

Notes: 1st official meeting of 7000-X Committee

1st Meeting: concerning 7090 & its improvements

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7090 successor?

(Jones) if Transac S-4000 comes up - in

7097X compatibility: how compatible is it? "almost entirely"

- no copy add & carry
- copy skip
- load drum address

} still decoded treated as no ops.
 } 109 "compatibility switch" copy trap

compatibility { (1) an interpreter prog.
 { (2) some hardware. makes drum simulation possible

possible improved version

Memory may go to 2.0ms

presently using	200 mps	5 MC
are designed to use now.	167 mps	6 MC

mem cycle = 12 machine cycles

addr can start ER-0 or ER-6

7090 addr can be speeded up to 800 mps at least

~~addr~~ (presently do 300 mps)
 to go thru addr - but takes 1ms total

can skip 1's as well as 0's get twice as fast as now

↓ Jones' Table

Fixed Mpy: ERO, ER6

	Reset	2	3	4	6	12
skip 0 only	37.3 μs	34.4 μs	34.9	29.8	29.1	26.8
skip 0 + 1	4	28.4	28.2	25.4	24.5	23.9

↑ (2) can shift 2 bits 01 10 in addition
 can shift only 1 bit in addition
 above using random array of bits

(3) can start ERO, ER4, ER8 (slightly worse - takes whole cycle to shift 1 out)

(12) full asynchronous

Floating add: presently 7 cycles 10 preshifts, 4 post shifts (cost is 7.1 cycles)
 can do 3 cycles 4 preshifts, 1 post shifts (3.5 cycles)

(1 cycle = 2.4 μsec)

So a factor of 2 in Fl add with present circuits

→ can use more advanced circuits

Transfers, etc could be be dropped to 1 cycle.

Time charts of 7090 (see other sheet) question of memory read out in 1.4 μsec

question: 17 cycle × 0.2 = 1.4 μs data is available??

can

question: Mem. reliability?

noise?

KMPD: a big standard machine 48 bit being removed

also LARC-2: about 20 to 25 times 704 speed.

question of 705 III-IX? considered announced?

7090: Program compatibility with 709 - still important ground rule,
summary:

-- So can go about ~ 2 betas than present 7090

So, want ~~8 times~~ 8 times 709 present circuitry,
10 times " with beta circuitry,

II. - also consider improved I/O area.

STRETCH 1. { High speed disk file } can't connect thru reg'd. DSU
{ large capacity drum }

SEPD STRETCH 2. Serial disk file (binary addressing) - need a "locate instr."

3. SWIFT Tapes.

4. Console type serial reader-printer, (request is for printer now)

5. Stromberg Carlson printer (online)

6. Chain printer

7. High speed card reader. 2000 cpm

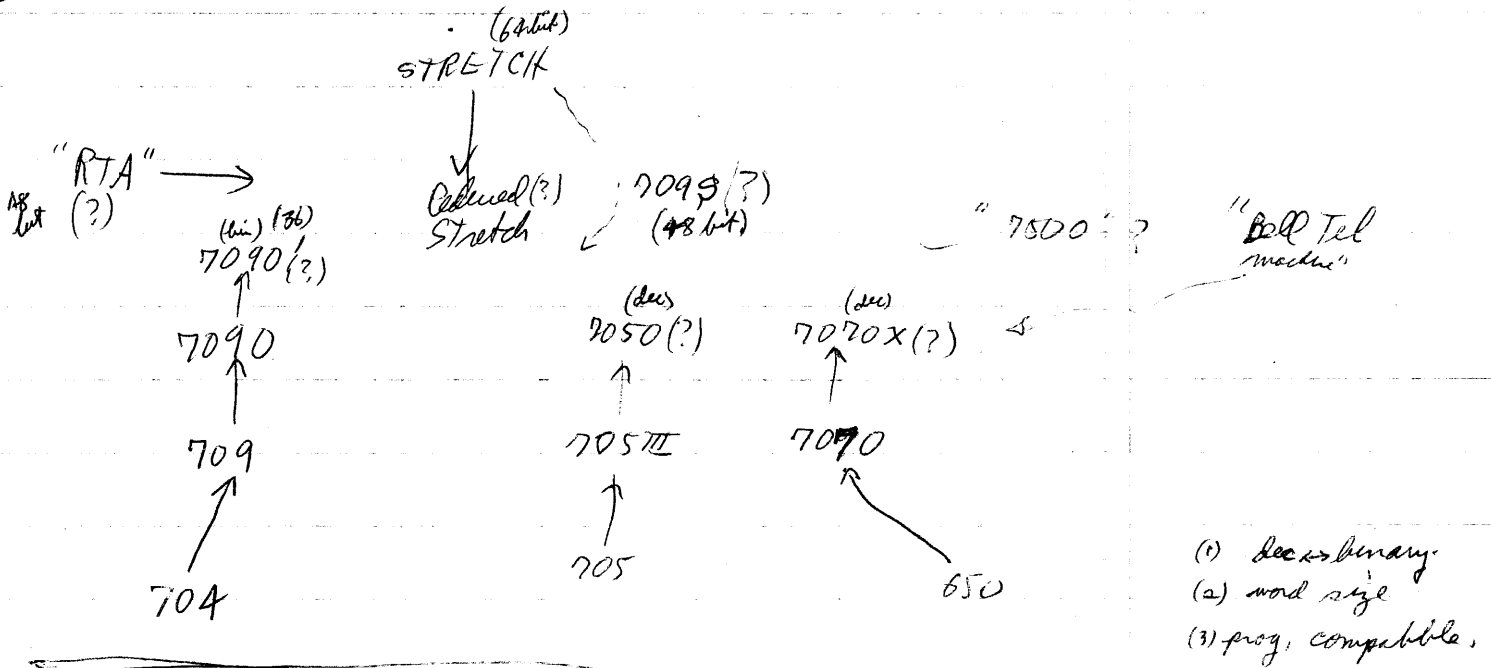
8. High speed punch.

SEPD + DP-P6-SE 9. "real-time package" - 36 lines to give & receive signals from channel - DSU. External signal interrupt

10. paper tape?

Question: I/O in general - Tapes to peripheral - ← See C. Poland

arena into which machine must go:



Goals - things to consider - short comings - etc.

"Holy grail" (Scientific - Commercial)

Exchange ?

Scratch-pad mem. ? (eg. 7095)

IDP - interrupt system.

Synch. asynch circuits.

Decimal-binary

checking how much?

- control word philosophy,
- logical ability.
- variable field
- multiprogramming
- indexing - no. + flexibility.

ref.
Cochran - Hopper
CORE switching circuits

other ones:

question:

- what about commercial?
- SABRE
- service bureau operation.
- multiprogramming - dump machine at high speed.

- (IDP) relative addressing
- multiple CPUs - machine-to-machine communication.
- priority control.

Pricing - very hard to figure - discontinuous

→ fixed word length is very hard on IDP-type probs. (36 bits is short)

interrupt system: (ref 7070) ←
- one on each channel,

Competition:

Univac LMR?

RTA

Trans S-4000

LARC-2

(?) IBM-310 - multi machine (Jim McDonald) ref ←
IDP processor - 2 ^{not} machines Mogan Endicott
& machine to file
better than any other IDP now,

Bell tel machine (Bill English) & ref
(Jerry Walters)

Transac to United Aircraft - (Jerry Conway) ←
Fortran?

Weather: starts with 7 stations - grows, 5000 wd/min

RCA - Sperry Rand - Stanley Carlson

IBM - Western Elec, - ?

Phileo

United Aircraft - Transac weather - (10974)

ITT

Cook Electronics