail craft's tacking on various headings, "crabbing" into partial "cross wind" as aircraft do, and in general going "where the winds permit". In the spacecraft case the "winds" are the various direction gravitational *Flows* available from which to generate acceleration and to which the spacecraft is subject to attraction.

Solar System navigation is further complicated by the destination's continuous motion. The navigation must be toward where the destination will be upon spacecraft arrival at it as compared to where the destination currently is.

For inter-stellar navigation there is the possibility of near light speed travel. The deflector could provide continuous, fuel-less acceleration to the spacecraft throughout its trip. The continuous acceleration would accelerate the craft during the first part and, with the craft re-oriented using the 3-axis system of angular momentum wheels, decelerate the craft for approach to the destination.

Because the acceleration is independent of the mass of the spacecraft it could be quite large and able to carry everything needed for an extended trip and for survival at the destination. The relatively narrow form of the spacecraft is chosen in Figure 6-2 because it provides better shielding against deep space radiation and cosmic rays.

A different shape might be chosen for a quite large spacecraft: a single storey flat disk or a multi-storey and wide cylinder.

A GRAVITATION DEFLECTOR PLANET SURFACE FLYING VEHICLE

A gravitation deflector flying vehicle would be a deflector in cup form, underneath the payload compartment of the vehicle as in Figure 6-3 below.

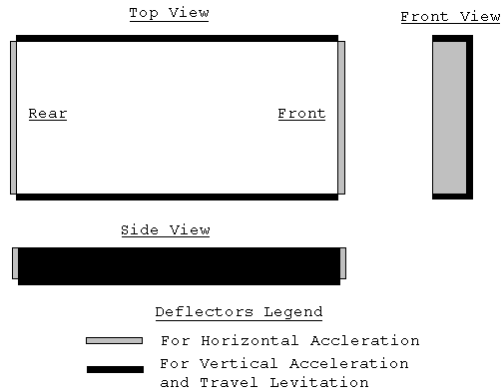

Figure 6-3 –A Gravitation Deflector Flying Vehicle

The flying vehicle differs from the form for a spacecraft in:

- not needing to provide protection from dangerous radiation,
- needing only modest acceleration capability vertically upward beyond sufficient to maintain its constant altitude levitation,
- needing means to generate horizontal acceleration while maintaining vertical levitation.

This deflector configuration [all without use of fuel]:

- Provides controlled vehicle levitation for take-off, landing, and travel,
- Provides controlled horizontal propulsive acceleration and "braking",

- But there is the problem of sufficient gravity for the passengers.

The vertical acting deflectors cannot provide artificial gravity by virtue of vertical acceleration because the vertical acceleration is controlled to only maintain levitation at a given altitude except for take-off and landing. However, maintaining levitation requires significantly less than 100% vertical deflection. If, for example, levitation required only 50% vertical deflection then the gravitation within the vehicle would be the remaining undeflected 50% of natural gravitation.