

A STUDY OF OPTICAL COMMUNICATION SYSTEM

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Abstract

Optical communication is any form of telecommunication that uses light as the medium. An optical communication system consists of a *transmitter*, which encodes a *message* into an optical *signal*, a *channel*, which carries the signal to its destination, and a *receiver*, which reproduces the message from the received optical signal. There are many forms of non-technological optical communication, including language and sign language. Techniques such as semaphore lines, ship flags, smoke signals, and beacon fires were the earliest form of technological optical communication. The heliograph uses a mirror to reflect sunlight to a distant observer. By moving the mirror the distant observer sees flashes of light that can be used to send a prearranged signaling code. Navy ships often use a signal lamp to signal in Morse code in a similar way. Distress flares are used by mariners in emergencies, while lighthouses and lights are used to communicate navigation hazards. Aircraft use the landing lights at airports to land safely, especially at night. Aircraft landing on an aircraft carrier use a similar system to land correctly on the carrier deck. The light systems communicate the correct position of the aircraft relative to the best landing glideslope. Also, many control towers still have an Aldis lamp to communicate with planes whose radio failed. Optical fiber is the most common medium for modern digital optical communication. Free is also used today in a variety of applications.