Original HURDAT format

Link to the Best Track

This documentation is based upon "A tropical cyclone data tape for the North Atlantic basin, 1886-1983: Contents, limitations, and uses", NOAA Technical Memorandum NWS NHC 22 (1984) written by B.R. Jarvinen, C.J. Neumann, and M.A.S. Davis. The HURDAT is the 'best track' data set (so named as it is the 'best' track and intensity estimates of tropical cyclones as determined in a post-analysis of all available data) for the North Atlantic maintained by the TPC.

There are three basic types of datalines in the HURDAT for each storm. :

- **HEADER:**

```
92620 08/16/1992 M=13  2 SNBR= 899 ANDREW      XING=1 SSS=4
Card# MM/DD/Year Days S# Total#... Name........US Hit.Hi US category
```

- **DAILY DATA:**

```
92580 04/22S2450610  30 1003S2490615  45 1002S2520620  45 1002S2550624  45 1003*
Card# MM/DD&LatLongWindPress&LatLongWindPress&LatLongWindPress&LatLongWindPress
```

- **TRAILER:**

```
92760 HRCFL4BFL3 LA3
Card# TpHit.Hit.Hit.
```

- **HEADER:**
  - **Card# =** Sequential card number starting at 00005 in 1851
  - **MM/DD/Year =** Month, Day, and Year of storm
  - **Days =** Number of days in which positions are available (note that this also means number of lines to follow of Daily Data and then the one line of the Trailer)
  - **S# =** Storm number for that particular year (including subtropical storms)
  - **Total# =** Storm number since the beginning of the record (since 1851)
  - **Name =** Storms only given official names since 1950
  - **US Hit =**
    - '1' = Made landfall (i.e., the center of the cyclone crossed the coast) on the continental United States as a tropical storm or hurricane,
    - '0' = did not make a U.S. landfall
  - **Hi US category =**
    - '0' = Used to indicate U.S. tropical storm landfall, but this has not been utilized in recent years
    - '1' to '5' = Highest Saffir-Simpson Hurricane Scale impact in the United States based upon extimated maximum sustained surface winds produced at the coast. See scale below.

- **DAILY DATA:**
  - **Card# =** As above.
  - **MM/DD =** Month and Day
  - Positions and intensities are at 00Z, 06Z, 12Z, 18Z
    - **& =**
      - '*' (tropical cyclone stage),
      - 'S' (Subtropical stage)
      - 'E' (extratropical stage)
      - 'W' (wave stage - rarely used)
      - 'L' (remanent Low stage - rarely used)
    - **Lat =** Latitude of storm: 24.5N
    - **Long =** Longitude of storm: 61.0W
    - **Wind =** Maximum sustained (1 minute) surface (10m) windspeed in knots (these are to the nearest 10 knots for 1851 to 1885 and to the nearest 5 kt for 1886 onward).
    - **Press =** Central surface pressure of storm in mb (if available). Since 1979, central pressures are given everytime even if a satellite estimation is needed.

- **TRAILER:**

Data Sets
- Field Program Data
- Numerical Models
- Radar Data
- Re-Analysis Project
- Surface Wind Analyses
- Aircraft Data Formats

Links of Interest
- Hurricane Field Program
- Current Hurricane Data
- Hurricane FAQ
- HRD Projects
- HRD Calendar
- HRD Blog
- External Links

AOML Tools & Resources
- AOML Home
- Contact Information
- Search for Staff
- Search Publications
- AOML Newsletter
- AOML Weather

Employee Tools
- Check Email

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- **Card# =** As above.
- **Tp =** Maximum intensity of storm
  - 'HR' = hurricane
  - 'TS' = tropical storm
  - 'SS' = subtropical storm
- **Hit =** The impact of the hurricane on individual U.S. states ('LA' = Louisiana, etc.) based upon the Saffir-Simpson Scale category (through the estimate of the maximum sustained surface winds for each state). See scale below. Occasionally, a hurricane will cause a hurricane impact (estimated maximum sustained surface winds) in an inland state. To differentiate these cases versus coastal hurricane impacts, these inland hurricane strikes are denoted with an "I" prefix before the state abbreviation. States that have been so impacted at least once during this time period include Alabama (IAL), Georgia (IGA), North Carolina (INC), Virginia (IVA), and Pennsylvania (IPA). The Florida peninsula, by the nature of its relatively landmass, is all considered as coastal in this database.
  Note that Florida and Texas are split into smaller regions:
  - 'AFL' = Northwest Florida
  - 'BFL' = Southwest Florida
  - 'CFL' = Southeast Florida
  - 'DFL' = Northeast Florida
  - 'ATX' = South Texas
  - 'BTX' = Central Texas
  - 'CTX' = North Texas

Saffir-Simpson Scale

Saffir-Simpson Category	Maximum sustained wind speed		
	mph	m/s	kts
1	74-95	33-42	64-82
2	96-110	43-49	83-95
3	111-130	50-58	96-113
4	131-155	59-69	114-135
5	156+	70+	136+

FORTRAN Code to read in HURDAT data
example by Bill Thorson

```
      integer   year(200),month(200),day(200),hour(200),
     +     vmax(200),mslp(200)
      real      lat(200),lon(200)
      character state(200),stname*11,what*2
      character arg*60

      if (iargc() .ne. 1) then
         print *, 'usage: atlread track-file'
         goto 1000
      endif
      call getarg(1,arg)
      open(unit=3,file=arg,status='old',err=1)
      goto 2
1     print *, 'cannot open track file ',arg
      goto 1000
2     continue

10    read (3,11,end=100) imonth,iday,iyear, nbrdays, istmnr,
     +  stname,istrength
11      format(6x,i2,x,i2,x,i4,3x,i2,x,i2,11x,a11,12x,i1)

        do 20 i = 1, nbrdays
           j = (i-1)*4+1
           read (3,101) imonth, iday,
     +          (state(k),lat(k),lon(k),vmax(k),mslp(k),k=j,j+3)
101        format(6x,i2,x,i2,4(a1,f3.1,f4.1,x,i3,x,i4))

           do 15 k=j,j+3
              year(k) = iyear
              month(k) = imonth
              day(k) = iday
              hour(k) = mod(k+3,4)*6
              if (vmax(k) .eq. 0) vmax(k)=-99
              if (mslp(k) .eq. 0) mslp(k)=-999
15         continue
20      continue
        read (3,102) what
102     format(6x,a2)

        do 30 i=1,j+3
           if (lat(i).ne.0.0 .and. lon(i).ne.0.0) then
              print 103, iyear,istmnr,stname,
     +             year(i),month(i),day(i),hour(i),
     +             lat(i),lon(i),vmax(i),mslp(i)
103           format(i4,i2.2,1x,a10,1x,i4,3(1x,i2),1x,f5.1,1x,f6.1,1x,
     +             i3,1x,i4)
           endif
30      continue
      goto 10
```

```
100  close(3)
1000 end
```