SEMAPHORE WORKSHEET

Semaphore History:

Flag semaphore is a system for conveying information at a distance by means of visual signals with handheld flags, rods, disks, paddles, or occasionally bare or gloved hands invented by a Frenchman, Claude Chappe in 1793.

Information is encoded by the position of the flags; it is read when the flag is in a fixed position. Different letters are represented by holding flags or lights outstretched in different positions around a circle. Prior to 1793, Chappe had experimented with a number of telegraph designs along with his brother, but these proved less than successful. The semaphore telegraph that Chappe designed consisted of a large pivoted horizontal beam, with two smaller bars attached at the ends, looking rather like a person with outstretched hands holding signal flags. The position of the horizontal beam could be altered, as well as the angle of the indicator bars at the ends.

Chappe had developed the semaphore system to be used in the French revolution, to transmit messages between Paris and Lille, which was near the war front. In August 1794, Chappe's semaphore system delivered a message to Paris of the capture of Conde-sur-l'Escaut from the Austrians, in less than an hour. This success led to more semaphore telegraph lines being built, radiating in a star pattern from Paris. The semaphore network that was built in France represented the first telecommunications network in Europe. Semaphore were adopted and widely used (with handheld flags replacing the mechanical arms of shutter semaphore) in the maritime world in the early 1800s. This was the period in which the modern naval semaphore system was invented. This system uses hand held flags. It is still used during underway replenishment at sea and is acceptable for emergency communication in daylight or using lighted wands instead of flags, at night.

The semaphore system became widely copied and spread to Italy, Germany, and Russia. However, the invention of the electric telegraph was to signal the demise of semaphore, replacing it beginning in 1846.

Semaphore

A OR '1'	B OR '2'	C OR '3'	D OR '4'	E OR '5'
F OR '6'	G OR '7'	H OR '8'	I OR '9'	J
K OR '0'	L	M	N	O
P	Q	R	S	T
U	V	W	X	Y
Z		ATTENTION	ERROR	INTERVAL

Techniques to Learn Semaphore

Circular Visualization

This method involves visualizing the relative positions of the static flag and dynamic flag. The static flag is the flag that remains in a fixed position for each of the circle mentioned below. The dynamic flag is the flag that moves clockwise from the static flag's position. The dynamic flag will always move clockwise from the static flag's position never counterclockwise.

- First Circle; Static Flag Position at '0': A B C D E F G
- Second Circle; Static Flag Position at '1': H I K L M N
- Third Circle; Static Flag Position at '2': O P Q R S
- Fourth Circle; Static Flag Position at '3': T U Y
- Fifth Circle; Static Flag Position at '4': J V
- Sixth Circle; Static Flag Position at '5': W X
- Seventh Circle; Static Flag Position at '6': Z

Numerical Association

This method involves assigning a numeric value to each of the letter and is roughly based on the Circular Visualization Method. Each letter will have a unique two number value. To assign the numerical value, we use the numerical positions as seen to the right. For each letter, alway use the lower value of the two position first and the higher value as the second. Example for the letter 'A' we will assign it the numerical value of '01'. The letter 'B' will be assigned '02' and the letter 'R' will be '26'. See the table below the numerical assignment using this method.

A - 01	B - 02	C - 03	D - 04	E - 05	F - 06	G - 07
H - 12	I - 13	J - 46	K - 14	L - 15	M - 16	N - 17
O - 23	P - 24	Q - 25	R - 26	S - 27	T - 34	U - 35
	V - 47	W - 56	X - 57	Y - 36	Z - 67	

How to Signal Semaphore

When signaling, use the arm that is most comfortable for any given position. Usually each arm will stay on its side of the body. However, if the left or the right arm does cross the body, it will only do so to assume positions on the lower half of the circle: the '2', '1', '0', '7', '6' positions using the image to the right.

There are several methods to signal letters. First use the ATTENTION signal to make sure the receiver knows that there is a message pending. The receiver should signal back to you with the letter 'P' to show you that he is ready. Begin your message by signaling the letter 'L'. This is where there are two schools of thinking on how to signal differ. The difference is whether or not to use the INTERVAL signal between each letter or just between each word. Use whatever method that will be most clear to the receiver. To conclude the message, signal the letter 'A' eight (8) times. The receiver should send back to you the letter 'R' to confirm that he has received and understood the message.

During the message if you signal incorrectly, use the sequence of signals in the chart on page 2 to indicate that there is an error in the message. If you are the receiver, you have a set of codes to notify the signaler also.

Have fun using semaphore and remember PRACTICE, PRACTICE, PRACTICE.

Semaphore Communications

NGƯỜI NHẬN TIN	NGƯỜI ĐÁNH TIN
Bằng Lòng Nhận Tin; (P)	Chú Ý: (Mùa vòng số 8 trên đầu)
Không Nhận Tin; (K)	Chuận Bị Đánh: (L)
Đánh Lại; (C)	Sai Lầm: (Đánh chữ N qua chữ U vài lần)
Hiểu Rồi; (R)	Bỏ Nguyên Câu Trước; (N)
	Chữ Cuối: (AAAAAAAA)

PERSON RECEIVING MESSAGE	PERSON SENDING MESSAGE
Ready to Receive Message; (P)	Attention: (Move both arms in a figure 8 above head)
Did not Receive Message; (K)	Beginning of Message: (L)
Please Send Message Again; (C)	Error in Message: Signal (N) then (U) se veral times
Received and Understood Message; (R)	Disregard previous word; (N)
	End of Message: (AAAAAAAA)