

Module production at Heidelberg

Responsibilities:

- **assembly and test of 60 F- modules (5 m)**

- **September 28: Series module # 12 finished**
→ *20% reached*

Full production speed reached since module 3

Status of module production:

Production:

preseries module: april 13 – may 6

start series production: may 9

break after module 6 for 6 weeks due to lack of material:

(delay in straw delivery and wire quality)

production resumed 20.8.

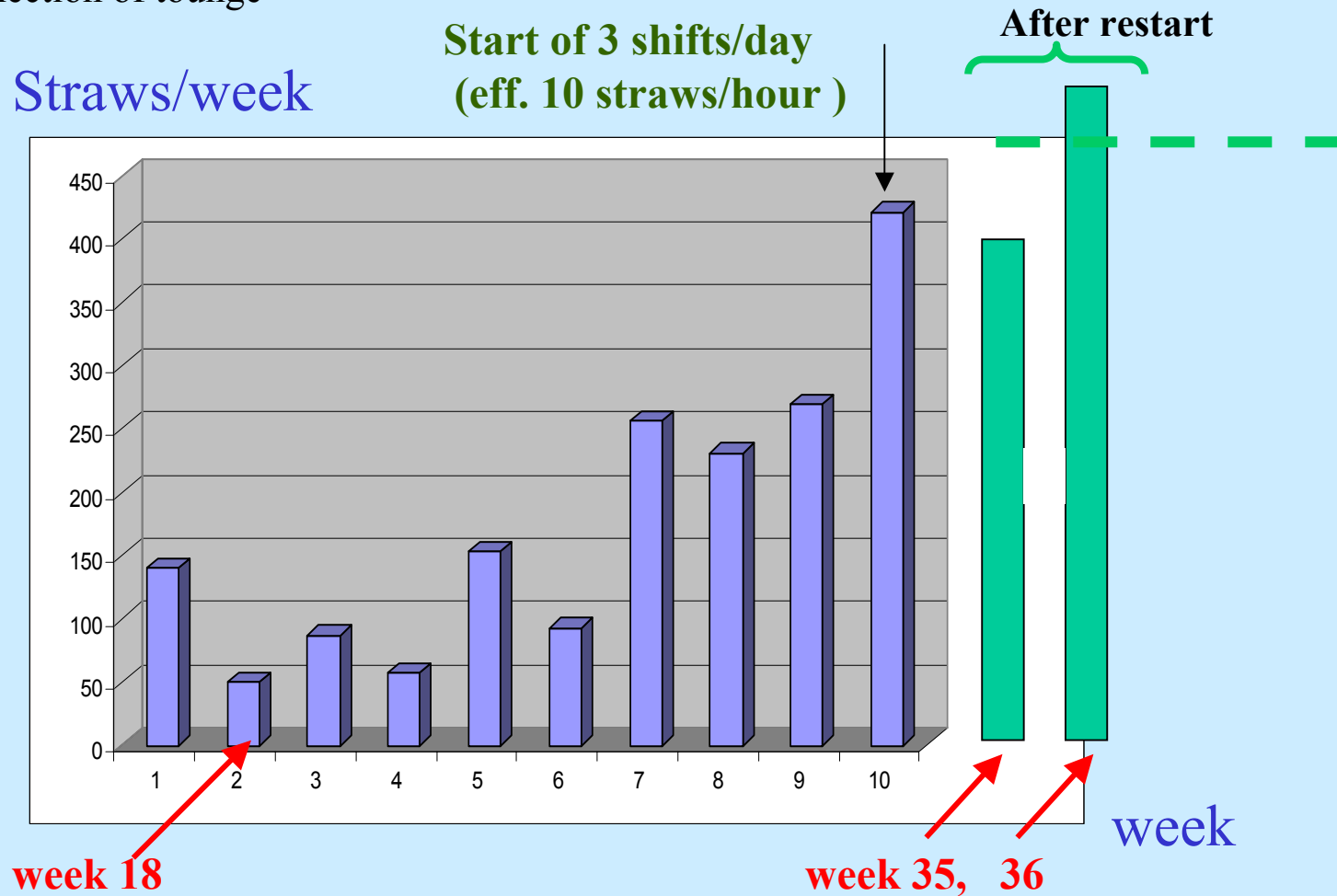
*Last 4 modules before and last 4 after the break needed
5 working days each → this is the planned production speed*

*→ Safe extrapolation for production plan possible: **1 module
every 5 working days***

Delayed start but smooth and fast production reached

Strawproduction HD

- now very stable after many improvements of the machine, new crimping technique for connection of tounge



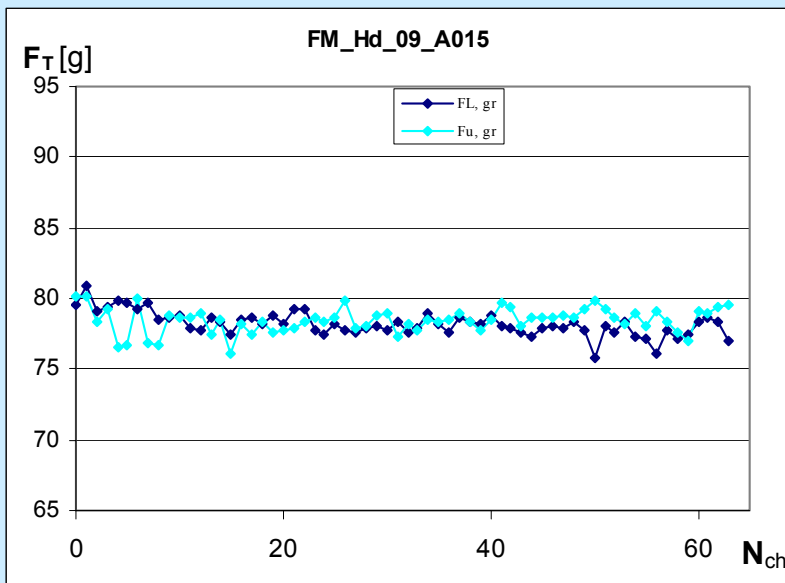
- stable straw production since 6 weeks, ~14 straws finished/hour.
- production is done by two half time people (students)

Some experiences meanwhile:

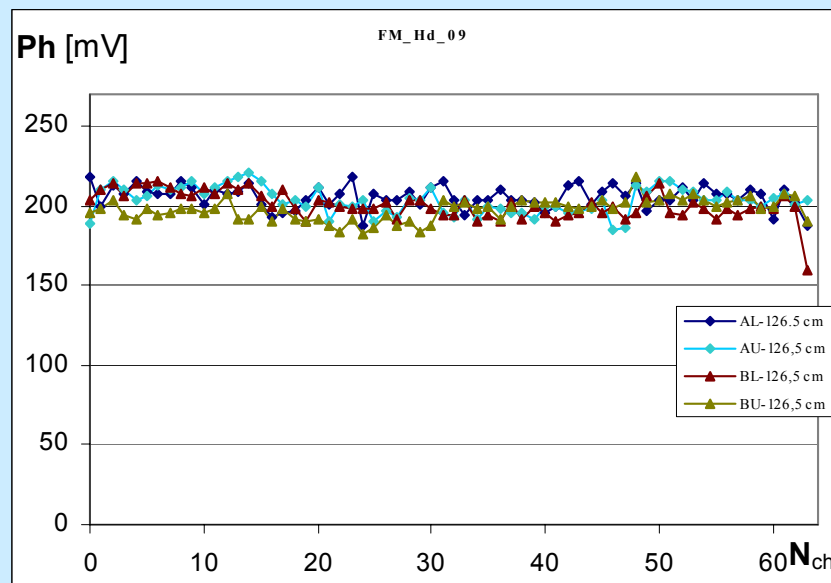
Overall status of production techniques very satisfactory and under control

Quality of modules is good → see measurements

Module 9:
wire tension



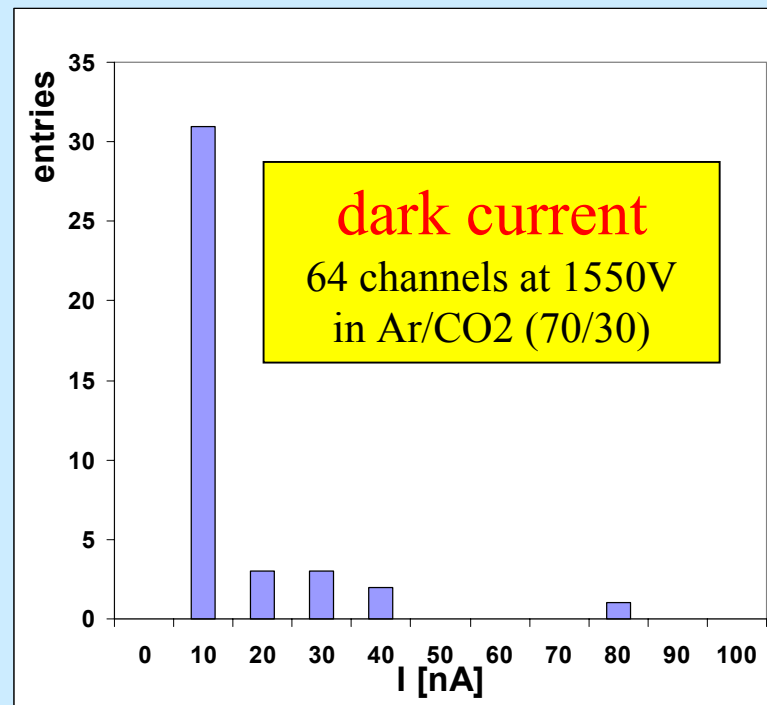
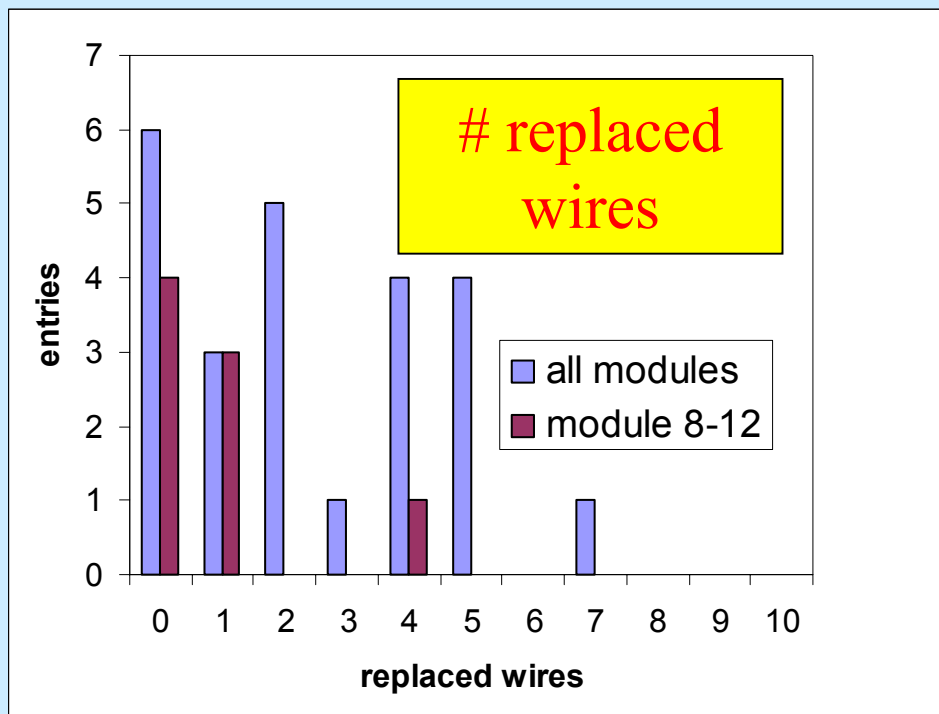
Module 9:
pulse height



Module statistics:

Acceptance criteria for wires (before closure of module)

- *dark current < 100nA (typical <5nA)*
- *wire tension within +/- 5g of nominal value*



3 out of 3072 channels not operational

Manpower

**2 experienced technicians (wiring, glueing)
(+ replacement in holiday period)
1 physicist for all tests and help in assembly**

2-3 students (40 hours/month) for straw confectioning and soldering

→ Adequate to do the job in time

Overall production schedule:

2004: 12 modules finished
+ 11 modules (55 working days left effectively)

→ 23 modules in 2004 (40%)

2005: 37 modules left, needs 185 working days
(we have about 230 days in a full year)

→ We will safely finish production before end of 2005
*(assuming no major problems in material delivery etc... ***)*