Everyone -

Sorry for taking so long to prepare a follow-up to our meeting on 12/13. I had travel from 12/18-25 and forgot to prepare a summary of our current action items upon my return. Below are the notes and items I recorded during our meeting. Please advise if I've missed anything.

(1) Kaber – Completion of draft of additional sections for ASEM manuscript (1/7).
(2) Kaber – Ask Hsiang about additional contributions to discussion (1/7).
(3) Kaufmann – Contributions to procedures/future work sections of ASEM manuscript (1/7).
(4) Kaufmann – To take lead on preparing draft paper submission for HFES meeting – submission to Aviation TG (Draft – 1/14; Deadline – 1/28).
(5) Alexander and Kaufman – Identify desired characteristics of subject population for Year 2 experiment – Some HUD experience; some SVS experience. Identify tentative sample size (discussed 12) (Draft list - 1/17).
(6) Stelzer, Kim and Prinzel – Identify HUD configurations to be studied in Year 2 (Tentative list - 1/17; Revised list – 2/14).
    Start by identifying displays at extremes of pilot preference from Year 1 results.
    Need to discuss Langley interests with Prinzel.
(7) Kaber, Kaufmann and Kim – Identify objective measures of visual display properties and measurement devices (2/14).
(8) Kaufmann and Stelzer – Identify pilot performance measures to collect in experiment (Tentative list - 2/14).
    Kaufmann said we want the pilots to hand-fly the A/C.
        (We expect control actions to be influenced by degree of display clutter.)
    Kaufmann said the pilots could fly a visual approach or the ILS.
    We would gradually "dial-down" the weather during the approach (no visible runway) and force a re-route.
(9) Kaber and Kaufmann – Define subjective measure of clutter threshold – Would you want to "declutter" the display at this point (or switch from primary to IMC mode)? (Alternatives – 1/17).
(10) Kaber, Stelzer, Alexander – Identify pairs of descriptors terms from Year 1 results for use as anchors to subjective clutter rating scales for Year 2 experiment (Tentative list - 1/17).
    Candidate pairs include: "redundant/orthogonal"; "monochromatic/colorful"; "not salient/salient"; "static/dynamic" or "monotonous/variable"; and "sparse/dense"
    Need to develop clutter dimension ranking form – pairwise comparisons of various dimensions.
    Need to develop clutter dimension rating form
    Need to define procedure for composite perceived clutter calculation – rank-weighted sum of ratings.
(11) All – Define flight scenario and experimental design (Draft – 2/14).
    Hand-flying – ILS or curved-in
    Consider using curved-in (visual) and ILS approaches as workload manipulation.
    May not achieve range of workload conditions that Mike Norman suggested.
    Other workload manipulations include:

Selecting some level of air turbulence and inducing uncommanded variations in heading, airspeed, altitude, vertical speed, etc. representative of turbulence conditions.

(Need to ask Lance if this is possible in IFD.)

Such a manipulation is expected to cause pilot focus on control.

Engine failure leading to yaw, reduced airspeed and "red" lights.

This condition may actually distract pilots from control and might render some performance indicators of display clutter insensitive.

(Also need to ask Lance if this type of condition is possible.)

Experimental design

Discussed completely within design.

Using 6 trials (2 workload conds. x 3 display configurations)

(More display configurations might require using segmenting trials and presenting different displays at different times.)

Each trial would last about 30 min. (including subjective clutter ratings)

Need to review CaD-CE briefing again to understand experiment approach and use as basis for new experiment design.

With respect to individual availability for the preliminary testing between 3/3-7/08 and the experiment next summer, here are the conflicts I recorded:

| | |
|---|---|
| Alexander | 5/27-29; 6/4 |
| Stelzer | 5/21 |
| Kaufmann | 5/15-31 |

We tentatively scheduled the Year 2 experiment for 6/1-15/08. Please correct me if I have any dates wrong.

I would like schedule our next team meeting for the middle of January, say 1/17, from 10:00-11:30a. Please let me know your availability.

Dave Kaber