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NASA TECH BRIEF

An Infrared Television System for Hydrogen Flame Detection

The problem:

How to detect, with a TV monitoring system, a hydrogen flame burning in a bright sunlit environment.

The solution:

Use an infrared sensitive vidicon camera system utilizing a single camera operating in the near infrared.

How it's done:

Flame produced by hydrogen burning in air is not visible to the human eye because the emission spectra is outside the band in which the eye is sensitive. A thorough analysis revealed that using an ultraviolet vidicon produces poor results, but when an infrared sensitive vidicon is used the hydrogen flame is clearly visible. A narrow band pass filter (pass band centered about 2.8 microns) was added to the set-up which provides a great degree of control over the scene displayed.

Notes:

1. This information may be of interest to personnel engaged in the design, development and use of TV monitoring and detection systems.
2. No further documentation is available. Inquiries may be directed to:

Technology Utilization Officer
Kennedy Space Center
Kennedy Space Center, Florida 32899
(B69-10354)

Patent status:

No patent action is contemplated by NASA.

Source: Melvin G. Wode of
Brown Engineering Company
under contract to
Kennedy Space Center
(KSC-10368)

Category 01