



# ॥ रदवे ररुणर ॥ ॥ ररररररर ॥

A Magazine on  
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CONTENTS

SR.NO.	TOPIC	PAGE
1	Praakaar Shastra	3
2	Science and forts of ancient India	6
3	Ethics of ancient Indian wars	18
4	Nuclear weapons mentioned in Mahabharata	22

*Editor's Desk*

*Ved Vigyan Vaibhav*, the name itself indicates the scope of scientific knowledge our Ancient Indian literature has. Our Rishis, Munis were the true scientists who had an immense knowledge in the field of technology, science, medical science and what not. This issue is based on certain theme called "Praakaar Shastra".

The present world is full of competitions and activities. Everyone tries to protect himself from others. Building a house is one way of protection. For a king, building of forts or castles is essential. As armors are meant for protection of body, forts and weapons are necessary for protection of kingdom and people.

The ancient Indian literature on the science -Forts and Castles is reviewed briefly in this issue.

## **Praakaar Shastra**

### **Ancient Indian Texts**

Ancient art of warfare is Indian military history goes back to the Indus or Harappa people who had prospered 5000 years ago.

The Rig Veda (4000B.C.) contains huge amount of information about warfare and combats fought by the Aryans. The first recorded battle was the Dasrajan War, fought approximately in 1900 B.C.

The epics Mahabharata and Ramayana contain lot of information on warfare, weapons and war ethics. Mahabharata describes the destructive power of this ultimate missile. It had the power to burn the whole earth; it was equivalent to downfall of millions of meteors at same time.

The western scholar Erich von Däniken, in his books "Chariots of the Gods, mentions that "Certain numerical data in the Mahabharata are so precise that one gets the impression that the author (Ved Vyasa) was writing from the first-hand knowledge."

Danurveda(s) are Upavedas composed by various sages and mainly deal with archery (wars with bow and arrows).

Shukraniti composed by Sage Shukracharya is the most authentic text of Indian warfare. Yuddhajayarnava is also very important text on warfare.

In addition to the above ancient texts many modern commentaries on this science are available. Modern references like Arthashastra of Kautilya, SamarangaN Sutradhar and Yuktikalpataru of Raja Bhoj and YuddhajayarNava etc are valuable sources of information.

Stone sculptures related to this subject are available in various parts of India and museums s of foreign countries. Though ancient texts mainly deal with wars fought on ground, some Shilpasamhitas deal with naval warfare and Air warfare.



Janjira Sea Fort (MS)

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## Sanskrit Terms related to Forts & Castles

Sn	Sanskrit term	English meaning
1	धन्व दुर्ग/धनुर दुर्ग इरिन दुर्ग	Desert fort
2	जल दुर्ग / अदेय दुर्ग /अब्द दुर्ग	Water fort
3	वन दुर्ग	Forest fort
4	गिरी दुर्ग	Mountain fort
5	मही दुर्ग	Earth fort
6	बल दुर्ग	Man fort
7	अश्म दुर्ग	Stone fort
8	इष्टिका दुर्ग	Brick fort
9	देव दुर्ग	God's fort
10	एकमुख दुर्ग	Fort with one gate
11	द्विमुख दुर्ग	Fort with two gates
12	चतुर्मुख दुर्ग	Fort with four gates
13	कुर्म दुर्ग	Tortoise fort
14	युद्ध दुर्ग	Battle fort
15	पंक दुर्ग	Mire fort
16	कृत्रिम दुर्ग/ पौरुष दुर्ग	Artificial fort
17	सहाय दुर्ग/ वाहिनी दुर्ग	Army fort
18	अकृत्रिम दुर्ग	Natural fort
19	मिश्र दुर्ग	Mixed fort
20	ग्राम दुर्ग	Town fort
21	परिघ दुर्ग	Rampart fort
22	स्थल दुर्ग/ भूदुर्ग	Land fort
23	रथ दुर्ग	Chariot fort
24	परिख दुर्ग	Ditch fort

## Science of Forts & Castles of ancient India

English Translation of Marathi Article by K.V.Vaze#

# Vaze,K.V. (1916), "Pracheen Hindi Shilpashastra",Chapter 12, Praakaar Shastra, pages 164-176.

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The present world is full of competitions and activities. Everyone tries to protect himself from others. Building a house is one way of protection. For a king, building of forts or castles is essential. As armors are meant for protection of body ,forts and weapons are necessary for protection of kingdom and people . *Taitirya Bramhan* describes the an armor. Same is applicable to a fort. Ref.SV01

यत्तेशिल्पंश्यपरोचनावत्। इंद्रियावपुष्कलंचित्रभानु ॥  
यस्मिंसूर्याअर्पिताः सप्तसाकं। तस्मिराजानमधिविश्रयेमं॥  
तैतरिय ब्राम्हण २।७।१५।३।७

SV01- Description of an armor

Ancient text "*YuddhajayarNava*",Ref. SV02, describe the properties of an ideal armor.

शरीरावरकंशिल्प वर्मइत्यभिधार्यते ॥  
शरीरावरकत्वंच लघुतादृढता तथा ॥  
दुर्भेद्यतेतिकथिता वर्मणां गुणसंग्रहः॥  
स्वल्पता गुरुता चैव मृदुता सुखमिद्यता॥  
विरुद्धवर्णताचेति वर्मणा दोष संग्रहः॥  
तत्पुनद्विविध धातु चर्मसम्भव भेदतः ॥ युद्धजयार्णव

SV02- Properties of an ideal armor

The armour should be; light, unbreakable, strong, properly fitting with the body. It should not be noticeable

Amors were made with metal or thick skin. Skin of Rhino or back of a turtle was used . Gold or silver armors were just for decoration but steel armors were used for daily use.

Protection of body is not enough, enemy has to to be attacked from distance with a weapon, such weapon is "Shastra". Sword, axe or mace are Shastras. But arrow spear were termed as Astra(missile-weapon which can be thrown on enemy). According to "Yuktikalpataru" astras are of two types. By use of Nirmayik type (such as arrow, bullet, gun etc) expected damage is known before its use. But in the second type "Mayik" (bomb, poisonous gas or oil etc) the destruction is unimaginable. Ref.SV03.

अस्त्रं तु द्विविधं प्रोक्तं निर्माय मायिकं तथा ॥  
बाणादिकं तु निर्मायं मायिकं दहनादिकं ॥  
दहनोऽथ जलं काष्ठं लोष्ट्रं शब्दादयस्तथा ॥  
तप्ततैलादिकंचैव मायिकंचास्त्रमुच्चते ॥ युक्तीकल्पतरू

#### SV03- Two types of weapons

Stick or stone are primitive exaamples of these two types. "Yuktikalpataru" enlists the different weapons. Ref.SV04. These are;

Khadga-Charma(Sword and),Dhanurbaan(Bow and arrow), Shallya(Thorn), Bhalla(Spear), Ardhachandra (Curved axe), Narach (), Shakti, Yashta, Parshu,Chakra, Parigh etc. All are made of steel.

खाड्गचर्मधनुर्बाणौ शल्वभल्लौ तथापरौ ॥  
अर्धचंद्रश्चवाराचः शक्तियष्टौ तथापरे ॥  
परशुश्चक्रशूलेच परिघश्चैव मादय ॥  
अस्त्रभेदाः समुद्दिष्टाः श्रीमद्भोजमही भुजा ॥ युक्तीकल्पतरू

#### SV04- Names of different weapons

One can find refences about Vajra (Thunderbolt- Spear or sword). Propertis of a good sword are mentioned Vedic literature. The sword should have good Anga, VarN,Swar and Netra. As per ancient Indian metallurgy quality of steel is tested by its Ang, Roop, Jaatee, Netra, Arishta,, Bhumee, Dwanee

and Maan. Except last two other qualities can be achieve by a black smith , but last are natural properties.Ref.SV05.

पंचाध्यानिपुणै गदे सम्भाव्यतेऽपि कृत्रिमा ॥  
अंत्यावकृत्रिमौजेयोतावेवा सहजाविति॥

SV05 –Qualities of a good sword

According to "Yuktikalpataru" the sword should be long and light, sound loud , unbreakable(repairable). The width and length should be proportional to the length of the blade. The blade thickness should be ¼ of the width. Ref. SV06.

दीर्घता लघुता चैव स्वर विस्तीर्णता तथा॥  
दुर्भेद्यता सुघटता खड्गानां गुण संग्रहः ॥  
खर्वता गुरुता चैव मंदता तनुता तथा॥  
सुभेद्यता दुर्घटता खड्गानां दोष संग्रहः॥  
यावत्योगुणयोदैर्घ्ये तदर्धागुलयो यदा॥  
प्रसरेत्त्वतुर्थांशं इति वैमान मुक्तम ॥ युक्तिकल्पतरु

SV06- Properties of Sword

As per *YuddhajayarNav*, quality of Sword was judged by its sound (when struck with stone stick or nail). Sword sounding like String instrument (Sitar) was considered as the best. Ref. SV07.

तंत्रीस्वरसमो यास्मिन् भवेत् खड्गे हतेध्वनिः ॥  
तंत्रीध्वनिरय खड्गः कुलश्री धन नाशनः॥॥  
गंभिर तार ध्वनिता खड्गस्य शुभलक्षण ॥  
नखेनवाथदंडेन तथा लोह शलाकया ॥  
लोष्ट्रेण शर्कराभिर्वा ध्वनिविज्ञान मुच्यते॥ युद्धजयार्णव

SV07-Sound of sword



Eight types of sounds of sword are described in the same text. Sounds of a good sword can be Hans, Megh, Kasya and Dhakka and those of bad sword are Kaak, Tantree, Gardha and Prastar. Ref. SV08. The weapon (Sword) should be prepared properly for its effective use.

हंस कांस्ये तथा मेघो ढक्का काकाश्च तंत्रिका ॥  
गर्दभः प्रस्तरश्चैव ध्वनिरष्टविधः स्मृत ॥  
पूर्वेचत्वारः शुभदाः परे निंदास्पदास्तथा ॥ युद्धार्णव

SV08-Eight types of sounds of sword

Two types of Bows are mentioned in "Yuktikalpataru" , one is made of horn and other is made of bamboo. Bows should be strong and flexible, with handle at centre which is weak spot. Bows are to prepared carefully. Ref. SV09.

धनुस्तुब्दिविधंप्रोक्तं शाङ्गवाशतथैकच ।  
कोमल वर्णदृढता गुणौ तस्य उदाहतौ॥ युक्तीकल्पतरु

SV09- Two types of bows

Same text describe qualities of good arrows. Arrows should be sharp, strong and light in weight. Names of different types of arrows are as mentioned below.

- Shar – small and light,
- Bhall-Sharp and strong,
- Ardchandra –Sharp but small
- Naraach – With many edges and sharp end,
- Shaktee or Yashtee – Thick and with sharp ends

Arrows of any name or type, must be light and strong so these can travel long and penetrate deeply.

लघुता दृढताचैव तथा खरतरास्यता ॥  
बाणानामहि निर्दिष्टो भूभुजांगुणसंग्रहः ॥  
शरभल्लो खरतरौ लघु दृढतरोमतौ॥  
अर्धचंद्रस्तुकथिता लघु तीव्रतरननः॥  
नाराचस्तुशिरालः स्य्यतीक्ष्णाग्रः कर्कशात्रकः॥  
शक्तिमष्टयादयोयेन्य ते तीक्ष्णाग्राः प्रकीर्तिताः ॥युक्तिकल्पतरू

तीक्ष्णतालघुता चैव तथैव दृढतापिच ।  
सर्वेषामास्त्र जातनिना लक्षणं समुदाहृत॥

### SV10- Qualities of good arrows

Mayic astras are Chemical weapons containing chemicals or combustible liquids or gases. When such weapon explodes oil or gases create injuries to humans. Their effect is so fast that there is no time for protection. In some weapons has arrangement to fire succesive fire arms. Some weapons create loud frightening sounds and some spread gases injurious to eyes. Ancient Dhanurved (Archary) texts such as those authoed by Vishwamitra, Bharadwaja or Jamadagnya gives detailed information on chemical weapons.

**Storage of arms and ammuation:** *Kautilya* recommends that;

1. The in-charge should procure or get fabricated the war weapons, fort weapons , macines armors etc. He should fix the charges according to material,size, perfection etc. He should store all such material in respective stores. Ref. SV11

१ आयुधागाराध्यक्षः सांग्रामिक दौर्गकर्मिक, परपुराभिघातिक , चक्रयंत्र, आयुधे आवरण. उपकरण , चतज्जातकारुशिल्पिभि कृतकर्मप्रमाणकालवेतनफलनिष्यात्तिभिः कारयेद स्वभूमौच स्थापयेद ॥

2. The store in-charge should protect the materials from heat, rusting, insects etc. He should maintain the records of quantity and price ,descriptin etc.

२ स्थानपरिवर्तन आतपवातप्रदानच बहुशः कुर्याद। उष्मोपस्त्रेहक्रिमिभिरुप हन्यमाननमन्यथा स्थापयेद । जातिरुप, कक्षण, प्रमाण,आगम, मुल्य, निक्षेपैश्वरोपलमेत ॥

3. The different fixed machines in the store are, Survtobhadra, Jaamdagnya, Bahumukh, Vishwasghati, Sanghatee, yaanak, Parjanya, Ardha bahu and Urdhwabahu .

३ सर्वतोभद्र, जामदग्न्य, बहुमुख, विश्वासघति, संघाटी, पानक, पर्जन्यक, अर्धबाहु, उर्ध्वबाहुनीस्थतन्यंत्राणि ।

4. The movable machines are Panchalik, Devdand, Sukarik, Musal, Yashtee, Hastidharak, Talvrutta, Mugdar, Gada, Spruktla, Kudal, Spatabhi, Ouddhatim, Utpatim, Shatagnee, Trishul and ChakraNee

४ पंचालिक, देवदंड, सुकरिक, मुसल, यष्टि, हस्तिवारक, तालवृत्त, मुग्दर, गदा, स्युक्तला, कुदाला, स्फाटिम, ओध्दाटिम, उत्पाटिम, शतघ्नि, त्रिशुल, चक्राणि, चलयंत्राणि

5. Plough type weapons are Shakti, Grass, Kunt, HaaTak, Mindipal, Shool, Tomar, Dukkarkani, Kankaape, Trasik etc.

५ शक्ति, ग्रास, कुंत, हाटक, मिदिपाल, शूल, तोमर, वराहकर्ण, कणमकर्षण, त्रासिकादीनि हलमुखानि ।

6. Illusion making modern and latest weapons should be manufactured and used in the war.

६ ऐंद्रजालिकं औपनिषदिकंच कर्मकर्मातानाच ।

7. A good In-charge of ammunation depot should have knowledge about demand, use and maintenance of weapons, their short comings etc.

७ इच्छमारभ निष्पत्ति प्रयोग व्याजमुद्देयम् ।  
क्षयव्ययौच जानियाद कुप्यानामायुवेश्वरः ॥

SV11-Kautilyas view on amunnation depots

In the modern warfare cannons are used to fire cannon balls. Chemical weapons are dropped from aeroplanes. So ancient weapons, such as Agneyastra, Samohanastra, Timirastra etc, are condered as myths.

A true warrior not only protects his body but attaches the enemy. There are three ways to attack, i) on foot, ii) On animal –horse, elephant or camel and iii) on vehicle-chariot. Accordingly the warriors are known as;

A-Padati, B- Ashwabahu, Gajaroh or Saadi and C- Rathee. Ref. SV12

रथिनः सादिनश्चैव गजारोहाश्च सप्तमा॥  
पतयश्च महाकायाः बलमेतश्चतुर्विधं ॥

### SV12- Three ways to attack

For wars on plain ground chariots are suitable, for uneven ground elephants are useful and in desert wars horses or camels are more suitable. Infantry is used for difficult terrain. For naval wars boats or ships are used. Ref.YuddhajayarNav. Ref.SV13.

रथयुद्धं समेदशे विषमे गजसगरः॥ अश्वयुद्धं मरौदेशेपत्तियुद्धं च दुर्गमे॥  
अस्ययेसर्वयुद्धं स्थान्नौकायुद्धं जलप्लुते ॥ युद्धजयार्णव

### SV13-Use of animals in war

*Arthashastra* by *Kautilya* states that;

- Victory of king depends on number of elephants. By virtue of the strength elephants can break the gates of fort, crush the enemy soldiers.
- During war arrangement for treating wounded soldiers should be ready with proper doctors nurses and medicines.
- Soldiers have to do different types of works during war, such as erection of camps, bridges, dispensaries, water , supply of food and weapons , construction of roads etc. Ref. SV14

हस्तिप्रमाणो विजयोराज्ञा। परानीकव्यूह दुर्गस्कंधावारप्रमर्दनाः।  
ह्यतिप्रमाणशरीराः प्राणहरकर्मणो हस्तिनः। संहतानीक हस्तिभिर्भेदयेत ॥  
चिकित्सकाः शस्त्रयंत्रागद स्नेहवस्त्रहस्ताः स्त्रियश्चान्नपानरक्षिण्यः ॥  
पुरुषाणामुद्धर्षणियाः पृष्ठतस्तिष्ठेयुः ॥  
शिविरमार्ग सेतुकुप तीर्थ शोधन कर्म , यंत्रायुधदावरणीपकरण ग्रासवहनं ॥  
आयोधनाच्च प्रहरणावरण प्रतिविधदापयनयनं इति विष्टिकर्माणि ॥

### SV14 - Kautilya on war planning

During the war various wings of army have to move forward in a co-ordinated method. For that proper strategic planning (Vhuha) is necessary. SamarangaN Sutradhar mentions following rules of it. Ref. SV15.

यत्रा युध्दे ध्रुव नाशो युध्दे जीवित संशयः॥  
 त कालमेकं युध्दस्य प्रवेदंति मनीषिणः ॥  
 संहत्य योधये दल्पान् कामं विस्तरयेद्बहून् ॥  
 सूची मुखमनीकंस्यादल्पहि बहुभिः सह ॥  
 मौलबद्धं कुलबद्धं सहतंतु बलत्रिधा ॥  
 रथोबलं समेदेशे गजस्तु विषमे बलं ॥  
 जांगले बलमश्वाश्च बलं नौका जलप्लुते ॥  
 पदातयस्तु सर्वत्र तस्मात्पत्ती बलबलं ॥ समरांगण सूत्रधार

### SV15 - Strategic planning

- War is to be fought in situation of survival but in other case it should be fought after careful consideration.
- In case of small army it should be kept united. It should be move from place to place to fight gorilla war.
- In case of large army it should attempt should be made to corner the enemy army.

The military force can be of three types; a) permanent b) combined forces or c)hired. The first type is best but hired force is undependable. Kautilya recommends following strategic plans;

- In infantry division armored soldiers should be on front, backed by archery section.
- The divisions should be Horse, Elephant and Chariots division in the rear.
- Each division should be split into three parts ,one in center and two on sides. Ref. SV16.

पत्तिव्यहः पुरस्तादावरणिनः पृष्ठतो धंविनः  
 शुद्धाः प्रत्तथः पक्षयोः ,अश्वापाश्वर्यो , हस्तिनपृष्ठतो रथाः पुरस्ताद  
 अश्वव्युहो वर्मिणां उरस्य शुद्रानां कक्षपक्षौ ।  
 स्थानां द्वौत्रिभागो अंगेषु शेषमुरस्यं रथव्युहेन हस्तिव्युहो व्याख्यातः ॥

### SV16 -Three types army

Forts are essential for self protection during war. One soldier on fort is stronger than hundred soldiers outside of the fort. Ref. SV17a

एकः शतयोधधयति प्राकारस्थो धनुर्धरः ॥  
शतं दशसहस्रानि तस्मादुर्गं विशिष्यते ॥

SV17a – Strength of a fort

Forts are of two types, namely natural or artificial. Natural forts are those surrounded by mountains, or rivers. Such forts are difficult to be conquered by enemy. Ref. SV17b.

अकृत्रिमं कृत्रिमं च तत्पुनर्विद्विधम्भवेद ॥  
वद्वैव घटितं दुर्गं गिरिनद्यदि साश्रितं ॥  
अकृत्रिममितिज्ञेयं दुर्लभ्यमरिभूभुजा ॥  
प्राकारपरिखारण्यं संश्रयं भवेदिह ॥  
कृत्रिमं नामविज्ञेयं लंघ्यालंघ्येतुवैरिणां ॥ युद्धजयार्णव

SV17b – Types of forts

Artificial forts are those which has protection walls, trenches or other obstructions. Forts are classified as; Durg, Koota and Aakar Ref. SV17c.

अत्यच्च विस्तीर्णशिरा दुरारोहः सकाननः ॥  
सजलाशय संभारः भोज्यद्रव्य समाश्रयः ॥  
सुखनिःसरणो दुर्गः पर्वताख्यो महीभुजा ॥  
नद्योगंभिर विस्तीर्णा चतुर्दिक्षु व्यवस्थिता ॥

SV17b

तन्मध्ये भूप्रदेशोयो नदी कूटः स उच्यते ॥  
यदन्याच्चिरकालीनं दुर्लभ्य विपिनादिकं ॥  
तन्मध्ये रचिता भूमिः कूटत्वनपितृष्टित ॥  
यास्मिंदेशे गिरिर्नास्ति नद्योवागहनोदकाः ॥

SV17c

तस्यमध्ये महीपालः आकरं दुर्गभारचेत ॥  
गजैरलंघ्या विस्तीर्णा गंभिराः पूर्णं वायवः ॥

प्राकारत्वेन निर्दिष्टाः परिरवा बहुयादसाः ॥  
विशालशानं सघनं बहुकंटक संकुलं ॥

SV17d

प्राकारत्वेन निर्दिष्टं विस्तीर्णं विषमबलं ॥  
अधोधोबध्यमानोहि कंदराल्पजलांवितः ॥  
आकरत्वेन निर्दिष्टः यु दुर्लघ्योहिभूभूजा ॥  
न दुर्ग दुर्गित्याहुः योघृदुर्ग प्रकीर्तितं ॥  
योधशून्यं तुयर्गृगकायसमसमंहितत ॥ युधदजयार्णव

SV17e -Forts and their types

- Durg (Gad in Marathi) is a fort difficult to climb upon, full of storage of water and food, with flat terrain at top, and with passages for quick exit.
- Nadikoot (Bhuikot in Marathi) – Fort surrounded by wide and deep rivers, covered with high trees. It is also known as “Bhumeekoot”
- Praakaar or Aakar are artificial forts with trenches or moats surrounding it, These trenches are deep and filled with water such that it cannot be crossed even with elephants.

Without brave soldiers all forts are useless. Without warriors forts are just like barren graves. As per Mayamat there are six types of forts as described below;

1. Dhanadurg
2. Maheedurg
3. Giridurg
4. Manushyadurga
5. Sansarg Durg
6. Vardurg

But according to other texts seven types of forts are;

Giridurg, Vanadurg, jaladurg, Pankadurg, HariNdurg, Devdurg and Mishradurg. But in short the fort should be difficult to climb and conquer,

difficult to approach or cross so that fort should help in defeating the enemy and protecting the kingdom. Ref. SV18

धनदुर्ग, महीदुर्ग, गिरीदुर्ग तथैवच॥  
मनुष्यदुर्ग, संसर्ग, वरदुर्गच तानिषट ॥  
गिरिवनजलपण्केरीण दैवत मिष्राणि सप्तदुर्गाणि १  
दुर्गदुर्गमुक्तं दुर्लभ्यं दुखगाहं च ॥  
रक्षार्थं च जयार्थं ह्यारिभिरभेद्यं च दुर्गमिष्टस्याद ॥ मयमत अ१०

#### SV18 – Different types of forts

According to "YuddhaJayarNav" the main Gate should have two doors, four internal, obstructions(Argala), Protective long and strong nails (Indraneel) to protect from thrust of elephants, secret openings and attacking points. Ref. SV19.

द्विकवाटचतुष्परिघागलहस्तोन्नतदकीलयुत ॥  
सस्थूणमध्यममालयमिठकसहितं सगूढ सोपानं ॥

#### SV19 -Main gate of fort

The king in his council of minister should have following persons;

Advisor, Priest, Ministers, Ambassdor, Writers, Astrrologer, Home minister, defense minister and heads of different divisions of army. The integrity of all such persons should be unquestionable. These ministers should be uncorrupt, alert and expert in their own fields.

गुरुः पुरोहितांमात्यो मंत्रीदूतश्च लेखकः॥  
ज्योतिज्ञोऽन्तः पुराध्यक्षो बलाध्यक्षादिकं क्रमाद ॥  
अप्रमत्तानुब्धाश्च विरोषाश्चैव राजसु ॥  
अमात्यान् विविधांकुर्मा तत्र तत्र विपश्चितः॥ युद्धजयार्णव

#### SV20 – Council of ministers

The king should bear in mind that his rule is to protect religion, people and their comforts. Wisdom and wealth grows slowly but life and reserves also diminishes. King must protect farmers as they produce agricultural wealth. Mines, forests and animals are sources of wealth. Hence he should appoint



competant persons to supervise these departments. The greatness of a King depends upon the wealth and the people he rules. Ref. KautilyaArthashastra Ref. SV 21.

धर्महेतोः सुखार्थाय भल्यानां मरणायच ॥ आपदर्थं च संरक्ष्य कोशोराज्यवतासदा ॥ विध्याचराजकोशश्च स्तोत्रस्तोकिनवर्धते ॥ आयुष्यं च धनेचैव स्तोत्रस्तोकेनहीयते ॥ राज्ञोपायेनसंरक्ष्या ग्रामेग्रामे कृषीवलाः॥ तेभ्यः कृशित्ततश्चार्था अर्थेभ्यः सर्वं सम्पदः ॥ युद्धजयार्णव आकर प्रभवः कोशो धनधान्य समृद्धवः। राजानः कोशदंडाभ्या प्राप्नुवतिच गौरव ॥ कौटिलीय अर्थशास्त्र
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## Ethics of ancient Indian wars

The ancient Indian wars were fought for defending the noble cause of God, Crown and Country. There were strict laws of war as mentioned below.

- A warrior in armor must not fight with one not so clad
- One warrior should fight only one enemy warrior and cease fighting if the opponent is disabled,
- Aged men, women and children, the retreating, or one who shows a sign of unconditional surrender should not be killed.
- The army should not destroy agricultural lands, the fruit and flower gardens, temples and other places of public worship. Megasthenes, a Greek historian noticed this as the 4th century B.C
- The most important, is Indians never waged wars of conquest beyond the borders of own country.
- The conqueror, before invading the foreigner's country, used to send an ambassador with the message: 'Fight or submit.'
- More than 5000 years ago India recognized that the person of the ambassador was inviolable. This was a great service that ancient Hinduism rendered to the cause of international law.

The Hindu science of warfare values both ethical principles (niti) and valour (shaurya). The term nitishastra, which was given to books on ancient Indian policy, shows that though the subjects they threatened were secular, still they had their basis in religion. In fact the religion governed the actual life of every person from birth to death. It was therefore realised that waging of war without regard to moral standards.

According to Persian herald " Thus it was that religion was able to win recognition for one of the most enduring ideas of international ethics".

The Mahabharata (Shantiparv) rules that the king who killed an envoy would sink into hell with all his ministers.

- A warrior in armour must not fight with a Kshyatriya who is not clad in a coat of mail.
- One should fight only one enemy , and cease fighting when opponent becomes invalid.
- If the enemy is clad inmail, his opponent should put on armour.

Ref.SV8.01

नासन्नहो नाकवचो योद्धव्यःक्षत्रियो रणे शांतीपर्व ९५.७

एक एकेन भाव्यश्च विसृजेति क्षिपामि च शांतीपर्व ९५.७

स चेत्सन्नद्ध आगच्छेत्सन्नद्रव्य ततो भवेत् |

स चेत्सैन्य आगच्छेत्सैन्यस्तमथाह्वयेत् ॥ शांतीपर्व अ ४.९१

स चेन्निकृत्या युद्धेत् निकृत्या प्रतियोधयेत् |

अथ चेद्धर्मतो युध्येद्धमेरणैव निवारयेत् ॥ ८०९

### War ethics mentioned in Mahabharata

4. A cavalry soldier should not attack a chariot-warrior. But a chariot warrior could attack a chariot-warrior. Similarly a horse-warrior could resist another horse-warrior. The general rule is that warriors should fight only with their equals.
5. Poisoned or barbed arrows should not be used.
6. A weak or wounded man should not be killed , nor one who has no son.
- 7.He whose weapon is broken , or whose bow-string is cut, or who has lost his car should not be hit.
8. A warrior who requests to be rescued saying" I am thine" or joins his hand in supplication ,or throws his weapon , must not be killed. But he can be captured as a prisoner of war.
9. A king should fight only with a king and not with warriors of inferior status.

10. If a Bramhin enters the field to bring about peace between the contesting parties, both should stop fighting and no injury should be inflicted on such a Brahmin .

11. He is a wretch who retreats stricken with fear from the field of battle 85.

12. One should never lament over a hero killed in battle, for he becomes the lord of thousands nymphs.

13. Aged men, women, children, the retreating or one who holds a straw in his lips as a sign of unconditional surrender, should not be killed.

14. The panic –stricken and scattered foe should not be pursued hotly.

15.No one should kill the sleepy or thirsty, or the fatigued, or one whose amour had slipped, a peaceful citizen walking along the road, one engaged in eating or drinking, the mad and insane, one who went out of the camp to by provisions, a camp follower, menials and the guards at the gates.

### **Persons who are not to be killed**

The person who is asleep, who is in drunken state, who is devoid of clothes or weapons, the lady, the minor, the helpless, the afraid one who deserts the battlefield should not be killed SV8.02

मूर्च्छितं नैव विकलं नाशस्त्रं नान्ययोधिनम्।  
पलायमानं शरणं गतञ्चैव न हिंसयेत् ॥४१॥

### **Rules of wars**

One should not kill the enemy who is lying unconscious , who is crippled, devoid of weapon or is stricken with fear and also who has come for shelter (asylum). SV8.03

भीरुः पलायमानोऽपि नावेष्टव्यो बलीयसा ।  
कदाचिच्छूरतां याति शरणेऽकृतनिश्चयः ।  
संभृत्य महतीं सेनां चतुरंगा महीपतिः ॥४२॥

### **Prisoners of wars**

A strong and brave warrior should not chase and kill any fleeing enemy, who is stricken with fear. If the army is found in the chase, he should be interrogated. Accordingly arrangements can be made either for his asylum or for the battle.

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## **Nuclear weapons mentioned in Mahabharata**

English translation of an article published in Marathi magazine "Dharmabhaskar", July-August 1977, special issue on Defense, pages 97-101

Any Indian scientist would be ridiculed if he makes a statement that "Nuclear weapons were used in Mahabharata war. But if the same thing is mentioned by some western scholar, it is appreciated as research work. This article, which deals with the western reference would make readers to introspect.

Precisely this article may not be relevant to the subject of the special issue i.e. "Defense". But defense includes protection against aggression by the enemy. Unless one has knowledge about the weapons of enemy, defense strategy cannot be planned. One must know about where and how the enemy would attack. Mere defense may lead to defeat. Offense is the best defense. Strategic planning mentioned in ancient or modern literature is a part of defense. For ultimate victory offense is the only way in a war.

Nuclear weapons are necessary in modern warfare. America, Russia and China are equipped with such weapons and other countries are on the mercy of these three countries. Country with more nuclear weapons is the strongest. Same was the situation in the period of Mahabharata. The epic Mahabharata contains details of various weapons used in that great war.

The Sanskrit word Shastra (weapon) is derived from a root "Shas" mean violence or killing. Weapons have to be used to eliminate the enemy. Shastra means weapons to attack the enemy i.e. sword, club spear etc. But Astra are weapons to be thrown on enemy standing nearby. The word Astra means fire or light. When such weapon is used it generates fire and light.

Mahabharatas mentions such Astras (Missiles) i.e Agneyastra (Fire missile)

Parjanyastra (Rain missile), Sarpastra (Snake missile), its conter missile Garudastra (Eagle missile) etc. But the most ultimate destrutive missile was Bramhastra. Ashwatthama the son of DroNa received it heriditarily (Agastya-Agnivesh-DroNa-Ashwatthama). Knowing the possibility of its misuse by Ashwatthama, his father DroNachaya had taught the technique of difusing such missile to his student "Arjuna"

Mahabharata describes the destructive power of this ultimate missile. It had the power to burn the whole earth, it was equivalent to downfall of millions of meteors at same time.

Ashwatthama knew only to fire the missile but was ignorant about how to control or whidraw. So when Ashwatthama fire the missile, Lord Krishna asked Arjuna to fire another Bramhastra to counter the missile. Mahabharata describes the destruction caused by Bramhastra as below;

- The fire engulfed the entire space;
- The sky was full of light ;
- There was fall of meteors
- The whole earth with its mountains,rivers started trembling
- The land was turned barren due to no rains for tweve years.
- All creatures died due to excessive heat.
- The land was covered withs dead persons and ash.

According to Daniken it is the description of explosion of Atom bomb.

He mentions on page 86 that , " We know the kind of damage such bombs cause and that living creatures exposed to direct radiation die or become incurably ill". He further interprets the genesis chapter of "Old testaments" and mentions that "Let us imagine for a moment that Sodom and Gomorrah were destroyed deliberately by nuclear explosion. At some time or other every daring theory seemed to be a Utopia. Vitrifiacion are

also found in the Gobi desert and in the vicinity of Iraqi archeological sites. Who can explain why the sand vetrification resembles those produced by the atomic explosion in the Newada Desert? He further hoped that radio traces might be present in Dead sea.”

The epic Mahabharata , chapter 33, contains a story of three sons of the demon Tarakasura. The demon had constructed three towns made of gold, silver and iron. God Shankar destroyed all the three towns in a single arrow. Probably this is perhaps the first account of hydrogen bomb from a mighty Vimana (Aircraft).