

## General

All lines in Hy-Tek's .hy3 files are 130 characters in length not including the carriage return and line feed. The first two characters of each line are the Line Identifier while the last two are the checksum.

### [0:1,2] Line Identifier

- A1 File Descriptor
- B1 Meet Information
- B2 Meet Address
- B3 Meet Contact
- C1 Swim Team Name Information
- C2 Swim Team Address Information
- C3 Swim Team Contact Information
- D1 Swimmer Information
- D2 Swimmer Information
- D3 Swimmer Information
- D4 Swimmer Information
- D5 Swimmer Information
- E1 Individual Event Entry Information
- E2 Individual Event Results
- F1 Relay Event Entry Information
- F2 Relay Event Results
- Gx Split Times
- H1 DQ Description

## Checksum

Each line in the .hy3 file is covers by a checksum value. This field can be used to verify the contents of the line have not been corrupted. This value must be computed properly in order for Hy-Tek to import a particular line.

1. Sum all of the even characters (0-126) excluding the checksum characters (127-128). This is the even sum (evnSum).
2. Sum all of the odd characters (1-127) excluding the checksum characters (127-128). This is the odd sum (oddSum).
3. Multiply the odd sum by two.  
$$\text{oddSum} = 2 * \text{oddSum}$$
4. Add the two sums together  
$$\text{sum} = \text{eveSum} + \text{oddSum}.$$
5. Divide by 21 and take only the integer portion (no rounding).  
$$\text{result} = (\text{int}) \text{sum}/21$$
6. Add 205 to the result.  
$$\text{result} = \text{result} + 205$$

Some things to note about the calculation:

Each line is actually 130 characters in length (128 characters of "data" + 2 checksum characters)

To match the software I used zero based indexing (0, 1, 2, ..., 128, 129) so my odd and even characters are different than what was described by Joe.

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Step 1.) Excluding the checksum characters sum all of the even (0, 2, 4, ...,124, 126) characters, this is sumEvn  
$$\text{sumEvn} = \text{val0} + \text{val2} + \dots + \text{val124} + \text{val126}$$

Step 2.) Excluding the checksum characters sum twice the value all of the odd (1, 3, 5, ...,125, 127) characters, this is sumOdd.  
$$\text{sumOdd} = 2*\text{val1} + 2*\text{val2} + \dots + 2*\text{val125} + 2*\text{val127}$$

Step 3.) Add the two sums (even and odd) together  
$$\text{sum} = \text{sumEvn} + \text{sumOdd}$$

Step 4.) Divide by 21 and only take the integer portion (no rounding)  
$$\text{result} = (\text{int}) \text{sum}/21$$

Step 5.) Now add 205 to the result

$$\text{sum2} = \text{result} + 205$$

Step 6.) The checksum digits are ones and tens digits from sum2 in reverse order

$$\text{checksum} \Rightarrow \text{sum2}(\text{ones digit}) \text{ sum2}(\text{tens digit})$$

A1 Line

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## Common Formats

### Blanks

All blank spaces should be filled with the ASCII character for 'space' (0x20). If a field is undefined but contains a known or set of known values these will be indicated in the description.

### Times

Any field that records a time should have the decimal and two places to the right of the decimal (i.e. 3.43). If the field is not used it will be left blank (filled with ASCII spaces), have a single right justified zero (ASCII 0x30) or a zero (null) time (0.00). The description should indicate which form to use.

### Fees

Fees follow the same rules as times as stated above. Refer to the description for proper use.

### Course

Y	Yards
S	Short Course Meters
L	Long Course Meters

### Stroke

A	Freestyle
B	Backstroke
C	Breaststroke
D	Butterfly
E	Medley

For Medley the event type determines whether it is an Individual Medley (E1) or Medley Relay (F1). Similarly and F1 event for Freestyle indicates a Freestyle Relay.

## A1 – File Descriptor

This line provides a description of who (what software) created the file, what time (and data) the file was created, who the software is licensed to and most importantly what type of data is contained in the file.

			Description
0:1	2	A1	LINE IDENTIFIER. File Descriptor
2:3	2		FILE FORMAT/TYPE. This field identifies the format (content) of the remainder of the file. The following are the known .hy3 types: 02 – Meet Entries 03 – Roster/Athlete Information 07 – Meet Results
128:129	2		CHECKSUM

B1 – Meet Information – Name

B2 – Meet Host Information

C1 – Team Information – Name

C2 – Team Information – Address

C3 – Team Information – Contact Data

D1 – Swimmer Information – Name

D2 – Swimmer Information

D3 – Swimmer Information

D4 – Swimmer Information

D5 – Swimmer Information

D6 – Swimmer Information

D7 – Swimmer Information

## E1 – Event Entry/Result

The E1 line has two formats; one for the Entry file (02) and one for the Result file (07). A majority of the line is the same with the exceptions highlighted in yellow in the following table.

Loc.	Size		Description
0:1	2	E1	LINE IDENTIFIER. Individual Event Entry/Result
2	1		GENDER. This is the gender of the swimmer. F: Female M: Male
3:7	5		SWIMMER ID. For entries this is from the Team's database. For results this is from the meet's database. This field is right aligned and padded with spaces. In either case (entry/result) this field should match the swimmer ID in the D1 record.
8:12	5		LAST NAME ABBR. First five characters of the swimmers last name. This field is left aligned, space padded and can include special characters.
13	1		EVENT GENDER. This specifies the gender for the event. F: Female G: Male
14	1		GENDER TYPE. This specifies the display format for the gender. F: Womens G: Girls M: Mens B: Boys
15:16	2		Undefined. Fill with the space character (0x20)
17:20	4		DISTANCE. This is the distance for the event. This field is right aligned.
21	1		STROKE. This defines the stroke for the event. A: Freestyle B: Backstroke C: Breaststroke D: Butterfly E: Individual Medley
22:24	3		AGE LOWER. This defines the lower age range for the event. A value of zero (0) indicates 'UNDER'. This field is right aligned.
25:27	3		AGE UPPER. This defines the upper age limit for the event. A value of 109 indicates 'OVER'. If AGE LOWER = 0 and AGE UPPER = 109 it indicates it is an OPEN/SENIOR event. This field is right aligned
28:29	2		Undefined. Fill with the space character (0x20)

30:31	2	OS	Undefined for Entry, Fill with the space character (0x20). For results file this field is filled with "OS".
32:37	6		EVENT FEE. Byte location 35 contains the decimal point. If no fee the default value is 0.00. This field is right aligned.
38:40	3		EVENT NUMBER. This is the number of the event. This field is right aligned.
41:42	2		Undefined. Fill with the space character (0x20)
43:49	7		SEED TIME 1. This is the swimmers seed time. If entered has two decimal places with the decimal point in location 47. If it is not used a single zero (0) in the last location. For a Result line it appears that the field is filled with the same value as SEED TIME 2.
50	1		SEED TIME 1 COURSE. This specifies the course for the seed time. See "Course" under Common Formats section.
51	1		Undefined. Fill with the space character (0x20)
52:58	7		SEED TIME 2. This is the swimmers seed time. If entered has two decimal places with the decimal point in location 56. If it is not used a single zero (0) in the last location.
59	1		SEED TIME 1 COURSE. This specifies the course for the seed time. See "Course" under Common Formats section.
60:67	8		Unknown. Fill with space character (0x20) for Entry line. contains a decimal value for Result line. For the result file a decimal point is in location 65. Observed result files have the field filled with 0.00.
68:75	8		Unknown. Fill with space character (0x20) for Entry line. contains a decimal value for Result line. For the result file a decimal point is in location 73. Observed result files have the field filled with 0.00.
76:78	3		Undefined. Fill with the space character (0x20)
79	1	N	Unknown. Fill with the space character for Entry line. Fill with 'N' for result line.
80	1	N	Unknown. Fill with the space character for Entry line. Fill with 'N' for result line.
81:95	15		Undefined. Fill with the space character (0x20)
96		N	Unknown. Fill with the space character for Entry line. Fill with 'N' for result line.
97:127	21		Undefined. Fill with the space character (0x20)
128:129	2		CHECKSUM.



## E2 – Event Results

F1 – Relay Event Entry/Result

Location 83 is the exhibition indication 'X'

## F2 – Relay Event Result

### F3 – Relay Event Swimmers

(Mike – You have loc 15 marked as gender type. Have you seen the B, G designators in this field? Just asking because I have only come across F and M which would indicate event gender only.)

Loc.	Size		Description
0:1	2	F3	LINE IDENTIFIER. Relay Event Entry/Result
2	1		SWIMMER 1 GENDER. This is the gender of the swimmer. F: Female M: Male
3:7	5		SWIMMER 1 ID. For entries this is from the Team's database. For results this is from the meet's database. This field is right aligned and padded with spaces. In either case (entry/result) this field should match the swimmer ID in the D1 record.
8:12	5		SWIMMER 1 LAST NAME ABBR. First five characters of the swimmers last name. This field is left aligned, space padded and can include special characters.
13	1		SWIMMER 1 EVENT GENDER. This specifies the gender for the event. F: Female G: Male
14	1	1	RELAY LEG 1. This number represents the relay leg or swimmer number.
15	1		SWIMMER 2 GENDER. This is the gender of the swimmer. F: Female M: Male
16:20	5		SWIMMER 2 ID. For entries this is from the Team's database. For results this is from the meet's database. This field is right aligned and padded with spaces. In either case (entry/result) this field should match the swimmer ID in the D1 record.
21:25	5		SWIMMER 2 LAST NAME ABBR. First five characters of the swimmers last name. This field is left aligned, space padded and can include special characters.
26	1		SWIMMER 2 EVENT GENDER. This specifies the gender for the event. F: Female G: Male
27	1	2	RELAY LEG 2. This number represents the relay leg or swimmer number.
28	1		SWIMMER 3 GENDER. This is the gender of the swimmer. F: Female M: Male
29:33	5		SWIMMER 3 ID. For entries this is from the Team's

			database. For results this is from the meet's database. This field is right aligned and padded with spaces. In either case (entry/result) this field should match the swimmer ID in the D1 record.
34:38	5		SWIMMER 3 LAST NAME ABBR. First five characters of the swimmers last name. This field is left aligned, space padded and can include special characters.
39	1		SWIMMER 3 EVENT GENDER. This specifies the gender for the event. F: Female G: Male
40	1	3	RELAY LEG 3. This number represents the relay leg or swimmer number.
41	1		SWIMMER 4 GENDER. This is the gender of the swimmer. F: Female M: Male
42:46	5		SWIMMER 4 ID. For entries this is from the Team's database. For results this is from the meet's database. This field is right aligned and padded with spaces. In either case (entry/result) this field should match the swimmer ID in the D1 record.
47:51	5		SWIMMER 4 LAST NAME ABBR. First five characters of the swimmers last name. This field is left aligned, space padded and can include special characters.
52	1		SWIMMER 4 EVENT GENDER. This specifies the gender for the event. F: Female G: Male
53	1	4	RELAY LEG 4. This number represents the relay leg or swimmer number.
54	1		SWIMMER 5 GENDER. This is the gender of the swimmer. F: Female M: Male
55:59	5		SWIMMER 5 ID. For entries this is from the Team's database. For results this is from the meet's database. This field is right aligned and padded with spaces. In either case (entry/result) this field should match the swimmer ID in the D1 record.
60:64	5		SWIMMER 5 LAST NAME ABBR. First five characters of the swimmers last name. This field is left aligned, space padded and can include special characters.
65	1		SWIMMER 5 EVENT GENDER. This specifies the gender for the event. F: Female G: Male
66	1	5	RELAY LEG 5. This number represents the relay leg or

			swimmer number.
67	1		SWIMMER 6 GENDER. This is the gender of the swimmer. F: Female M: Male
68:72	5		SWIMMER 6 ID. For entries this is from the Team's database. For results this is from the meet's database. This field is right aligned and padded with spaces. In either case (entry/result) this field should match the swimmer ID in the D1 record.
73:77	5		SWIMMER 6 LAST NAME ABBR. First five characters of the swimmers last name. This field is left aligned, space padded and can include special characters.
78	1		SWIMMER 6 EVENT GENDER. This specifies the gender for the event. F: Female G: Male
79	1	6	RELAY LEG 6. This number represents the relay leg or swimmer number.
80	1		SWIMMER 7 GENDER. This is the gender of the swimmer. F: Female M: Male
81:85	5		SWIMMER 7 ID. For entries this is from the Team's database. For results this is from the meet's database. This field is right aligned and padded with spaces. In either case (entry/result) this field should match the swimmer ID in the D1 record.
86:90	5		SWIMMER 7 LAST NAME ABBR. First five characters of the swimmers last name. This field is left aligned, space padded and can include special characters.
91	1		SWIMMER 7 EVENT GENDER. This specifies the gender for the event. F: Female G: Male
92	1	7	RELAY LEG 7. This number represents the relay leg or swimmer number.
93	1		SWIMMER 8 GENDER. This is the gender of the swimmer. F: Female M: Male
94:98	5		SWIMMER 8 ID. For entries this is from the Team's database. For results this is from the meet's database. This field is right aligned and padded with spaces. In either case (entry/result) this field should match the swimmer ID in the D1 record.
99:103	5		SWIMMER 8 LAST NAME ABBR. First five characters of the swimmers last name. This field is left aligned, space padded and can include special characters.

104	1		SWIMMER 8 EVENT GENDER. This specifies the gender for the event. F: Female G: Male
105	1	8	RELAY LEG 8. This number represents the relay leg or swimmer number.
106:127	21		Undefined. Fill with the space character (0x20)
128:129	2		CHECKSUM.