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CONTROL SYSTEM

~~(S)~~ NATIONAL RECONNAISSANCE OFFICE

WASHINGTON, D.C.

6 February 1980

THE NRO STAFF

MEMORANDUM FOR COLONEL EASH

SUBJECT: Weather Support for LORRI

The LORRI pallet on HEXAGON 1216 will be covering the 26-42 GHz band. A detailed post-analysis will be accomplished on all of LORRI's collection and the atmospheric attenuation during each contact will be required. Clouds, fog, rain and water vapor can cause in excess of 3-4 db/km attenuation (see attached figures).

Fully automated weather support from AFGWC [redacted] 25X1 has been in the planning stages since Nov 77. Interface testing has been completed and is ready for support. Full rehearsals will be held in March. A pre-established target list will be used and data for up to 192 locations each day will be sent daily tape-to-tape from GWC [redacted] 25X1 The data for each location will contain the following:

a. Temperature, pressure and water vapor profile.

b. Surface observation (nearest four, ±3 hrs.).

c. Amount of precipitation last 3 hours.

d. Cloud Free Line of Sight (CFLOS) probability.

e. Attenuation due to liquid water for 28, 32, 36 and 40 GHz in db.

Data for special locations not pre-established will be provided by the Environmental Technical Applications Center (ETAC - the AWS climatological center) by card deck.

The weather support planning appears to be well in hand.

PAUL D. TRY
Lt Colonel, USAF

[redacted] ~~/HEXAGON~~ 25X1

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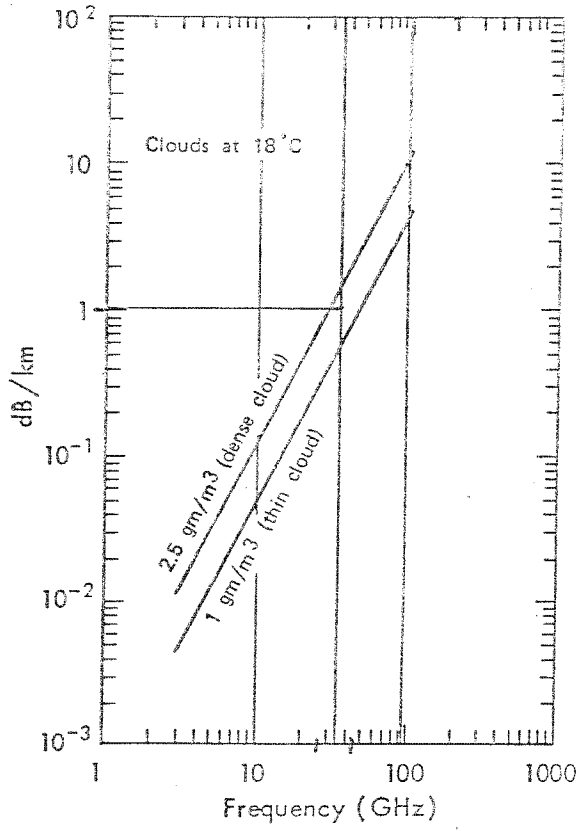
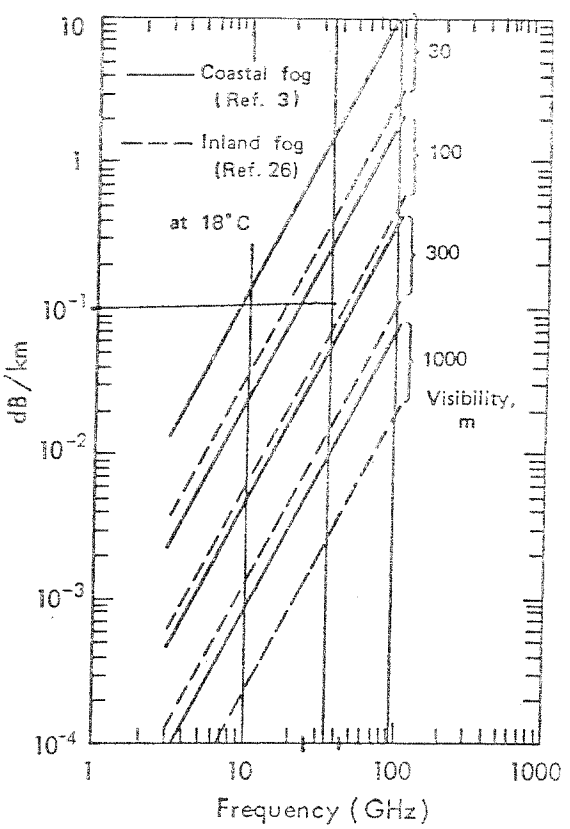
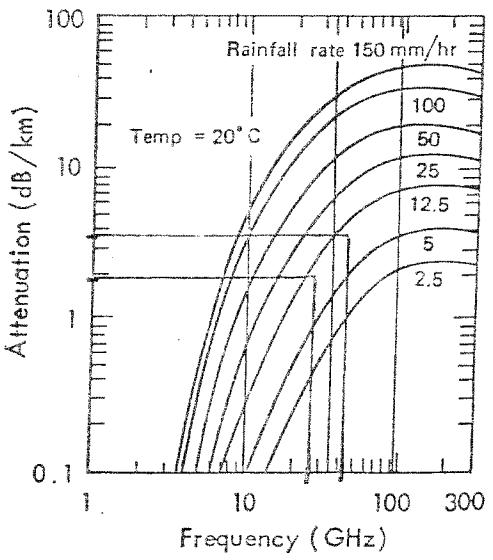


(a) Clouds ~ 1 db/km



(b) Fog ~ 10^{-1} db/km



10 mm/hr medium Rainfall

~ 3 db/km

(c) Rain

(d) O_2 & H_2O vapor ~ 0.5×10^{-2} db/km

Fig. S2 — Radio frequency attenuation due to clouds, fog and rain