



# AVIATION TECHNICAL BULLETIN

Champion Spark Plug Company

P. O. BOX 910, TOLEDO, OHIO 43601

February 4, 1969

NO. 69-2

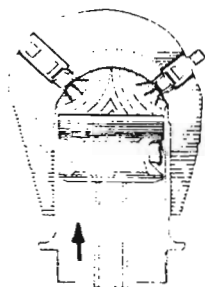
ROUTE TO	
SERVICE MANAGER	
SALES MANAGER	
BULLETIN BOARD	

## Know these engine combustion conditions?

Here are three different engine combustion conditions and what happens when they occur:

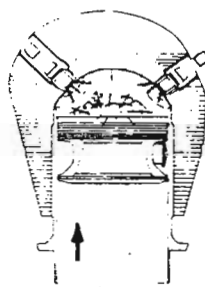
### NORMAL COMBUSTION

NORMAL IGNITION  
NORMAL FLAME



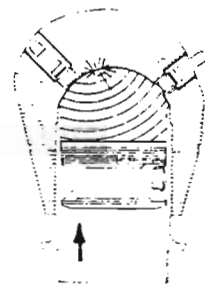
### DETONATION

NORMAL FLAME  
FOLLOWED BY SPON-  
TANEOUS COMBUS-  
TION



### PREIGNITION

IGNITION IN  
ADVANCE OF  
NORMAL SPARK



CONTROLLED  
COPY

## HERE'S WHAT HAPPENS

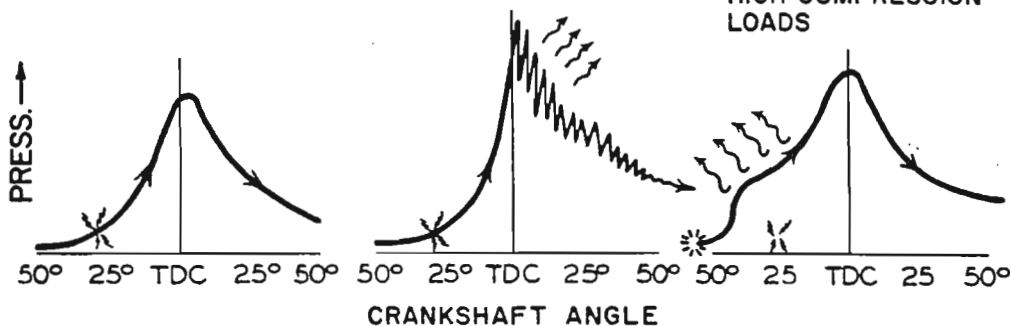
### NORMAL COMBUSTION

### DETONATION

1. HIGH VIBRATORY PRESSURES
2. INCREASE HEAT DISCHARGE TO PARTS

### PREIGNITION

1. EXCESSIVE HEAT DISCHARGE TO PARTS
2. INCREASE PEAK PRESSURES
3. LOSS OF POWER, HIGH COMPRESSION LOADS



Taken from SAE Paper entitled "Preignition in Aircraft Reciprocating Engines" by Jonas Anderson - Wright Aeronautical Div., Curtiss-Wright Corporation, January 1956.

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