

Proposal Abstract J92.1(A83)

1. Arms Control Problem:

- Nuclear weapons - ballistic missiles
 - cruise missiles
 - manned bombers
 - missile tests
 - mobile ballistic missiles
 - reentry vehicles
 - comprehensive test ban
 - fissionable materials 'cutoff'

2. Verification Type:

- (a) Remote sensors - satellite
 - ELINT
 - ground-based
 - radar
 - aerial
 - shipborne
- (b) On-site inspection - selective
 - IAEA safeguards

3. Source:

Federation of American Scientists. "Verifying a Model Freeze".
Reproduced in Congressional Record (14 April 1983): S4616-S4621.

4. Summary:

The paper reviews US national technical means (NTMs) of verification. Imaging reconnaissance satellites include the following:

- (1) KH-11 - This CIA satellite weighs about 10,300 kg and flies at an altitude of 300 to 600 km for up to two years. It can image wide areas or zoom in on smaller areas with a resolution of between two and five metres. The KH-11 does not use photographic film but instead employs an electronic imaging system; this permits it to transmit images to earth in real-time. Sensors on the KH-11 are probably multispectral.
- (2) "Big-Bird" - This US Air Force Satellite weighs about 11,000 kg and flies at an altitude of 160 to 280 km for about six months. It uses photographic film to record images. Film of large areas is developed on board, scanned by a TV camera and the TV image is transmitted to earth. Film of specially chosen targets can also be returned to earth via four or six film pods carried by the satellite.
- (c) "Close-look" - These satellites fly at altitudes of 80 to 90 miles for about 60 days. They can take pictures with a resolution of perhaps six inches. Film is returned to earth in pods. Their frequency of use has declined since the introduction of "Big Bird". Both the "Big Bird" and "close-look" satellites will be replaced in 1984 by a large satellite with long lifetime.