

THE ROTATION

It is believed that the earth rotate about it's axis and according to our findings we discover that for any body to rotate there is a major factor behind it which is state in our law below

Alare's first law of rotation state that for any body or particle to rotate there must be two forces at a couple i. e. there must be two equal forces acting on the body in opposite direction.

The law explain that for any object to rotate there must be a pulling and pushing forces i.e a force pulling it and force pushing it, which must be equal. The equality between the pulling and pushing forces create an equilibrium between them which eventually leads to rotation.

If the pushing force is greater than the pulling force the object will tend to direction of the greater forces and put also if the pulling force is greater than the pushing force the object will tend to the direction of the greater force and pull. This pulling and pushing force of equal magnitude is the couple which is the major factor behind rotation.

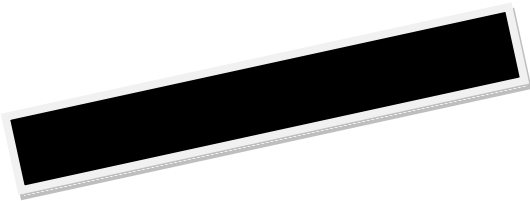


Fig1.1a

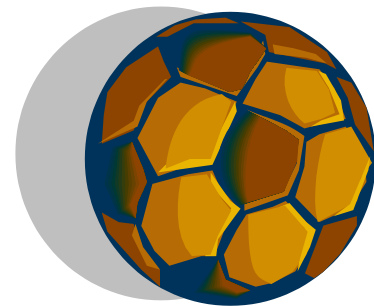


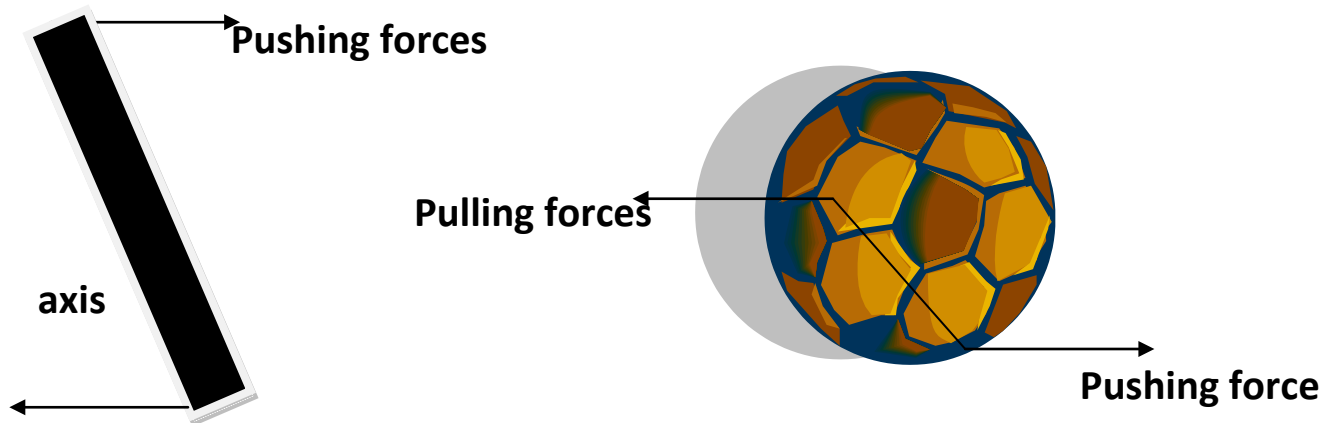
fig 1.1b

Fig 1.1a & fig 1.1b show a stationary plank and ball respectively

(1)

For the plank and the ball in the figure above to rotate about it axis there must be two forces at a couple

Pushing forces



Pulling force

THE CAUSE OF ROTATION

The couple cannot generate itself so there must be something generating and we continue our research and we find it out it is state in our second law below

Alare's second law of rotation state that for a rotating body to rotate there must be a force that produce the couple i.e a force that generate the pulling and pushing force

According to the law for any object to there must be a force producing the couple. In the electric motor it is the electro magnetic force, also there is a force in your hand that produce the couple that make the top head to rotate also the force produce in the leg of a player generating the couple that cause the ball to rotate so the earth is not left out there is a force produce the couple that make the top head to rotate also the force produce in the leg of a player generating the couple that cause the ball to rotate so the earth is not left out there is a force producing the couple which cause the earth to rotate in the course of our research we later find out the force was the centripetal force earlier propose by sir Isaac Newton of

unknown magnitude which keep the earth in its orbit but the magnitude is later discovered in this book.

In the diagrams above f_1 is the force that generates the couple f_2 and f_3 . Also the triangle drawn in the diagram is the Alare's spot is the region where the turning affects [torque] and the relationship between force generating the couple and the couple can be fully felt.

There must be a relationship between the force generating the couple and the couple itself so we try to find out and there is our third law which is stated below

Alare's third law of rotation states that in any rotating body the force producing the couple is directly proportional to the sum of the couple

Mathematically;

$$F \propto F_1 + F_2$$

$$F = \pi (F_1 + F_2)$$

Where

F = Is the force generating the couple

F_1 and F_2 = Are the coupling force

π = Is P_1 which is the Alare constant.

From the law, force producing the pulling and pushing force is directly proportional to the sum of the pulling and pushing force where π is the constant of proportionality.

CONTINUITY OF ROTATION

Continuity of rotation of a body is the act by a body keep rotating about it axis. There must something to ensure this continuity of rotation it is stated below

Alares fourth law of radiation or law of continuity or rotation state that for rotating body to continue. Its rotation there must be a continuous production of the force generating the couple.

This law holds perfectly for a fixed or non-moveable axis rotating body such as tap head, electric fan but not that perfect for loose or moveable axis rotating body such ball car type e. t. c.

Whether fixed or loose the continuity of rotation after the removal of the force producing the couple depend on the magnitude of the force.

There is a tendency for a loose axis rotating to continuity rotating after the removed of this force, but the laws still hold because sooner or later it will stop.

There earth is a loose axis rotating body so the centripetal force causing the coupling force is removed the earth rotate for a while and than stop and also go tangential to it or bit as proposed by Sir Isaac Now because it axis is moveable.

Fig 1.3.1 below show some fixed axis rotating body

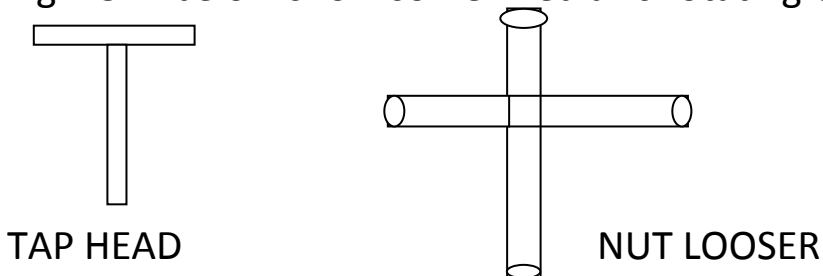


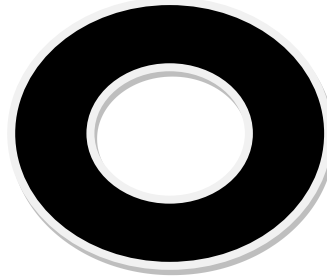
Fig 1.3.2 below show some loose axis rotating body



BALL



EARTH



CAR TYRE

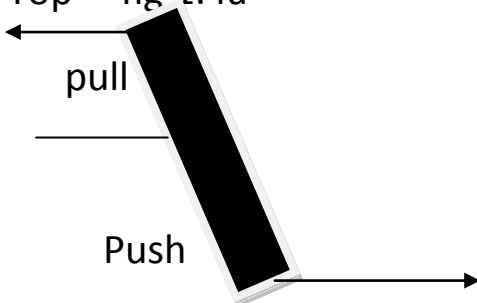
TYPE OF ROTATION

There are two type of rotation which are clockwise and anti clockwise rotation the cause for this is stated in the law below

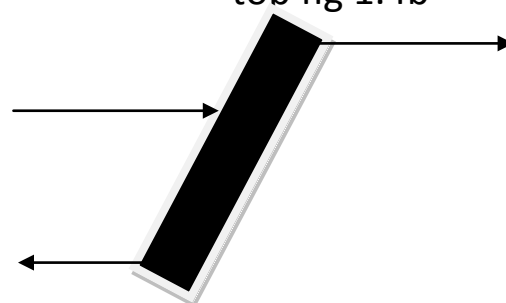
Alare's fifth law of rotation state the direction at which a body rotate is determine by the position of the pushing and pulling force that form the couple.

It can be observe from the for anybody to rotate clockwise the pushing force away from the force generating couple must be at the top while the force generating the couple must be at the buttom and for anticlockwise rotation vice versa.

Top fig 1.4a



top fig 1.4b



ROTATION OF THE EARTH AND THE BERMUDA TRIANGLE

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THE SPEED OF ROTATION OF EARTH

Speed of rotation of the earth is the speed at which the earths rotate to get the value of this we need to get back to alare's third law of rotation.

From alare's third law of rotation.

$$F \propto F_1 + F_2$$

$$F = \pi(F_1 + F_2)$$

Where f is centripetal force earlier proposed by sir Isaac Newton.

$$\therefore F = \frac{mv^2}{r}$$

$$F = ma$$

$$r = \frac{v}{t}$$

$$f = \frac{mv}{T}$$

$$\frac{mv^2}{r} = \pi \left(\frac{mv}{t} + \frac{mv}{t} \right)$$

$$\frac{mv^2}{r} = \pi(2mv)$$

$$\frac{mv^2}{t} = 2mv\pi$$

$$mv^2 t = 2mv\pi r$$

$$v = \frac{2\pi r}{t}$$

Since r is the radius of the earth which is appose 6400/00m.

T is the time taken for earth to rotate which is 24hrs and 86400s.

$$V = \frac{2 \times \pi \times 6400000}{86400}$$

$$V = 465.42 \text{ms}^{-1}$$

Proof

Since it took 86400 seconds for the earth to complete one cycle of rotation.

So

$$T = \frac{t}{\theta}$$

$$T = \frac{86400}{1}$$

$$T = 86400 \text{S}$$

$$W = \frac{2\pi}{t}$$

$$W = \frac{2\pi}{86400}$$

$$W = 7.27 \times 10^{-5}$$

$$V = wr$$

$$V = 7.27 \times 6400000$$

$$V = 465.42 \text{ms}^{-1}$$

Where v is the speed of rotation of the earth, r is the radius of the earth.

W=angular velocity of earth.

π is p1

T is time taken.

θ is number of cycle.

T is period rotation of the earth.

So, 465.42ms⁻¹ is the speed or rotation of the earth, while 7.27×10^{-1} is the angular velocity or the earth.

So, 465.42ms^{-1} is the speed or rotation of earth

While $7.27 \times 10^{-5} \text{ rads}$ is the angular velocity or the earth

THE CENTRIPETAL FORCE THE COUPLING OF THE EARTH

The centripetal force propose by Newton has a magnitude which we are going to get by using alare’s third law of rotation

$$F \propto F_1 + F_2$$

$$F = \pi (F_1 + F_2)$$

Since f_1 and f_2 are of the same magnitude were an add them together to give $2f$

$$F = \pi (2f)$$

Recall $f = ma$

$$a = \frac{u}{t}$$

$$f = \frac{mu}{t}$$

$$f = \pi \left(\frac{2mu}{t} \right)$$

$$f = \frac{2\pi mu}{t}$$

Where

m = mass of the earth

v = speed/ velocity of rotation of the earth

t = time taken for complete rotation of earth

so,

$$m = 5.99 \times 10^{24} \text{ kg}$$

$$v = 465.42 \text{ ms}^{-1}$$

$$t = 86400 \text{ s}$$

$$f = \frac{2 \times \pi \times 5.98 \times 10^{24} \times (465.42)}{86400}$$

$$F = 2.02 \times 10^{23} \text{ N}$$

OR

Since F is centripetal force

$$F = \frac{mu^2}{R}$$

Where

m = mass of the earth

v = velocity of the earth

r = radius of the earth

$$m = 5.98 \times 10^{24} \text{ kg}$$

$$v = 465.42 \text{ ms}^{-1}$$

$$r = 6400.000 \text{ m}$$

$$F = \frac{5.98 \times 10^{24} \times (465.42)^2}{6400,000}$$
$$F = 2.02 \times 10^{23} \text{ N}$$

Hence, the magnitude of the centripetal earlier propose by sir Isaac Newton is

$$2.02 \times 10^{23} \text{ N}$$

THE MAGNITUDE OF THE COUPLING FORCE EXPERIENCE ON EARTH

The coupling forces causing the earth to rotate have a define magnitude and it can be gotten by the following process

From alare's third law

$$F \propto f_1 + f_2$$

$$F = \pi (F_1 + F_2)$$

$$F = \pi(2f)$$

$$F = 2.02 \times 10^{23} = 2\pi f$$

$$F = \frac{2.02 \times 10^{23}}{2\pi}$$

$$F = 3.21 \times 10^{22} \text{ N}$$

Therefore, the magnitude of the coupling force is $3.21 \times 10^{22} \text{ N}$

EFFECT OF ROTATION ON EARTH

There are many effect of rotation on the earth which are:

(1) Electricity: As said earlier rotation causes electricity but generator or by heating or friction

The magnitude or electricity generate by rotation of the earth shall be calculated as follow

From kinetic energy of rotation earth

Electric current

$$K.E = \frac{1}{2} MU^2$$

recall $E = \frac{kg^2}{r}$

$$\frac{kg^2}{r} = \frac{1}{2} MU^2$$

recall

$$9 = rt$$

$$\frac{K1^2t^2}{r} \times \frac{1}{2} mu^2$$

cross multiply

$$2 k1^2 t^2 = mu^2 r$$

$$1^2 = \frac{mu^2}{2kt^2}$$

$$1 = \sqrt{\frac{mu^{2r}}{2kt^2}}$$

Where

1 = current

m = mass of the earth

r = radius of earth

k = 9×10^9

t = time taken for the earth to rotate

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$$1 = \frac{5 \times 98 \times 10^{24} \times (465.42)^2 \times 6400.000}{2 \times 9 \times 10^9 \times (86400)^2}$$

$$1 = \underline{248.39 \times 10^6 \text{A}} \text{ or } \underline{2.48 \times 10^8 \text{A}}$$

ELECTRIC VOLTAGE

From

$$E = iut$$

$$\frac{1}{2} mu^2 = lut$$

$$V = \frac{\frac{1}{2} mu^2}{It}$$

$$V = \frac{\frac{1}{2} \times 5.98 \times 10^{24} \times (465.42)^2}{248.39 \times 10^6 \times 86400}$$

$$V = \underline{3.02 \times 10^{16} \text{V}}$$

Electricity Resistance

$$V = IR$$

$$R = \frac{V}{I}$$

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$$= \frac{3.02 \times 10^{16}}{248.39 \times 10^6 \times 1.22 \times 10^9 \pi}$$

$$E = Iut$$

$$= 2.48 \times 10^8 \times 3.02 \times 10^{16} \times 864000$$

$$= \underline{6.47 \times 10^{29} \text{g}}$$

Therefore the electrical energy produce by rotation of earth is $6.47 \times 10^{29} \text{g}$, electrical current is $2.48 \times 10^8 \text{A}$ electrical voltage is $3.02 \times 10^{16} \text{V}$ electrical resistance is $1.22 \times 10^9 \pi$

WIND AND STORM

THE EFFECT OF ROTATION ON THE EARTH

The centripetal force produce is in excess during energy conversation. The excess mechanical energy produce by the centripetal force lie on the surface of earth in the atmosphere during energy conversion some of mechanical energy is being converted to electrical energy in the atmosphere and other is used to accelerate air which anus the pheneomen called as wind and storm wind is effect produce in which the mechanical force produce accelerate the air if the accelerate is more than the of air is about 15minutes more than the normal neglecting acceleration is called a weed.

Mathematically:

The mechanical energy $k.e = \frac{1}{2} mu^2$

$2k.e = mu^2$

$k.e = \frac{1}{2} mu^2$

Taking mass as constant

$k.e \propto \frac{1}{2} u^2$

The mechanical energy produce is proportional to half of the square of the velocity of the wind or storm

So, wind and storm is caused by coccids mechanical energy effects produce by centripetal force rotating the earth. These energy can be used to rotate turbine or use to dull hole.

BERMUDA TRIANGLE

We all know that the earth must rotate and for the earth to rotate according to alare's first law of rotation there must be a couple and according to alare's second law of rotation there must be a force producing the couple and alare's spot is a region where the effect (torque) and relationship between the for producing the couple and the couple is fully felt always inform of a triangle because three forces are involve and according to triangular law of forces and also the forces generating the couple must be produce continuously to ensure continuity of rotation according to alare's fouth law of rotation or law of continuity of rotation .

The Bermuda triangle is the alare's spot of the earth so coupling forces of the earth is one experience there one in the atmosphere and one in the sea i.e oppose direction which of magnitude 3.21×10^{27} N each and it caused by centripetal force earlier propose by sir Isaac Newton of magnitude 2.02×10^{23} N all solve according alare's third law of rotation.

Since the earth is rotating anticlockwise then according to alare's fifth law of rotation the force experience in the atmosphere which is at the top is pulling toward the centripetal force by doing pushing away from the earth surface while the force experience on the sea which is at the bottom is pushing away form the centripetal force which is pilling toward the earth that is why the force experience in 1945 pulled toward the centripetal force in the form of tunel there by pushing them away from the earth surface while the force experience on the sea in 1809 pushed them away from the centripetal force there by pulling them inside the earth.

Bermuda triangle not longer a misery but scientifically proving to be for the earth to rotate.

Bermuda triangle is the alare's spot of the earth !!!

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