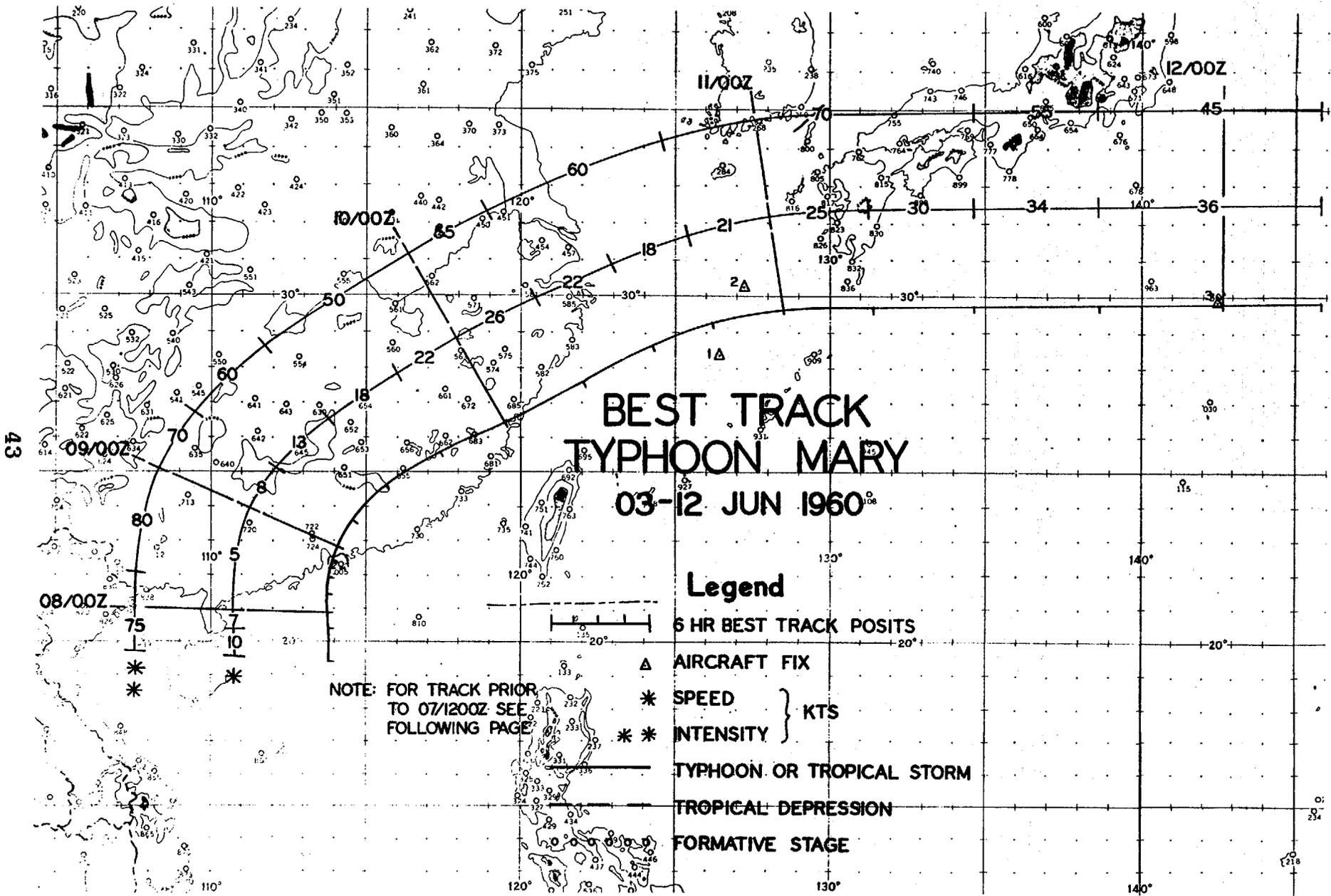


C. TYPHOON MARY (031800Z-120600Z JUNE 1960)

MARY, better known as "Bloody Mary", performed in a typically feminine manner; however, not as a typical typhoon. A trough of low pressure, oriented NE to SW, lay off the E coast of Taiwan for several days, and slowly extended into the South China Sea. By 020000Z a weak circulation was evident at the extreme SW portion of this trough in the South China Sea, about 200 mi W of northern Luzon. During this time a wind maximum of 30 kts had formed at 3000 ft at 9N, from a point W of 100E, to 115E. By 031200Z this wind maximum had moved to a position such that it appeared to be feeding into MARY from the S and W. The maximum winds then appeared to be 150 to 200 mi to the S and W of the low center. The first warning was issued on MARY as a storm at 031800Z. Its position was near 15N 114E, with maximum winds of 35 kts from the E through the SW, 150 to 250 mi from the center, and with an observed low pressure of 996 mb. MARY appeared to be moving W at 6 kts. The low continued to intensify and turn slowly to the NW, and then N after 041800Z. From 041800Z to 061800Z the average speed was only 2 or 3 kts and the wind speeds increased to 60 kts. After 061800Z the low moved N toward Hong Kong at an average speed of 7 kts with surface winds of 60 kts or more. It probably became a typhoon between 070000Z and 071200Z. Typhoon MARY passed less than 20 mi to the W of Hong Kong between 081200Z and 081800Z. It was at this time that the appellation "Bloody" was attached (see damage report in Chapter 6). Over land this typhoon rapidly decreased in intensity to 50 kts, increased in speed from an average of 7 to 26 kts by 100600Z, and moved in a NE direction from 090600Z to 101800Z. Between 101200Z and 101800Z the low intensified into a typhoon again with winds of 70 kts or more. Now moving E, MARY passed 170 mi N of Okinawa, 70 mi S of Kyushu and continued E, increasing to a speed of 36 kts by 111800Z. The typhoon decreased to tropical storm intensity by 111800Z and it became extra-tropical by 120600Z when the final warning was issued.

MARY traveled 2400 mi during the 8 and one half days that warnings were issued, at an average speed of 12 kts or 284 mi per day. The minimum speed was 2 kts 5-6 June, and the maximum speed was 36 kts on 12 June. The typhoon extended through the 200 mb level while in the vicinity of Hong Kong, and moved through the 200 mb ridge from the S to N in that area.

Only 3 reconnaissance fixes were made on MARY, none of the 3 being made in the South China Sea. Therefore, in the interest of a more accurate and complete post-analysis, the following parameters, normally obtained by means of reconnaissance fixes, were computed: minimum sea level pressure, maximum surface wind, minimum 700 mb height, and in some instances, maximum 700 mb wind. The computed values, which are contained in the "Reconnaissance Aircraft Fixes" table, were computed for 1800Z, 3 through 11 June and for 0600Z, 12 June. Surface pressures for MARY as a storm were secured by graphing pressure against distance through two or more stations or ship reports near the low center. At least two such graphs were made for each pressure presented. This presumes a linear pressure decrease toward the center of the storm. Tests of this system on storms with known center values indicated an accuracy of 2 mb. This procedure cannot be used for typhoons. The 700 mb height values during the life of MARY as a storm were computed by the use of tables and WBAN-31A, using the estimated surface temperature and dew point, and the calculated center pressure. Data for that period MARY was a typhoon was secured from the Wachholz graph, discussed in Chapter VII.



BEST TRACK TYPHOON MARY 03-12 JUN 1960

Legend

- 6 HR BEST TRACK POSITS
- △ AIRCRAFT FIX
- * SPEED } KTS
- ** INTENSITY }
- TYPHOON OR TROPICAL STORM
- TROPICAL DEPRESSION
- FORMATIVE STAGE

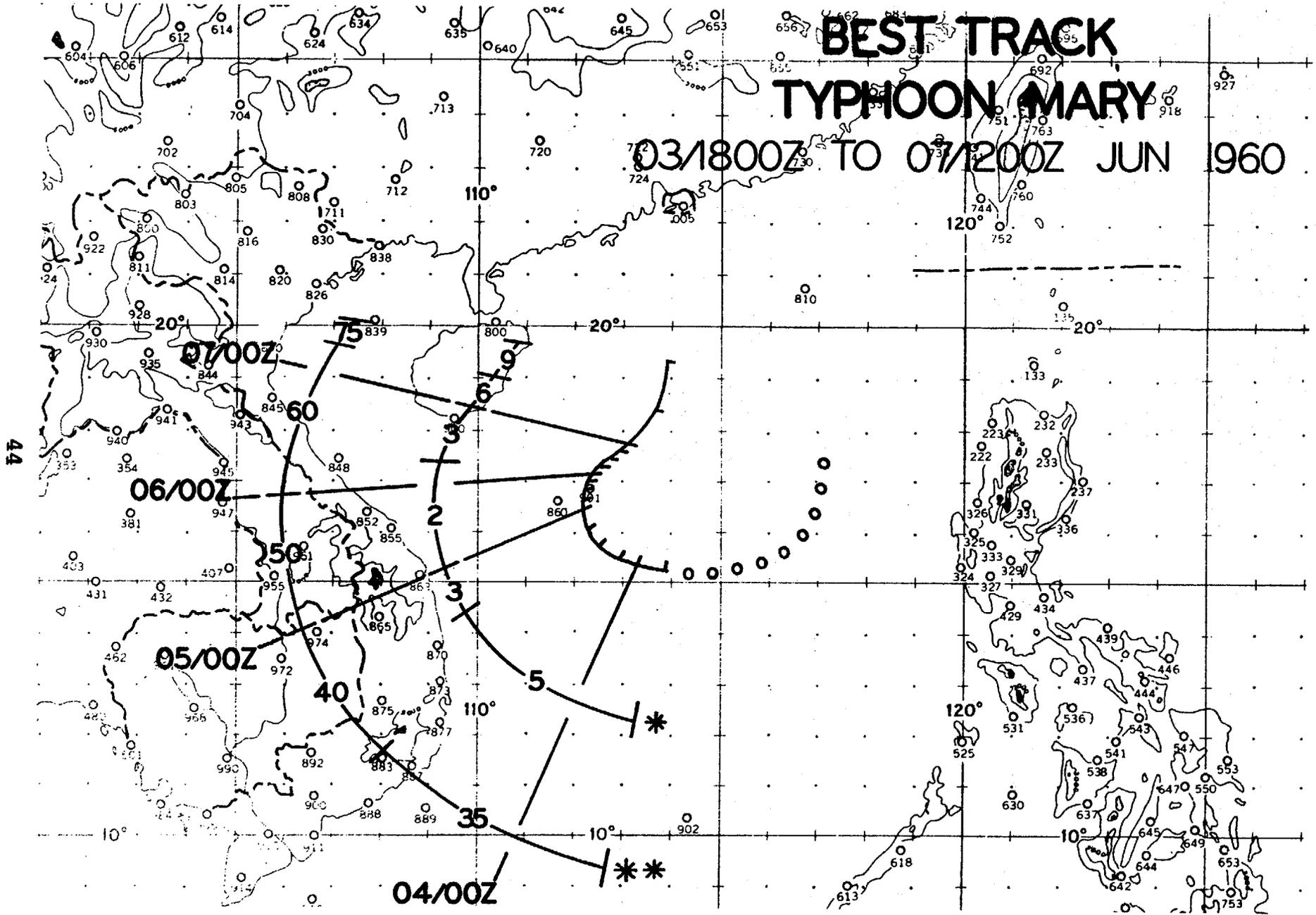
NOTE: FOR TRACK PRIOR
TO 07/200Z SEE
FOLLOWING PAGE

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01
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BEST TRACK TYPHOON MARY

03/1800Z TO 07/2000Z JUN 1960



RECONNAISSANCE AIRCRAFT FIXES - TYPHOON MARY

FIX NO.	TIME	LAT.	LONG.	UNIT METHOD & ACCY	MIN SLP MBS	MAX SFC WND	MIN 700MB HGT	MAX 700MB WND	700MB TT/Td (°C)	EYE CHARACTERISTICS
*	031800Z	15.2N	114.0E	CALC	994	35	9928	--	---	-----
*	041800Z	16.2N	112.3E	CALC	990	40	9859	--	---	-----
*	051800Z	16.9N	112.4E	CALC	992	50	9957	--	---	-----
*	061800Z	17.7N	112.9E	CALC	993	60	9964	55	---	-----
*	071800Z	20.3N	113.9E	CALC	981	75	9650	70	---	-----
*	081800Z	22.5N	114.0E	CALC	975	80	9500	70	---	-----
*	091800Z	25.6N	117.2E	CALC	991	50	9879	--	---	-----
1	101416Z	28.3N	126.3E	USN----	--	60	---	--	---	-----
*	101800Z	29.3N	126.1E	CALC	985	70	9525	65	---	-----
2	102103Z	30.2N	127.1E	56-P-05	988	65	9590	78	16/10	CIRC NO WALL CLDS
*	111800Z	29.8N	138.7E	CALC	992	55	9787	55	---	-----
3	112330Z	29.9N	142.5E	56-P-05	995	35	---	--	---	NO WALL CLDS
*	120600Z	29.9N	146.9E	CALC	996	45	9829	--	---	-----

* VARIOUS PARAMETERS CALCULATED DUE TO LACK OF RECONNAISSANCE.

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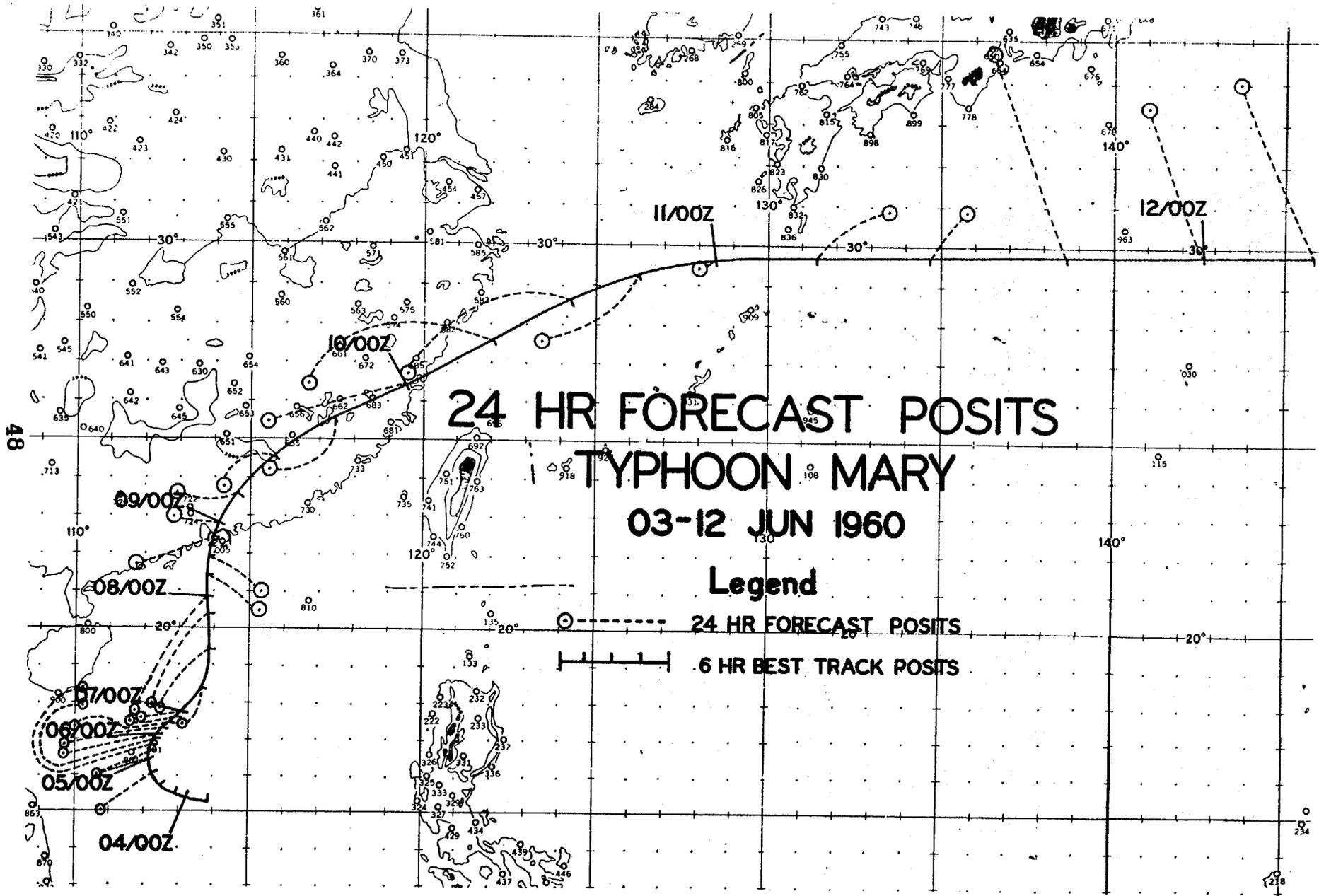
TYPHOON MARY 03-12 JUNE 1960
POSITION AND FORECAST VERIFICATION DATA

DTG	STORM POSITION		24 HR. ERROR		48 HR. ERROR	
	IAT.	LONG.	DEG.	DISTANCE	DEG.	DISTANCE
031800Z	15.2N	114.0E	-	-	-	-
040000Z	15.3N	113.4E	-	-	-	-
040600Z	15.5N	113.0E	-	-	-	-
041200Z	15.8N	112.6E	-	-	-	-
041800Z	16.1N	112.3E	233	109	-	-
050000Z	16.4N	112.2E	257	96	-	-
050600Z	16.6N	112.2E	251	98	-	-
051200Z	16.8N	112.3E	308	134	-	-
051800Z	16.9N	112.3E	299	143	258	280
060000Z	17.1N	112.3E	261	149	262	240
060600Z	17.3N	112.5E	262	157	257	228
061200Z	17.5N	112.7E	264	118	292	265
061800Z	17.7N	112.9E	260	165	281	274
070000Z	17.9N	113.1E	238	72	260	315
070600Z	18.5N	113.4E	199	68	257	334
071200Z	19.3N	113.7E	218	122	256	302
071800Z	20.3N	113.9E	216	176	244	382
080000Z	20.9N	113.9E	212	218	208	394
080600Z	21.4N	113.9E	127	93	210	280
081200Z	21.9N	113.9E	127	94	221	305
081800Z	22.4N	113.9E	252	126	214	330
090000Z	22.9N	114.1E	273	68	205	333
090600Z	23.6N	114.6E	265	93	137	167
091200Z	24.6N	115.6E	240	93	134	118
091800Z	25.6N	117.2E	232	133	244	347
100000Z	26.5N	119.4E	253	228	251	377
100600Z	27.6N	122.0E	257	292	252	515
101200Z	28.6N	124.2E	244	283	250	535
101800Z	29.3N	126.1E	236	179	251	505
110000Z	29.7N	128.5E	225	35	259	475
110600Z	29.8N	131.4E	058	120	267	468
111200Z	29.8N	134.8E	048	100	265	525
111800Z	29.8N	138.7E	340	321	268	473
120000Z	29.9N	142.8E	336	231	292	345

TYPHOON MARY 03-12 JUNE 1960
POSITION AND FORECAST VERIFICATION DATA (CONT'D)

DTG	STORM POSITION		24 HR. ERROR	48 HR. ERROR
	LAT.	LONG.	DEG. DISTANCE	DEG. DISTANCE
120600Z	29.9N	146.9E	327-290	002-315

AVERAGE 24 HOUR ERROR 148 MI
AVERAGE 48 HOUR ERROR 349 MI



48

110°

30°

110°

20°

04/00Z

05/00Z

06/00Z

07/00Z

08/00Z

09/00Z

10/00Z

11/00Z

12/00Z

24 HR FORECAST POSITS

TYPHOON MARY

03-12 JUN 1960

Legend

○----- 24 HR FORECAST POSITS

———— 6 HR BEST TRACK POSITS

120°

30°

140°

20°

150°

10°