Reading

The Transatlantic Cable

Laying the transatlantic cable was the culmination of the unflagging perseverance of one man leading like-minded men, of disparate technical and scientific advances, and of the need for faster communication. The first attempts at laying the cable in the 1850s, each of which cost an enormous amount of money, failed utterly. Yet as technology and science improved, and the need for faster communication increased, perseverance finally paid off.

The man who rallied support and raised money for the transatlantic cable venture was Cyrus Field, a New York businessman, who started the New York, Newfoundland, and London Telegraph Company in 1854. For the next twelve years, Field raised money and expectations in North America and England for repeated attempts at laying a cable, despite catastrophic cable breaks and a formal inquiry when the first cable stopped working within days.

The scientific and technological advances began with electricity, the study of which was attracting the greatest minds of the age. Samuel Morse invented a code that made it possible to send information over electric wires, and he made the first successful transmission in 1842. The next year, d'Alameida, a Portuguese engineer, announced the use of gutta-percha, a rubberlike sap from the gutta tree, as an insulation for wires. Thus, two of the requisites for an underwater cable were met. In the next several years, telegraph cables were laid in Atlantic Canada, across the English Channel and around Europe, and across the United States.

In 1857, the company Field founded set out to lay the cable that had taken months and almost a million dollars to make. The cable was made of 340,000 miles of copper and iron wire and three tons of gutta-percha insulation, too much for one ship to carry. The cable was divided between two ships, each towed by another, all four provided by the British and American navies. After only 255 miles of cable had been laid, the cable stopped transmitting and then snapped, sinking to the depths of the ocean. The second attempt was made in 1858, beginning at the midpoint of the Atlantic, from which each ship lay cable as she sailed to her home shores. Again, the cable inexplicably stopped working. They tried again a month later, beginning again from the middle and sailing in opposite directions. This time, success! Queen Victoria sent a message to President Buchanan, and both countries celebrated. Within hours, however, the signal began failing. To compensate for the fading

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transmissions, Whitehouse, the American engineer, transmitted messages at higher voltages, eventually burning out the cable. Once a hero, Field was now vilified.

Work on the transatlantic cable was halted because of the American Civil War. During the war, the telegraph became indispensable, and enthusiasm for a transatlantic cable mounted. In Scotland, William Thomson, who would later be knighted Lord Kelvin for his work, corrected the design flaws in Whitehouse's cable. Kelvin also designed a mirror-galvanometer that could detect weak currents, thus allowing lower voltages and weaker currents to transmit information. In 1866, the world's largest steamship laid Kelvin's new cable, an unqualified success. Field's perseverance had triumphed in the end.

Answer the questions about **The Transatlantic Cable**.

Questions 1–4

Look at the following inventors and the list of descriptions below. Match each inventor with the correct description, ***A–F***.

A burned out the first transatlantic cable by using high voltages

B was the first to be utterly successful in getting the transatlantic cable laid

C invented a type of insulation from the sap of a tree

D sent a telegraph message to President Buchanan

E was the first to attempt to have a transatlantic cable laid

F developed a code for transmitting messages by electric cable

_____ 1. Morse

_____ 2. d'Alameida

_____ 3. Field

_____ 4. Kelvin

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Questions 5–9

Complete the summary using words from the list below.

In the 1850s, several unsuccessful attempts were made to lay a telegraph cable across the Atlantic Ocean. For the first attempt, a cable was manufactured of copper and iron wire with gutta-percha **5**..... . It was so heavy that the ships that carried it had to be **6**..... by other ships. This cable failed because it **7**..... and sank beneath the sea. The second attempt also failed. The third attempt appeared to be successful, and a message was **8**..... from England to the United States. However, the telegraph company did not **9**..... this time either. This attempt also turned out to be a failure when the cable stopped working, and the reputations of the project leaders were vilified.

compensated	rallied	towed	triumph
insulation	snapped	transmitted	voltage

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My Words

Write the words that are new to you. Look them up in the dictionary and write their definitions.

Words	Definitions

Word Families

noun	catastrophe	The initial attempts to lay a transatlantic cable ended in catastrophe for Field.
adjective	catastrophic	The failure of the initial attempts to lay the transatlantic cable resulted in a catastrophic loss of money.
adverb	catastrophically	Field failed catastrophically in his attempts to lay a transatlantic cable.

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noun	compensation	There is no compensation for hard work and perseverance.
verb	compensate	Hard work can sometimes compensate for bad luck.
adjective	compensative	When the signals began to fade, they took compensative measures to keep the cable working.

noun	insulation	Rubber makes good insulation for an electric wire.
noun	insulator	Rubber is a good insulator.
verb	insulate	It was important to find a practical way to insulate the cable.
adjective	insulated	The transatlantic cable was insulated with gutta-percha.

noun	perseverance	Because of Field's perseverance, a telegraph cable was eventually laid under the Atlantic Ocean.
verb	persevere	An inventor must persevere to turn his ideas into reality.
adjective	perseverant	A perseverant person can find a way to achieve her dreams.

noun	triumph	The laying of the cable in 1866 was a triumph for Kelvin.
verb	triumph	Many people worked hard to make the idea of a transatlantic cable into a reality, and they finally triumphed.
adjective	triumphant	It was a triumphant day when the English queen sent a telegraph message to the American president.
adverb	triumphantly	They triumphantly announced the completion of the project.

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Word Family Practice

Choose the correct word family member from the list below to complete each blank.

Invention is all about hard work. An inventor may have a brilliant idea, but he has to test it many times. The process may be filled with **1**..... . It is the **2**..... inventor who will eventually be **3**..... . For example, there were many failed attempts before the transatlantic telegraph cable was successfully manufactured and laid. After a material was found that could suitably **4**..... the cable, they thought the major difficulties had been solved. However, they met with many more difficulties when they actually tried to put the cable in place. They tried to **5**..... for the flaws in their method but were unsuccessful. It wasn't until almost ten years later that another group of people succeeded in laying the cable.

1.	catastrophes	catastrophic	catastrophically
2.	perseverance	persevere	perseverant
3.	triumph	triumphs	triumphant
4.	insulation	insulate	insulated
5.	compensation	compensate	compensative

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Word Skill

Phrasal Verbs with set.
Phrasal verbs are made up of two parts: a verb and one or two particles. The meaning of the phrasal verb is usually not related to the meanings of the individual parts.

Phrasal Verb		Meaning
set	*out*	begin a project
verb	particle	
set	*back*	delay
verb	particle	
set	*up*	arrange
verb	particle	

Choose the correct phrasal verb from the list above to complete each sentence.

1. The two inventors _____ to design a new kind of cable.
2. They _____ a meeting to talk about their project.
3. The meeting was _____ several days because of bad weather.

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Listening

CD 1 Track 31

Listen to the talk. Complete the timeline below.
*Write **NO MORE THAN TWO WORDS AND/OR A NUMBER** for each answer.*

1..... The mayor got the idea for a museum.

1976 The mayor **2**..... to get the requisite money.

1977 A large gift of money was lost.

3..... Construction of the museum began.

4..... museum opened

1998 opening of exhibit on **5**.....

Writing

In your opinion, which is more important for success, perseverance or good luck?

Support your opinion with reasons and examples from your own knowledge or experience.

Write at least 250 words.

Speaking

Talk about the following topics.

What profession do you work in or do you plan to work in? What are the usual requisites for entering this profession?

In your opinion, what personal qualities are indispensable for success in your profession?

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