LA + IBM Meeting[1]: Thurs AM Oct 18, 57

Los Alamos Says:

I. Symmetry of OA + index SA + index, more imp than 12 bit I Field.

II. Full wd. symmetry 6 Bit natural

Count half wd — indexing becomes hard to 16 registers (refer to)
larger generality + flexibility.

In full wd decision — ground rules were dropped in going to ½ wd. — minimum format — 12 bit index field — fixed opcode formats.

Preferences between full-wd — ½ half wd

↑ more flex. + power in indexing.

simpler. — fewer compound

Op. + Store loc. counter.

Convenience in Coding in large problems
Simplicity in Thinking need flexibility

Operational definition of Weights: — years of experience — gives feeling" — proof

— don't want machine to be "tricky" for every one.

— this present IBM format is at least as good as old full wd format but either of LA formats are better than any of the others

Geometric indexing — . . . . .) ⊲ important difference

Description of IBM

gen'l: IBM Philosophy : — can use any mem loc. in a full wd (2 halves)

e.g. geometric index — question of what is more & less important,

question of Immediate Index : — bit address

Fred : very-very useful
Roger : half wd only.) ⊲ imp. difference

Roger → (Load Geom: question of using 15 × 3 others as modifiers of some sort ?)

we have assumed half wd index reg — simple vocab —
could use complicated vocab. just as well — here as in full wd.
need not increase vocab for full wd ind. regs.?

ReName Store C(II) → C(C(I))
load W → C(I) (name)
load C(W) → C(II) (index) } use any mem loc. for index

Brooks: — almost complete agreement.

leave or set B to zero.

better to say leave or invert. conditional invert.

Chain Indexing — not vital

Brooks Geom: 1. ac 16 insufficient compared

2. Geom indexing on every fl. pt. instr.

3. if I hear do 4 bits vs 6 bits?

Points for Geom every order.

1. Will decrease Code.

2. Convenience to coder.

3. Looping back is dangerous q may be r,s,v or r,s,t

conceptually → better but speed pending

Worlton: (comparison) of LA & IBM half wd

1. 6/4 bit index in correct format
2. 2 vs 3 index addr. or transmit format
3. 64/192 Fl Point ops, Floating
4. Di. Geometric 6 + 63 index vs Geometric 18 + 15

SLA can have an order to add. load also. (Conditional Br. are same)

Fred feels this is worst →

5. Indexed-Indexing } full wd LA vs half wd IBM
6. 25 bit Immediate }
7. Full wd. Index vs half wd index
8. Direct-Indirect in Fl Pt. vs. general Indirect loading, etc.

1 & 5 are almost incompatible

LA Full word answers all the above

(Fred.) → (1) compound with. orders are repugnant < extra decode time. 2 adders, multiple..

(2) — Simplicity of putting 2 halves together ...

code length — compensation ...

Kolsky	(1)	Full no prepost	1.0	
	(2)	Full pre or post	0.71	↓29%
	(3)	Half with "name"	0.61	↓18%
	(4)	Present Half	0.53	~(0.55)

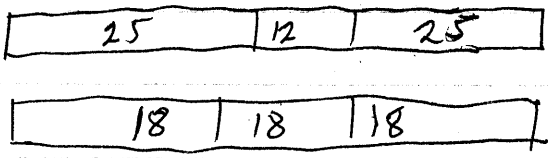
try with Pre store, Post load

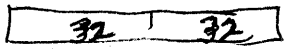
Friday:

Bit efficiency — but restrict future changes.

Store effective address — order —, — same as load geo - ..

Index Registers .... full vs half?





would rather have full with two fields than 2 halves.

V Δ L
V C L
V C R
V L R

which?

L = 25

R can be 18
count can be 18 ..

1. V=25 L=25 R=12
2. V=25 L=25 unused (12)
3. V=25, C=18, R=18
4. V=25, L=19, Δ=19
5. V=25, Δ=19, C=19 ← is Δ bit addr?
6. V25, L=25, Δ=12
7. V25, L25; C=12
8. V25, (op. code determined)37 (eg #3, #4, #5)
9. V25, L18, R18 (exchange)

1, 2, 6, 7
3, 4, 5, 9

~~10. V=25 V=25~~

10. V25, Δ25, C12